

Action

for Kazakhstan

Jenny Dooley

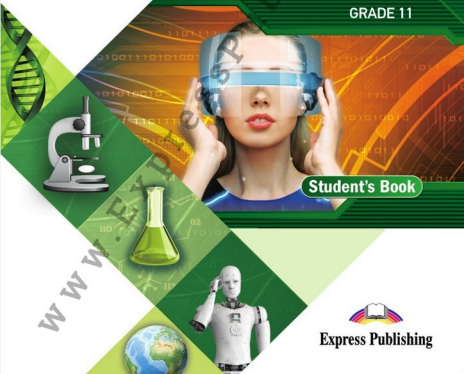
Bob Obee

Translation by: N. Mukhamedjanova

Science Schools

GRADE 11

Student's Book



Express Publishing

Published by Express Publishing

Liberty House, Greenham Business Park, Newbury,
Berkshire RG19 6HW, United Kingdom
Tel: (0044) 1635 817 363
Fax: (0044) 1635 817 463
email: inquiries@expresspublishing.co.uk
www.expresspublishing.co.uk

Exclusive Distributors

LLP 'EDU Stream'
104 Bogenbai batyr, 050002 Almaty, Kazakhstan
Tel: +7(727)293 85 89 – +7(727)293 94 20

© Jenny Dooley – Bob Obee, 2020

Design and illustration © Express Publishing, 2020

Colour illustrations: Angela, Simon Andrews, Kyr, Nathan © Express Publishing, 2020

Music Arrangements by Express studio © Express Publishing, 2020

First published 2020

Printed in Kazakhstan

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, or by any means, electronic, photocopying, or otherwise, without the prior written permission of the publishers.

This book is not meant to be changed in any way.

ISBN 978-1-4715-8442-8

Acknowledgements

Authors' Acknowledgements

We would like to thank all the staff at Express Publishing who have contributed their skills to producing this book. Thanks are due in particular to: Megan Lawton (Editor in Chief), Stephanie Smith and Michael Sadler (senior editors), Andrew Wright (editorial assistant), Brian O'Neil (senior production controller) and the Express Publishing design team; Express studio (recording producer) and Emily Newton, Kevin Harris, Daniel Parker, Erica Thompson and Timothy Forster for their support and patience. We would also like to thank those institutions and teachers who piloted the manuscript, and whose comments and feedback were invaluable in the production of the book. We thank EDU Stream for providing translations.

Module 2: The Shark Whisperer by Adam Higginbotham © Telegraph Media Group Limited 2004 on p. 33;

Module 5: Young entrepreneurs making their mark (texts B and C) © Guardian News & Media Ltd 2017 on pp. 64-65

Photograph Acknowledgements

Module 1: Rosa Lind Franklin © Donaldson Collection/Michael Ochs Archives/Ideal Image on p. 7; Gregor Mendel © Ned M. Seidler/National Geographic/Getty Images/Ideal Image on p. 7; Dolly cloned sheep © PA Images via Getty Images/Ideal Image on p. 7; Module 4: Babylonian astronomers © ROYAL ASTRONOMICAL SOCIETY/Getty Images/Ideal Image on p. 52; Module 5: Leonardo's sketches and drawings: Lighthouse project © DigitalVision/Getty Images/Ideal Image on p. 66; Newton Invents A New Telescope © The Print Collector/Getty Images/Ideal Image on p. 72; Alexander Graham Bell making a telephone call © Hulton-Deutsch Collection/CORBIS/Corbis via Getty Images/Ideal Image on p. 72; J K Starley, cycle engineer © SSP/L/Getty Images/Ideal Image on p. 72; Whittle And Engine © Charles Hewitt/Getty Images/Ideal Image on p. 72; ATM © Keystone/Getty Images/Ideal Image on p. 72; Module 9: A toy Welsh lady doll figurine © Photofusion Images Group via Getty Images/Ideal Image on p. 120

Every effort has been made to trace all the copyright holders. If any have been inadvertently overlooked, the publishers will be pleased to make the necessary arrangements at the first opportunity.

Irregular Verbs

Infinitive	Past	Past Participle	Infinitive	Past	Past Participle
be /bi:/	was /wɒz/	been /bi:n/	leave /li:v/	left /left/	left /left/
bear /beə/	bore /bɔ:/	borne /bɔ:n/	lend /lend/	lent /lent/	lent /lent/
beat /bi:t/	beat /bi:t/	beaten /bi:tən/	let /let/	let /let/	let /let/
become /bɪ'kʌm/	became /bɪ'keɪm/	become /bɪ'kʌm/	lie /laɪ/	lay /leɪ/	lain /leɪn/
begin /bɪ'gɪn/	began /bɪ'geɪn/	began /bɪ'geɪn/	light /laɪt/	lit /lɪt/	lit /lɪt/
bite /baɪt/	bite /baɪt/	bitten /bɪ'ten/	lose /lɔ:z/	lost /lɒst/	lost /lɒst/
blow /bləʊ/	blew /bləʊ/	blown /bləʊn/	make /meɪk/	made /meɪd/	made /meɪd/
break /breɪk/	broke /brəʊk/	broken /brəʊkən/	mean /mi:n/	meant /meɪnt/	meant /meɪnt/
bring /brɪŋ/	brought /brɒt/	brought /brɒt/	meet /mi:t/	met /met/	met /met/
build /bɪld/	built /bɪlt/	built /bɪlt/	pay /peɪ/	paid /peɪd/	paid /peɪd/
burn /bɜ:n/	burnt (burned)	burnt (burned)	put /pʊt/	put /pʊt/	put /pʊt/
burst /bɜ:st/	burst /bɜ:st/	burst /bɜ:st/	read /ri:d/	read /red/	read /red/
buy /baɪ/	bought /bɔ:t/	bought /bɔ:t/	ride /raɪd/	rode /rɒd/	ridden /rɪdən/
can /kæn/	could /kʊd/	(been able to /həʊ wɒld tu:)	ring /rɪŋ/	rang /rɒŋ/	rung /rʌŋ/
catch /kætʃ/	caught /kɔ:t/	caught /kɔ:t/	rise /raɪz/	rose /rəʊz/	risen /rɪzn/
choose /tʃʊz/	chose /tʃɔ:z/	chosen /tʃɔ:zn/	run /rʌn/	ran /rʌn/	run /rʌn/
come /kʌm/	came /keɪm/	come /kʌm/	say /seɪ/	said /seɪd/	said /seɪd/
cost /kɒst/	cost /kɒst/	cost /kɒst/	see /si:/	saw /sɔ:/	seen /si:n/
cut /kʌt/	cut /kʌt/	cut /kʌt/	sell /sel/	sold /sɒld/	sold /sɒld/
deal /di:l/	dealt /di:lt/	dealt /di:lt/	send /send/	sent /sent/	sent /sent/
dig /dɪŋ/	dug /dʌŋ/	dug /dʌŋ/	set /set/	set /set/	set /set/
do /dəʊ/	did /dɪd/	done /dʌn/	sew /səʊ/	sewed /sewd/	sewn /səʊn/
draw /drɔ:/	drew /dru:/	drawn /drɔ:n/	shake /ʃeɪk/	shook /ʃʊk/	shaken /ʃeɪkən/
dream /dri:m/	dreamt (dreamed)	dreamt (dreamed)	shine /ʃaɪn/	shone /ʃɒn/	shone /ʃɒn/
drink /drɪŋk/	drank /drɒŋk/	drunk /drʌŋk/	shoot /ʃu:t/	shot /ʃɒt/	shot /ʃɒt/
drive /draɪv/	drove /drəʊv/	driven /draɪvən/	show /ʃəʊ/	showed /ʃəʊd/	shown /ʃəʊn/
eat /i:t/	ate /eɪt/	eaten /i:tən/	shut /ʃʊt/	shut /ʃʊt/	shut /ʃʊt/
fall /fɔ:l/	fell /fel/	fallen /fɔ:lən/	sing /sɪŋ/	sang /sɒŋ/	sung /sʌŋ/
feed /fi:d/	fed /fed/	fed /fed/	sit /sɪt/	sat /sæt/	sat /sæt/
feel /fi:l/	felt /felt/	felt /felt/	sleep /sli:p/	slept /slept/	slept /slept/
fight /faɪt/	fought /fɔ:t/	fought /fɔ:t/	smell /smel/	smelt (smelled) /smelt/	smelt (smelled) /smelt/
find /faɪnd/	found /faʊnd/	found /faʊnd/	smell /smel/	smelt (smelled) /smelt/	smelt (smelled) /smelt/
fly /flaɪ/	flew /flu:/	flown /fləʊn/	spell /spel/	spelt (spelled) /spelt/	spelt (spelled) /spelt/
forbid /fɪ'brɪd/	forbade /fɪ'beɪd/	forbidden /fɪ'brɪdn/	spend /spend/	spent /spent/	spent /spent/
forget /fɔ:ɡet/	forgot /fɔ:ɡət/	forgotten /fɔ:ɡətən/	stand /stænd/	stood /stʊd/	stood /stʊd/
forgive /fɔ:ɡɪv/	forgave /fɔ:ɡeɪv/	forgiven /fɔ:ɡɪvən/	steal /sti:l/	stole /stəʊl/	stolen /stəʊlən/
freeze /fri:z/	froze /frəʊz/	frozen /frəʊzn/	stick /stɪk/	stuck /stʌk/	stuck /stʌk/
get /ɡet/	got /ɡɒt/	got /ɡɒt/	sting /stɪŋ/	stung /stʌŋ/	stung /stʌŋ/
give /ɡɪv/	gave /ɡeɪv/	given /ɡɪvən/	sweet /swi:t/	swore /swɔ:z/	sworn /swɔ:n/
go /ɡəʊ/	went /went/	went /went/	sweep /swi:p/	swept /swept/	swept /swept/
grow /ɡrəʊ/	grew /ɡru:/	grown /ɡrəʊn/	swim /swɪm/	swam /swʌm/	swum /swʌm/
hang /hæŋ/	hung (hanged) /hʌŋ/	hung (hanged) /hʌŋ/	take /teɪk/	took /tu:k/	taken /teɪkən/
have /hæv/	had /həd/	had /həd/	teach /ti:tʃ/	taught /tɔ:tʃt/	taught /tɔ:tʃt/
hear /hɪə/	heard /hɜ:d/	heard /hɜ:d/	tear /tiə/	tore /tɔ:/	torn /tɔ:n/
hide /haɪd/	hid /hɪd/	hidden /hɪdn/	tell /tel/	told /tɔ:ld/	told /tɔ:ld/
hit /hɪt/	hit /hɪt/	hit /hɪt/	think /θɪŋk/	thought /θɔ:t/	thought /θɔ:t/
hold /həʊld/	held /held/	held /held/	throw /θrəʊ/	threw /θrəʊ/	thrown /θrəʊn/
hurt /hɜ:t/	hurt /hɜ:t/	hurt /hɜ:t/	understand	understood /ʌndə'stʊnd/	understood /ʌndə'stʊnd/
keep /ki:p/	kept /kept/	kept /kept/	wake /weɪk/	woke /wəʊk/	woken /wəʊkən/
know /nəʊ/	knew /nju:/	known /nəʊn/	wear /weə/	wore /wɔ:/	worn /wɔ:n/
lay /leɪ/	laid /leɪd/	laid /leɪd/	win /wɪn/	won /wɒn/	won /wɒn/
lead /li:d/	led /led/	led /led/	write /raɪt/	wrote /rəʊt/	written /rɪtn/
learn /lɜ:n/	learnt (learned) /lɜ:nt/	learnt (learned) /lɜ:nt/			

www.ExpressPublishing.kz

Action

for Kazakhstan

Science Schools

GRADE 11

Student's Book

Jenny Dooley - Bob Obee



Express Publishing

WWW.EXPRESSPUBLISHING.KZ

Contents

	Modules	Grammar	Vocabulary	Listening
Starter	Starter pp. 5-6		<ul style="list-style-type: none"> • Introductory lesson • An Academic New Year's Resolution 	
1	Making Connections in Biology pp. 7-17 Language in Use p. 18 Progress Check pp. 19-20	<ul style="list-style-type: none"> • adjective complements • pre- & post-modifying noun structures • determiners: generic use • apposition/textual referencing 	<ul style="list-style-type: none"> • Journey to biological understanding (biology, modern genetics, taxonomy, blood types) 	<ul style="list-style-type: none"> • a dialogue (multiple choice) • a monologue (listening for specific information) • an interview (TF)
2	The Animal World pp. 21-31 Language in Use p. 32 Progress Check pp. 33-34	<ul style="list-style-type: none"> • present/past perfect • the passive • impersonal sentences • reported speech • present/past tenses • cleft sentences 	<ul style="list-style-type: none"> • Introduction (our natural world) • Analysing specific features of animals (golden eagles, bats, dolphins) 	<ul style="list-style-type: none"> • an interview (TF)
3	The Human Brain pp. 35-45 Language in Use p. 46 Progress Check pp. 47-48	<ul style="list-style-type: none"> • prepositional phrases – clauses of concession – multi-word verbs • past modals • affixes (prefixes and suffixes) • clauses of concession – conditional clauses 	<ul style="list-style-type: none"> • Amazing human brain facts (the human brain – brain technology – neurons) • using memory techniques • giving and following instructions 	<ul style="list-style-type: none"> • dialogues/ monologue (multiple choice) • an interview (multiple choice)
4	Timekeeping Devices pp. 49-59 Language in Use p. 60 Progress Check pp. 61-62	<ul style="list-style-type: none"> • present/past perfect (active/passive voice) • impersonal & cleft structures 	<ul style="list-style-type: none"> • Introduction (timekeeping history) • The history of timekeeping devices (the market, the calendar) • Presenting information through PPT (slideshow presentations) 	<ul style="list-style-type: none"> • a dialogue (answer questions) • a dialogue (multiple choice) • an interview (gap-fill)
5	Work & Inventions pp. 63-73 Language in Use p. 74 Progress Check pp. 75-76	<ul style="list-style-type: none"> • verb complementation • clauses of concession • multi-word verbs • pre- and post-modifying noun structures • adjective complements 	<ul style="list-style-type: none"> • Investigating the world of work (office personalities) • Considering success in business (young entrepreneurs making their mark) • Comparing, analysing and ranking inventions (special talents & inventions, big ideas) • Design your own invention 	<ul style="list-style-type: none"> • monologues (multiple choice) • a monologue (note taking) • an interview (multiple choice)
6	STEM pp. 77-87 Language in Use p. 88 Progress Check pp. 89-90	<ul style="list-style-type: none"> • verb complementation • present/past tenses • future tenses • word formation (affixes – prefixes and suffixes) 	<ul style="list-style-type: none"> • STEM • intelligent energy storage • energy storage solutions • analysing academic language • discussing controversial issues (how to teach scientific language) 	<ul style="list-style-type: none"> • monologues (multiple matching) • dialogue (gap fill) • dialogue (comprehension questions)
7	Reading for pleasure pp. 91-96	<ul style="list-style-type: none"> • present & past tenses 	<ul style="list-style-type: none"> • genres of literature (fiction/ non-fiction) • elements in fiction • imagery 	<ul style="list-style-type: none"> • a lecture (Venn diagram, graphic organiser) • character analysis
8	Recent advances in technology pp. 97-107 Language in Use p. 108 Progress Check pp. 109-110	<ul style="list-style-type: none"> • reported speech • verb complementation • prepositions (with nouns/adjectives/verbs) • prepositional phrases, clauses of concession, multi-word verbs 	<ul style="list-style-type: none"> • Technological, mobile and application tools (technological advances, apps in education, apps for personal and professional use) • Options for future careers (digital natives & future careers) • Producing information leaflets 	<ul style="list-style-type: none"> • a dialogue (gap fill) • an interview (multiple choice) • a job interview (comprehension questions)
9	The Clothes of Chemistry pp. 111-121 Language in Use p. 122 Progress Check pp. 123-124	<ul style="list-style-type: none"> • adjective complements • adverbs/adverbial phrases • apposition/textual referencing 	<ul style="list-style-type: none"> • Introduction (synthetic materials) • Resources and processes involved in manufacturing clothes (wearables & enhanced —, psychotextiles) • Researching the textile industry 	<ul style="list-style-type: none"> • an interview (comprehension questions)

Reading	Speaking & Functions	Writing	Culture Corner/ Curricular
<ul style="list-style-type: none"> Mendel's Peas: Inheritance Explained (T/F/DS) What's in a name? (comprehension questions) Karl Landsteiner (sentence completion) 	<ul style="list-style-type: none"> talk about important discoveries in biology talk about Gregor Mendel talk about taxonomy inviting – accepting/declining 	<ul style="list-style-type: none"> a presentation about Gregor Mendel a presentation about the Linnaean system of classification a text about recent discoveries in blood groups formal-informal writing (emails) 	<ul style="list-style-type: none"> Carl Woese – The Scientist behind a New Domain of Life (open cloze) Biology: Cloning – Making a Copy (matching headings) Olympic National Park (matching headings) Biology: Bees and their World (sentence completion)
<ul style="list-style-type: none"> The Golden Eagles of Kazakhstan (multiple choice) Researcher Profile: Bats (missing sentences) Martina's Marine Biology Blog (T/F/DS) 	<ul style="list-style-type: none"> talk about eagles, bats and dolphins act out an interview about bats compare & contrast: fish & marine mammals giving/asking for opinions – agreeing-disagreeing 	<ul style="list-style-type: none"> a poster about eagles in Kazakhstan a presentation of animals' specific features an opinion essay 	
<ul style="list-style-type: none"> Brain Gain: The Future of Brain Technology (multiple matching) The Rosehip Neurone: A New Type of Brain Cell (T/F/DS) Do You Remember? (missing sentences) The Menkhet (multiple choice) 25 Centuries of Seven Days (missing sentences) How to Make an Effective Slideshow Presentation (comprehension questions) 	<ul style="list-style-type: none"> talk about the human brain talk about brain technology talk about neurones asking for – expressing opinions instructions: how to pair a smartwatch with a phone talk about timekeeping devices talk about the calendar talk about slideshow presentations asking for/giving/responding to advice 	<ul style="list-style-type: none"> a presentation of the human brain a presentation about brain technologies a presentation about neurones a presentation about a memory technique an instructional text a presentation about an ancient time-keeping device a presentation about various ancient calendars tips: how to give a successful presentation a for-and-against essay 	<ul style="list-style-type: none"> Sherlock Holmes: The Method of Loc (paragraph order) Biology: How memories are formed (answer questions) Where Time Begins: The Royal Observatory (open cloze) Geography: Time Zones (missing sentences)
<ul style="list-style-type: none"> Young Entrepreneurs Making Their Mark (multiple matching) A Renaissance Genius (T/F/DS) Bright Sparks (multiple matching) 	<ul style="list-style-type: none"> talk about the world of work (office personalities, benefits) talk about the advantages & disadvantages of different jobs rank inventions in order of importance present your own invention commenting on/reacting to an article 	<ul style="list-style-type: none"> a presentation about a successful young entrepreneur a presentation about a scientist a description of your own invention a letter to the editor 	<ul style="list-style-type: none"> Made in the UK (gap fill) PSHE: How to Stand out from the Crowd (T/F)
<ul style="list-style-type: none"> The Energy Storage Revolution (multiple choice) The Future of Energy Storage (missing sentences) Do you speak Science? (comprehension questions) a biography a background analysis an extract from Frankenstein 	<ul style="list-style-type: none"> talk about STEM & STEM careers talk about intelligent energy storage (benefits) talk about energy storage solutions a presentation of academic language (scientific language/writing) exchanging views/giving reasons – highlighting – introducing an opposing point) evaluate & comment on the views of others reflect on & explore a range of perspectives 	<ul style="list-style-type: none"> a presentation on energy storage benefits a presentation on energy storage solutions a presentation on academic language (scientific language/writing) a speech/presentation develop arguments a film review 	<ul style="list-style-type: none"> MIT: Massachusetts Institute of Technology (missing sentences) Physics: Types of Energy (multiple matching)
<ul style="list-style-type: none"> The 4Cs (multiple matching) Software you app-solutely need in your life (T/F/DS) Meet Generation C (missing sentences) 	<ul style="list-style-type: none"> talk about technological advances talk about educational apps present your own app interview a person for a job a presentation of career options 	<ul style="list-style-type: none"> a presentation of your own app a presentation about career options an information leaflet 	<ul style="list-style-type: none"> The Past, Present and Future of Android OS (open cloze) Design and Technology: Holography: The New 3D (sentence completion)
<ul style="list-style-type: none"> Modern Fashion's Science not an Art (sentence completion) What are your clothes telling you? (multiple choice) Kazakhstan (missing sentences) 	<ul style="list-style-type: none"> talk about synthetic materials and fabric properties talk about features and/or chemicals used in wearables & enhanced clothing present your own smart outfit a presentation about psychotextiles and effect on the human brain a presentation of fashion/clothing industry in Kazakhstan discussing an issue – expressing concern/hope 	<ul style="list-style-type: none"> a presentation of your own smart outfit a presentation on psychotextiles a presentation about the fashion/clothing industry in Kazakhstan a report 	<ul style="list-style-type: none"> The Welsh National Costume (multiple choice cloze) Design & Technology: The Journey of Your Cotton Clothes (heading matching)

Textbook language

In **Reading**, we practise reading skills in English.

In **Listening**, we listen to people talking about a topic related to the theme of the unit/text.

In **ICT** (Information & Communication Technology), we do projects using the Internet to develop our research skills.

Check these words means we check that we know the meanings of the key vocabulary items from a text, or else we look them up in the Word List or dictionary.



Pairwork means we work in pairs (collaboration).



Groupwork means we work in groups of three or more (collaboration).

In **Speaking**, we use the vocabulary/grammar taught in the lesson to talk about a topic related to the theme of the unit/text.

In **Writing**, we learn about different types of writing in the English language.

Writing Tip provides us with information which helps us to complete the writing task successfully.

Useful language provides us with useful/practical phrases related to the theme of the unit.

Plan provides an outline of a writing model which we should follow in the writing task.

In **Study skills**, we learn a helpful tip which helps us become autonomous learners.

In **THINK!**, we develop our critical thinking skills.

In **Vocabulary**, we learn new words related to the theme of the unit/text.

In **Check your Progress**, we evaluate our own progress and identify our strengths and weaknesses.

see
p. GR

means that we refer to the corresponding page of the Grammar reference to get more information about the grammar structures presented in the module.

In **Language in Use**, we practise the vocabulary presented in the module.

In **Progress Check**, we test our understanding of the topics, vocabulary and structures presented in each module.

VIDEO indicates there is a video to watch, related to the theme of the unit/text.

In **Project**, we do creative tasks related to the theme of the unit/text.

In **Culture Corner**, we learn more about different cultures; this section promotes cultural awareness.

In **Curricular**, we link the theme of the module to a subject on the curriculum.

Did you know? provides us with amazing facts related to the theme of the unit/text.

In **Kazakhstan in Action!**, we are presented with interesting facts about Kazakhstan which are related to the theme of the module.

Starter module

Space & Celestial bodies

- 1 11.5.2 Match the pictures to the definitions.

- 1 a collection of billions of stars, gas and dust bound together by gravity
- 2 the star that is at the centre of our solar system
- 3 the celestial body which orbits the Earth
- 4 a large, spherical celestial body that orbits the Sun
- 5 a bright streak of light in the night sky caused when a rock enters the Earth's atmosphere and burns
- 6 a small body that orbits the Sun, composed of ice, with a 'tail'
- 7 a spherical celestial body that orbits the Sun, but is not big enough to be a planet
- 8 small pieces of rock/metal that orbit the Sun
- 9 a ball of gas, generating its own light and heat, visible in the night sky



A The Sun



B galaxy



C comet



D The Moon



E meteor



F star



G planet



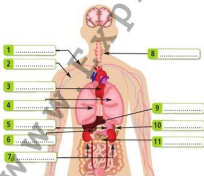
H asteroids



I dwarf planet

Human anatomy

- 2 11.5.2 Label the organs/parts of body. Use: stomach, heart, arteries, veins, pancreas, liver, gall bladder, lungs, spleen, larynx, kidneys.



Chemical elements

- 3 11.5.2 Match the chemical elements (1-8) to their symbols (a-h).

- 1 N
- 2 Ag
- 3 Fe
- 4 Au
- 5 O
- 6 Na
- 7 H
- 8 C

- a oxygen
- b sodium
- c nitrogen
- d iron
- e carbon
- f silver
- g hydrogen
- h gold

Starter module

An Academic New Year's Resolution

- 4 a) 11.4.3 11.5.2 Fill in: nanotechnology, sources, brain, crops, reality, organisation, intelligence, exploration, universe, fossil, engineering, biology, system (x2), pesticides.

Youth SCIENCE FORUM

Forum	What's new	Search
New Posts	FAQ	Forum Actions
	Quick Links	
 <p style="margin-top: 5px;">Ben – 17 yrs, UK</p>	<p>Hi everyone! I've been thinking about my academic new year's resolution for the coming year and have decided that I'd like to study neuroscience at university. I've always been interested in the capabilities of the human 1) , types of intelligence and the nervous 2) I'm planning to go to university open days to find the university with the best course.</p> <p>What are your academic new year's resolutions?</p>	<p>Topics: 2 Posts: 63</p>
 <p style="margin-top: 5px;">Sophia – 17 yrs, Spain</p>	<p>I want to work for an environmental 3) researching renewable energy 4) or looking for ways to reduce the use of 5) fuels. I plan to do a work placement so I can gain experience. I've also started preparing a folder of all my science projects, including the ones on GMO 6) and biological 7) I'm confident this will help me to get a job when I graduate!</p>	<p>Topics: 5 Posts: 78</p>
 <p style="margin-top: 5px;">Vinh – 17 yrs, Vietnam</p>	<p>I've always really wanted to become an astronaut and work at the Baikonur Cosmodrome in Kazakhstan. I'm fascinated by space 8) and astronomy. I'd love to study physics and astronomy and have already started applying to different universities. I know it's ambitious, but my dream is to be able to travel into space and help us discover more about the 9)</p>	<p>Topics: 9 Posts: 43</p>
 <p style="margin-top: 5px;">Jake – 17 yrs, USA</p>	<p>In the future, I'd like to study 10) and build a robot. That's why this summer I'm going to the Tohoku Engineering Summer Programme in Sendai, Japan for two weeks to learn about artificial 11) and robotics. I think it will be an amazing experience!</p>	<p>Topics: 26 Posts: 83</p>
 <p style="margin-top: 5px;">Galnara – 17 yrs, Kazakhstan</p>	<p>For as long as I can remember I've been determined to become a doctor. I'm applying to study medicine at the Asfendiyarov Kazakh National Medical University. I'm looking forward to learning more about molecular 12) , the immune 13) , and the medical applications of modern innovations such as 14) and virtual 15) simulation software.</p>	<p>Topics: 8 Posts: 107</p>

Pages [1](#) [2](#) ... [Last](#)

- b) 11.1.9 11.3.7 What is your academic new year's resolution? Tell the class.

Module 1

Making Connections in Biology

Vocabulary: biology, genetics, taxonomy, blood types

Grammar: adjective complements, pre- and post-modifying noun structures, determiners: articles – generic use, apposition/textual referencing

Everyday English: inviting/accepting – declining

Phrasal verbs: verbs with on

Writing: a formal email

Culture Corner: Carl Woese – The Scientist behind *A New Domain of Life*

Curricular (Biology): Cloning – Making a copy








Vocabulary Biology

- 1 [11.4.3](#) [11.6.2](#) Complete the timeline. Use: posteurisation, fertilisation, Genome, evolution, inheritance, crystallography, taxonomy, helix, domain, clone, transfusion, structure.

Listen and check.

Timeline of Biology

<p>347 BCE Aristotle began to classify living things into different groups and is recognised today as the 'father of 1)</p>	 Charles Darwin 2)	<p>1859 Charles Darwin published his theory of which states that humans evolved over a period of time from simpler life forms.</p>
<p>1862 Louis Pasteur invented the process of 3) This process kills bacteria and helps us to give beverages a longer shelf life.</p>	 Louis Pasteur	<p>1865 Gregor Mendel published his work on Mendelian 4) He performed experiments on pea plants that show how genes are inherited and expressed.</p>
<p>1900 Karl Landsteiner discovered blood types. This helps to make sure that a person who needs a blood 5) receives compatible blood.</p>	 Gregor Mendel	<p>1951 Rosalind Franklin captured photographs of DNA using X-ray 6) giving us clues about its double 7) structure.</p>
<p>1953 James Watson and Francis Crick published their findings on the 8) of DNA using the work of Rosalind Franklin and Maurice Wilkins.</p>	 Rosalind Franklin	<p>1977 A microbiologist called Carl Woese discovered a new 9) of life called Archaea.</p>
<p>1978 The world's first test-tube baby was born. She was conceived via in vitro 10) (IVF).</p>	 Dolly	<p>1996 Dolly the sheep was the world's first 11) produced from an adult cell.</p>
<p>2003 The Human 12) Project was completed. This project succeeded in sequencing the entire genetic code of humans.</p>		

Did you know?

Scientists at the National Centre for Biotechnology in Kazakhstan have developed a pioneering biological adhesive which could reduce the need for surgical sutures and could help patients to heal quickly and safely.

OVER TO YOU!

- [11.3.6](#) [11.1.7](#) [11.1.8](#) [11.2.3](#) [11.3.2](#) [11.3.5](#) [11.3.7](#) [11.5.2](#) [11.5.5](#)
- Put the events in the timeline in order of importance. Explain why. Tell the class.
 - ICT Add some other important discoveries in the field of biology. Present them to the class.

1a Modern Genetics

Vocabulary & Reading

1 11.5.2 Look at the diagram.

Fill in: stem, pod (x2), seed (x2), flower (x2).

🔊 Listen and check.

GREGOR MENDEL

Pea experiment, review, pea seeds

Character	Dominant trait	Recessive trait
1 shape	 Round	 Wrinkled
2 colour	 Yellow	 Green
3 colour	 Violet	 White
4 shape	 Full	 Constricted
5 colour	 Green	 Yellow
6 position	 Axial	 Terminal
7 height	 Tall	 Dwarf

2 11.A.1 11.A.2 11.A.3 Who is Gregor Mendel? What do you know about his experiments on pea plants? Why is he considered the 'father of genetics'?

🔊 Listen and read to find out.



Mendel's Peas: INHERITANCE EXPLAINED

Have you ever wondered why one person in your family has freckles or another has curly hair? To understand this, we need to understand inheritance and how genetic information is passed from one generation to the next. For that, we have to turn to the 'father of genetics', Gregor Mendel.

A short bio

Mendel was an Austrian monk who chose to continue his education and explore his scientific ideas. He was happy that he was able to study physics, botany and natural sciences while also conducting experiments about variation in plants.



Mendel's experiments

He chose to study the pea plant as his primary model system to study heredity because it grows quickly, produces many seeds and can either self-pollinate or cross-pollinate with another plant. His experiments allowed him to discover fundamental principles of inheritance which also apply to people and other animals.

Mendel was curious about what determined variance. He decided to look at seven different pea plant traits: height, seed colour, shape, pod colour, pod shape, flower position and flower colour. He used selective breeding to observe these traits over many generations.

Study skills

Collocations are two or more words that often go together. Learning to use them correctly makes you sound natural in English.

3 11.A.2 Read the text again. Mark the sentences (1-5) as T (true), F (false) or DS (doesn't say).

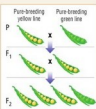
- 1 Gregor Mendel was the first person to study genetics.
- 2 He didn't choose to study the pea plant at random.
- 3 All of the first generation of pea plants showed a particular trait.
- 4 One of his conclusions was that the genes changed when they were passed on.
- 5 Mendel's paper, *Experiments in Plant Hybridization* was quite popular when first published.

4 11.5.2 Fill in: variation, inheritance, allele, model, offspring, breeding. Then make sentences using the phrases.

- 1 generation 2 in plants 3 selective
- 4 dominant 5 primary system
- 6 fundamental principles of

Mendel's findings

Mendel quickly discovered that by breeding a homozygous plant with yellow pea seeds and a homozygous plant with green pea seeds, the first offspring generation were heterozygous yet always had yellow seeds. That is, they inherited a Y (yellow) dominant allele from one parent and a y (green) recessive allele from the other. This meant that they had a 50/50 chance of passing on one or the other alleles to each individual offspring. The next generation, however, always had a ratio of three yellow to one green.



Based on a mathematical analysis of the results of his experiments, he was confident to reach three conclusions. First, each trait is dependent on genes which are passed on unchanged. Second, one gene for each trait is inherited from each parent. Thirdly, some traits may not be apparent in an individual but can be passed on to the next generation. He also concluded that the genotype is always more important than the phenotype when it comes to heredity.

How it was perceived by other scientists

In 1866, Mendel published *Experiments in Plant Hybridization* which detailed his observations and explained his model of inheritance. It was sad that the scientific community took no notice of his work until thirty years later, by which time he had died. However, his work is the foundation of the modern science of genetics.

Mendel's Laws of Inheritance	
Law of segregation	When a gamete is formed, it has one randomly selected allele for each gene.
Law of independent assortment	Different genes for different traits are inherited independently of each other.
Law of dominance	Some alleles are dominant and some are recessive. If both of the alleles in the genotype are different, the dominant one will be expressed in the phenotype. Each allele can be inherited by the next generation.

Check these words

inheritance, variation, primary model system, heredity, variance, selective breeding, homozygous, heterozygous, genotype, phenotype, segregation, gamete

5 11.A.5 11.S.2 Choose the correct item.

Non-Mendelian Genetics

Mendel's research was only the beginning. Scientists have also discovered other ways in which **1) genes/gametes** can be inherited. One example is called **incomplete dominance**; this is when two **3) alleles/cells** produce a blended **4) trait/offspring** (e.g. red + white = pink). Another example is **co-dominance** when two or more alleles are **5) dominant/recessive** and can both be seen (e.g. red + white = red + white). Finally, there are sex-linked traits; these are **6) passed/inherited** on from one **7) generation/offspring** to the next, but are often only seen in members of one sex.

Speaking

6 11.1.6 11.3.2 11.3.7 Present Gregor Mendel and his laws of inheritance to the class.

Grammar

Adjective complements

see p. GR1

7 11.6.3 An adjective complement is a phrase that modifies an adjective. Find examples in the text.

8 11.6.3 Match the two columns to form complete sentences.

- | | |
|--|---|
| <input type="checkbox"/> 1 Aizhan was devastated | a to be of help. |
| <input type="checkbox"/> 2 They were relieved | b how Mendel was able to make such discoveries in his lifetime. |
| <input type="checkbox"/> 3 Professor Bolat is unsure | c when she learned her research had been destroyed in the fire. |
| <input type="checkbox"/> 4 We're just glad | d whether our research is worth publishing. |
| <input type="checkbox"/> 5 Jane was shocked | e to learn the disease was not genetic. |
| <input type="checkbox"/> 6 It is amazing | f to discover the gene in her own family. |

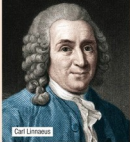
Writing

9 11.1.4 11.1.6 11.1.8 11.2.5 11.3.2 11.3.5 11.5.1 11.5.2 11.5.5 ICT Collect more information about Gregor Mendel and his experiments/theories. Prepare and give the class a presentation. Answer questions. Evaluate other speakers' performances.

1b Taxonomy



What's in a name?



Carl Linnaeus

Did you know that *Huso huso*, *Panthera uncia* and *Agulus nipalensis* are all species native to Kazakhstan? Perhaps you know these animals better by their common names, the beluga sturgeon, the snow leopard and the steppe eagle. Scientific names are not often used by the general public, so have you ever wondered about their origin, or why every known species on Earth has one?

The way in which we name and classify living organisms dates all the way back to Aristotle in ancient Greece. Aristotle, known as the 'father of science' created the field of taxonomy to describe and organise life forms. The word itself comes from the ancient Greek words *taxinon*, meaning 'arrangement', and *nomia*, meaning 'method'. Early taxonomy was based on the type of organism – a plant, an animal, a bird or a fish – and a description of its characteristics, for example, a hard wooden stem or pointed leaves. Aristotle began to classify living organisms based on their attributes such as giving birth to live young, laying eggs and having blood or not having blood. In fact, these attributes roughly equate to the categories mammals, non-mammals, vertebrates and non-vertebrates (invertebrates) that we use today. Aristotle had a student called Theophrastus who carried on this tradition, going on to name around 500 plants and their uses in *Historia Plantarum*, and as a result came to be known as the 'father of botany'. It wasn't until the Renaissance and the invention of optical lenses that scientists were able to better observe the characteristics of living things and

Vocabulary & Reading

- 1 [11.2.1] [11.2.2] [11.4.1] [11.4.2] [11.4.3] The diagram shows the Linnaean system of classification. What do you know about it and Carl Linnaeus who developed it? Which two of these seven classifications are used in the scientific name of a living organism?

🔊 Listen and read to find out.

Taxonomy is the branch of science concerned with classification, especially of organisms. The aim of taxonomy is to describe and organise life forms.

The Linnaean System of Classification



Check these words

classify, attributes, equate to, vertebrate, invertebrate, optical lens, taxonomists, binomial, genus, invalid, harbour

- 2 [11.1.8] [11.2.5] [11.3.2] [11.3.5] [11.4.1] [11.5.2] [11.5.5] Read the text again and answer the questions.

- 1 Why is Aristotle called the 'father of science'?
- 2 What name did Theophrastus earn for himself?
- 3 Why were more detailed observations possible during the Renaissance?
- 4 What did John Ray publish and when?
- 5 What happened to the original names of organisms after the Linnaean system was introduced?

- 3 [11.5.2] Complete the summary. Use words from the

Check these words box.

The first attempt to 1) and name living organisms dates back to ancient Greece, when Aristotle and his student Theophrastus divided animals and plants according to their 2) such as being a(n) 3) or a(n) 4) The invention of the 5) lens some centuries later led to more detailed observation of organisms during the Renaissance period. Using the work of Renaissance 6) as a foundation, Carl Linnaeus introduced a standardised 7) naming system for all species, whereby the name of each is made up of the 8) and a unique name.

give even more new **species names**. Major taxonomists during these periods were Andrea Cesalpino who included over 1,500 plant species in *De Plantis* in 1583, John Ray who published **details of over 18,000 plant species** in *Methodus Plantarum Nova* in 1682 and Joseph Pitton de Tournefort who described over 9,000 species in 698 genera in *Institutiones Rei Herbariae* in 1700.

Following on from their work, Carl Linnaeus, a Swedish botanist, became the 'father of modern taxonomy'. Linnaeus changed the way organisms were classified using their class, order, genus and species, which came to be known as the Linnaean system. He also introduced a standardised binomial naming system in the 18th century which requires all species to be given a two-part scientific name made up of the **genus and a unique name** for that particular species. Since the **binomial naming system** became popular, all old names became invalid and new names following the rules of the system were given. In fact, today, almost every organism on our planet already has a scientific name. However, there are still some places that harbour unknown species, such as the depths of our oceans and our unexplored forests and jungles.

FACT

The taxonomy of a new species must be published in a work of scientific record.

Grammar

Pre- and Post-modifying noun structures

see p. GR1

- 4 a) **11.6.1** Noun modifiers (pre- and post-modifiers) are words that give extra information to the noun they refer to. Identify the underlined modifying noun structures in the text.
- b) **11.6.1** Find and identify the modifying noun structures below. Then, write sentences applying the theory based on the text.
- I'll meet you outside the university laboratory.
 - We saw some of Linnaeus's notebooks in a glass case at the museum.
 - She's done a two-year course in biology.
 - I bought a new drawing book yesterday.
 - Linnaeus invented a system which revolutionised taxonomy.

Listening

- 5 **11.2.1 11.2.2 11.2.5** Listen to two friends discussing plant taxonomy. For questions 1-4, choose the correct answer A, B or C.
- Lauren says that the Asteraceae family
 - also includes orchid plants.
 - contains more than 19,000 different plants.
 - means 'sunflower' or 'daisy' family in Latin.
 - Marigold flowers
 - have a similar appearance to calendula.
 - can be made into teas and tinctures.
 - are often used in herbal medicine.
 - Lauren says the word *Tagetes* indicates a plant is
 - potentially poisonous.
 - used for herbal remedies.
 - from the same genus as marigolds.
 - Officinalis* is a Latin word used to describe some plants which
 - are commonly used in cooking.
 - have historically been used as herbal remedies.
 - were named long ago in history.

Speaking & Writing

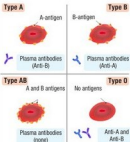
- 6 **11.1.4 11.2.5 11.3.2 11.3.5** **THINK!** How does taxonomy help scientists study (understand) the natural world? Why is taxonomy important for the biodiversity (animals and plants) in a particular area? Discuss in groups. Evaluate each other's performance and give feedback.
- 7 **11.1.2 11.1.4 11.1.6 11.1.8 11.4.8 11.5.3 11.5.2 11.5.7 11.5.9** **ICT** Find out what categories of living organisms are included in each group in the Linnaean system of classification (see Ex. 1). You can include information about the classification of a living organism. Prepare and give a presentation to the class. Compare your presentation to your classmates'. Evaluate each other's performances and give each other feedback.

1 Blood Types

Vocabulary

- 1 **11.4.3** **11.5.2** Fill in: antibodies, platelets, antigens, plasma. Check any unknown words in your dictionaries.
- 🔊 Listen and check.

ABO blood groups



Blood consists of red blood cells, white blood cells, 1) (small cells) and 2) (liquid part of blood). Antibodies and antigens in the blood identify your blood group. 3) are proteins in plasma which protect the body from foreign substances in the blood such as germs. 4) are molecules on the surface of red blood cells that help produce antibodies.

Listening & Reading

- 2 **11.4.3** Who was Karl Landsteiner? How is he related to blood type compatibility?
- 🔊 Listen and read to find out.

Check these words

immunology, Pathological Anatomy, clump, blood transfusion, paternity test, clot



Karl Landsteiner was born on 14th June, 1868 in Vienna and was brought up by his mother after his father died when he was just six years old. Karl studied medicine at the University of Vienna and graduated in 1891. Before he had even finished studying, though, Karl began to carry out research into the composition of human blood. He spent five years after he graduated working at labs in Zurich, Wurzburg and Munich.

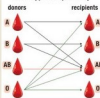
Upon returning to Vienna, Landsteiner worked at a hospital where he continued his studies and developed an interest in immunology. Over the next twenty years, he carried out research, wrote papers and even worked as a professor of Pathological Anatomy at the university where he had once studied. Later in his life, Landsteiner worked in Holland and the US before he had a heart attack in his lab. He died two days later in hospital on 26th June, 1943.

During his life, Landsteiner contributed to many different areas of immunology, but the one he is most famous for is his discovery of blood groups in 1901 which he later won the Nobel Prize for in 1930. His work continued that of another scientist called Landois in 1875 who noticed that human blood clumps together when it comes into contact with animal blood and so humans cannot receive blood transfusions from animals. However, Landsteiner pointed out that this same reaction can happen when blood is transferred from one human to another. On closer inspection of blood cells, Landsteiner classified them into several groups which he named A, B, AB and O. These groups are named based on antigens present on the surface of the blood cell and antibodies present in the blood. From this, he discovered that in order for a successful blood transfusion to take place, the person donating the blood must have a blood group that is compatible with the person who receives it.

But his work didn't just help people to receive blood, Landsteiner also used it as one of the first types of basic paternity tests after he understood how different blood groups were inherited genetically by children from their parents.

Today Karl Landsteiner's work saves millions of lives each year. A blood transfusion, a common but lifesaving procedure, can only be successful if the blood groups of all donors and recipients are checked carefully. This ensures that the blood being transferred won't clot and be rejected by the recipient's body. So, if you or anyone you know has ever had a blood transfusion – it's all down to the hard work and research done by this incredible scientist.

blood type compatibility



- 3 **11.4.5** Read the text and complete the sentences 1-5.

- 1 Karl Landsteiner graduated with a degree in medicine from
- 2 He held a position at the University of Vienna as
- 3 In 1930, Landsteiner won the Nobel Prize for
- 4 This discovery was inspired by Landsteiner's observation that
- 5 Landsteiner's blood types were named based on

- 4 **11.5.2** Fill in: reaction, recipients, transfusion, paternity, immunology.

- 1 is the scientific study of how the body protects itself.
- 2 There was a strange when the two blood types came into contact with each other.
- 3 The accident victims received blood from anonymous donors.
- 4 of blood type O can have any blood group.
- 5 Landsteiner used blood as a test.

- 5 **11.2.3 11.3.2 11.3.4 11.3.5**  Which of the information in the text do your classmates consider most important? Why? Discuss in groups.

Grammar

Determiners: Articles - Generic use


see
p. GR1

- 6 **11.6.2** Fill in: a/an, the or - .

- 1 experiment can help a researcher prove their theory.
- 2 antibodies exist in our blood.
- 3 The project gives free medical care to poor.
- 4 lab is where scientists conduct experiments.
- 5 knowledge is the foundation on which science was built.

Apposition/Textual referencing

see
p. GR1

- 7 **11.6.2**  Look at the underlined sentences in the text. Say which shows: apposition? textual referencing? Check in the Grammar Reference section.

- 8 **11.6.2** Rewrite the sentences using:

a) **apposition.**

1 My professor discovered a new chemical element. His name is Dr James.

My professor, Dr James, discovered a new chemical element.

2 Paul and Stephen carried out the research. They are some of the most experienced immunologists at the facility.

3 Haemophilia is a hereditary condition. It is a serious blood disorder.

4 Charles Darwin was born in 1809. He is one of the most famous biologists in history.

b) **textual referencing.**

1 Free healthcare will become a reality for many citizens soon, although free healthcare has been the norm for some of us for many years.

2 Joseph Lister made many fascinating discoveries, although Joseph Lister is mainly remembered for promoting sterile surgery.

3 Pierre and Marie Curie conducted research into radioactivity. Pierre and Marie Curie's research won the Nobel Prize in 1903.

Listening

- 9 **11.2.1 11.2.2 11.2.5**  Listen to an interview about a recent discovery regarding blood groups. Mark the sentences 1-5 as T (true) or F (false).

- 1 Type O blood contains both A and B antigens.
- 2 The interviewer doesn't think the new discovery has any practical use.
- 3 Dr Richards wasn't involved in the research she is discussing.
- 4 The gut enzymes studies are the most effective known enzyme for breaking down antigens.
- 5 Dr Richards doubts whether the technique will work in reality.

Writing

- 10 **11.1.6 11.1.8 11.4.8 11.5.1 11.5.2 11.5.5** ICT

Do some Internet research to find out more information about recent discoveries in blood groups. Use information from Ex. 9 and your research to write a short text about it.

1d Writing

Formal/Informal writing

Writing Tip

Writing formal/informal emails

Informal emails are sent to people you know very well (e.g. a friend, a family member, etc.) For this reason, they use a friendly tone with informal language and a chatty style.

Formal emails are sent to people in an official position or people you do not know well (e.g. a head teacher, a newspaper editor, a local councillor, a personnel manager, etc.) They are written in a formal style with a polite, impersonal tone.

Register

Informal style

Greeting: Dear Andy/Uncle Fred/Dad/Hi Donna/etc.

- friendly, relaxed, personal style (It was great to hear from you.)
- frequent use of colloquial expressions (I haven't seen you for ages.), idioms (It cost an arm and a leg.), phrasal verbs (set up, turn up, get on), contractions (I've, there's, won't)
- omission of pronouns (Heard you were ill.)
- simple linking words (and, but, so)

Sign off: Love/Yours/Take care/All the best (first name)

Formal style

Greeting: Dear Sir/Madam, Dear Mr/Ms + surname

- serious impersonal style e.g. I would like to extend an invitation to you to ... (instead of: I'd like to invite you to ...)
- advanced vocabulary e.g. I am writing to enquire whether ... (instead of: I want to ask if ...)
- no colloquial English e.g. Please inform me of any developments. (instead of: Please let me know what happens.)
- frequent use of passive voice e.g. I am honoured to be invited to ... (instead of: Thanks for inviting me to ...)
- formal linking words/phrases (consequently, therefore, moreover, etc.) e.g. I have been charged with organising the event and therefore I would like to extend an invitation to you to attend.

Sign off: Yours faithfully, (when you do not know the name of the recipient)/Yours sincerely (when you know the name of the recipient) (your full name)

Useful language

Opening remarks

- I am writing to ...
- It is with great pleasure that I write to ...

Making invitations

- I wish to invite you to attend ...
- It would bring me great pleasure if you could attend ...
- It would be an honour to have you as our guests ...
- I would like to invite you to attend ...
- On behalf of ... please accept our invitation to attend ...

Closing remarks

- I genuinely hope that you will accept my invitation.
- I look forward to hearing from you.
- If you have any questions, don't hesitate to contact me.
- Please inform me if you are able to attend.

1 **11.3** **11.54** Which style (informal, formal) would you use in an email to:

- the director of studies at a science university?
- a classmate from your biology class?
- a well-known scientist?
- a fellow member of your science club?
- a journalist who wrote an article in a science magazine?
- a relative asking them about their job?
- your penfriend inviting them to stay with you?

Rubric analysis

2 a) **11.53** **11.54** Read the rubric and underline the key words. Then answer the questions.

Your school is holding a Science Week next month. Your teacher has asked you to invite a scientist from a university abroad to give a talk to students. Write an email to the scientist inviting them to attend the science week and give a talk. Give details about where and when the event will take place and say why you chose to ask him/her. Write your email (120-180 words).

- Who is going to read your email?
- Why are you writing it?
- What style will you write in?
- How many main body paragraphs will you include? What will each be about?

Register

- b) **11.4.1** **11.4.5** **11.5.3** **11.5.4** Read the model answer for Ex. 2a. Replace the informal bold phrases (1-7) with their correct formal equivalents (a-g).

Dear Mr White,

1) I thought I'd drop you a line to invite you as a guest speaker to give a talk to Year 11 students at a Science Week to be held at our school in Almaty.

2) We'd love it if you would say yes.

The Science Week will take place from the 11th to the 15th February on campus in Almaty. **3) It's up to you what you talk about.** However, it should be science-related.

4) We picked you to give a talk because we admire and respect your work. **5) Also, you're really famous** and therefore your presence would be inspiring to the students.

6) Ask me anything you want to know.

I genuinely hope that you will accept my invitation.

7) Can't wait to hear from you.

Yours sincerely,

Ulan Aliyev

- a If you have any questions, do not hesitate to ask.
 b The topic of your talk would be entirely your decision.
 c We specifically asked you
 d I look forward to hearing your response.
 e I am writing
 f We would be honoured if you would accept.
 g Moreover, you are an eminent scientist

3



11.2.1 **11.2.2** **11.3.2** **11.3.4** **11.3.5** Read the advert. You are at a college in England. Use the phrases from the language box to invite your friend to the event advertised in the poster. Should you use formal or informal style?

Lime Tree College is holding a

SCIENCE FAIR

On Saturday 27th April, 10 am - 4 pm.

Dress up as your favourite scientist!

There will be amazing science experiments to watch and try!

Lots of food and refreshments.

Plus, a competition to build the best DNA double helix.

Tickets only £3 each!

Inviting
<ul style="list-style-type: none"> Do come to ... • Please come to ... • (How) Would you like to (+inf)? • What/How about (+ -ing form)? I'm thinking of ...
Accepting
<ul style="list-style-type: none"> That sounds great. • I think it's a great idea. • That's an excellent idea! • Good thinking. • OK. Why not? I'd love to.
Declining
<ul style="list-style-type: none"> I don't think it's a good idea. • I don't think so. I'm not sure about that. • How about ... instead?

- 4 **11.1.2** **11.1.4** **11.4.5** **11.5.3** Read the rubric and underline the key words. Then answer the questions.

You are the president of your school science club. Your school is holding a Science Fair where students will display their science projects and listen to talks on scientific topics by guest speakers. Write an email to the head teacher of a school abroad inviting them to participate in the Science Fair. Give details of the time, place and activities of the event. Write your email (120-180 words).

- Who are you and who are you writing to?
 - What style will you write in and why?
 - What greeting/ending will you use and why?
 A Dear Mr Brown, Yours faithfully
 B Dear Mrs Jones, Yours sincerely
 C Dear James, Take care
 - Which points should you include?
 • the success of last year's Science Fair
 • descriptions of the science projects
 • what will happen at the Science Fair
 • when and where the Science Fair will take place
- 5 **11.5.1** **11.5.3** **11.5.4** **11.6.1** **11.6.2** **11.6.3** Write your email. Use the Useful Language on p. 14 and the plan.

Plan

- Greeting:** Dear Mr/Mrs ...
§ 1: opening remarks, reason for writing (invitation to Science Fair)
§ 2 & 3: developing of topics (who you are, details of time, place & activities)
§ 4: closing remarks
 sign off

1e Culture Corner

Carl Woese

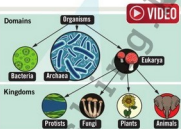
The Scientist behind A New Domain of Life

Did all living things on planet Earth evolve from one common ancestor? This is a big question 1) Carl Woese, an American microbiologist and biophysicist, was curious to answer. However, his research into the subject led 2) the discovery of far more than just an answer to this question.

Woese was born in New York in the USA on 15th July, 1928. He was fascinated by science from a very young age and wanted to become a scientist. He gained a degree in Mathematics and Physics at Amherst College in Massachusetts and had 3) interest in Biology at that time. However, one of Woese's college professors recommended he studied biophysics, so just three years later, aged 24, he graduated with a PhD in Biophysics.

Woese continued his education by studying medicine and carrying 4) research into bacteria, viruses and genetics. He was very interested in the work done 5) two scientists called Linus Pauling and Emile Zuckerkandl who investigated evolution and genetics based on the DNA and RNA of organisms.

At that time, there wasn't an experimental method 6) answer this question. But, this didn't stop Woese. In fact, he created his own. He realised that by analysing and comparing



genetic information in the ribosomes of the organisms, he could compare the 7) easily. During his research and experimentation, Woese discovered a whole new domain of life. At first, a lot of other scientists didn't agree with his findings 8) his experimental method. In fact, it took around a decade before his work was widely accepted. His discovery meant that he could redraw the tree of life including the new domain.

For many years, it was widely accepted that life on Earth was split 9) two domains; prokaryotes and eukaryotes. Prokaryotes are organisms with cells that do not contain a nucleus, for example, bacteria. Eukaryotes are organisms with cells that do contain a nucleus, like animals and plants. However, Carl Woese discovered the domain archaea. Archaea are microbes much 10) bacteria, but with a different genetic makeup. At first, people thought archaea only lived in extreme environments like in geothermal springs like those at Yellowstone Park, but actually, you can find Archaea everywhere; 11) the soil in your garden to inside your own digestive system. Unfortunately, scientists still don't know very much about them and still have a 12) to learn.

Check these words

biophysicist, DNA, RNA, archaea

1 [11.1.8] [11.3.5] [11.4.3] Look at the picture and read the title of the text. Check any unknown words in the Word List. What do you know about Carl Woese and 'Archaea'? Discuss in pairs. Read to find out.

2 [11.4.2] Read the text again and fill in gaps 1-12 with the appropriate word.
Listen and check.

3 [11.4.5] Match the words in bold in the text to their definitions.

- a microorganism
- an organism's genetic information
- cell organelles that contain genetic information and help us make proteins
- a part of a cell where the DNA is contained (in eukaryotes)


4 [11.2.5] [11.3.2] [11.3.4] [11.3.5] **THINK!**
How important do you think this discovery is? How do you think it can help the scientific world? Tell the class.


5 [11.1.6] [11.1.8] [11.4.8] [11.5.2] [11.5.5] [11.5.6] [11.6.3] **ICT** Find information about a scientist from your country. Write: a short bio (place of birth, education, etc.), work (including any discoveries they have made), awards and contribution to the world. Present him/her to the class.

- 1 **11.1.4** **11.4.3** **11.5.2** The diagram shows the animal cloning process. Check any unknown words in your dictionaries. What would you like to know about cloning? Write down three questions you would like to ask. Read to see if you can answer your questions.

- 2 **11.2.3** **11.4.1** **11.4.2** Read the text and match the headings (A-E) to the gaps (1-4). There is one extra heading.

- A How can we make clones of plants and animals?
 B Is it a bad idea to clone animals?
 C How can we clone an animal?
 D What is cloning?
 E Is it a good idea to clone animals?

- 3 **11.2.5**  Listen to the text. Is the author in favour or against cloning? What about you? Why? Tell the class.

- 4 **11.1.2** **11.1.4** **11.1.6** **11.3.2** **11.3.5**
11.5.2  In pairs, find the main idea in each paragraph to give a short summary of the text. Evaluate other speakers' performances and ask for/give feedback.

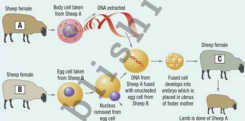
- 5 **11.1.8** **11.4.8** **11.5.1** **11.5.2** **11.5.5**
11.6.3 **ICT** Find more information about cloning. Research: recent developments, advantages and disadvantages, cloning and genetic engineering and amazing facts about cloning. Present it to the class.

Check these words

tissue, plant tissue culture, nucleus, defect

Cloning

Making a Copy



1 _____

Cloning is a process used to create a genetically identical copy of a living organism. So far, scientists have successfully cloned DNA, cells, tissues and whole plants and animals.

2 _____

A lot of commercial plants are created by a process called plant tissue culture, where part of a plant is cut off and a new plant is grown from the cutting. But, it doesn't stop at plants. Scientists in the UK made history when they cloned Dolly the sheep. They extracted DNA from an adult sheep cell and inserted it into an unfertilised egg which they had removed the nucleus from. The egg was implanted into a female sheep to grow and Dolly the sheep was born.

3 _____

Cloned animals may have some benefits. They could be used in medicine for testing new drugs and medical treatments. They may also be useful in agriculture as clones of animals that produce a lot of meat or milk. Cloning could also be used to save certain animal species from extinction. Nevertheless, the cloning process is so expensive that none of these options are very practical at the moment.

4 _____

Cloning has not yet been perfected and many cloned animal embryos do not survive. Dolly the sheep was the only clone to be born after 276 attempts. Cloned animals also often have defects such as large organs and problems with their immune systems. They also age fast and die young. Dolly only lived for 6 years – half the average lifespan of a normal sheep. As for cloning endangered species, that idea is not a good one because producing a population of genetically identical organisms would only mean that they would lack the genetic variation necessary for species survival.

1 Language in Use

Phrasal verbs/Prepositions

- 1 **11.52** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- The doctor told the patient to while they checked his blood type. (wait)
- I well with everyone else in my Biology class. (have a good relationship)
- It's unlikely that cloning animals will for various reasons. (become popular)
- The audience as the scientist replicated his experiment live on stage. (watch)
- When I finished my biology course, I my textbooks to my brother. (give something to someone else)
- The students decided to a show during Science Week. (arrange an event)

- 2 **11.6.3** Choose the correct preposition.

- We can't do the blood transfusion until we find a donor who has a blood type that is compatible **with/to** the patient.
- As a general rule, mammals don't lay eggs, but this doesn't apply **to/for** the platypus.
- Are you still carrying out research **in/into** that newly-discovered plant species?
- Type A blood clots when it comes into contact **at/with** Type B blood.

Collocations

- 3 **11.52** Fill in: breeding, generation, variation, allele, tissue.

- 1 plant culture 2 selective
- 3 genetic 4 dominant/recessive
- 5 offspring

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- The of the gene depends on both parents carrying it. (INHERIT)
- Blood must have their blood type identified before a transfusion. (RECEIVE)
- This beautiful flower is the product of between two species. (HYBRID)
- Charles Darwin's theory of is widely accepted by scientists. (EVOLVE)
- My brother studied at university. (IMMUNE)

Words often confused

- 5 **11.52** Choose the correct word.

- There is a huge **variety/variation** between petal shape and colour in plants.
- I'm very interested in pursuing a career in **genetics/genetic**.
- We haven't tested it on a(n) **living/live** organism yet.
- We can use DNA in order to carry out an accurate **paternal/paternity** test.
- The invention of the **optic/optical** lens was a great moment in the history of biology.



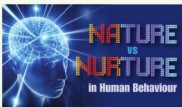
Kazakhstan in Action!

Read and fill in the correct word.

- In April 2019, the Council of International Schools (CIS) awarded an accreditation 1) the Nazarbayev Intellectual School of Chemistry and Biology in Almaty for the high standards achieved there.
- Biologists at Al-Farabi Kazakh National University have 2) a cooperation agreement with Altai Botanical Garden in Russia. KazNU's Department of Biodiversity and Bioresources will run joint PhD programs with Altai Botanical Garden, and aims to

develop applied zoological research and create high quality publications 3) the near future.

- Scientists at Oregon National Primate Research Centre 4) created human stem cells. The research team, led 5) Kazakh-born scientist Dr. Shukhrat Mitalipov, applied the same techniques famously 6) to clone Dolly the Sheep. They hope to use 7) stem cells to treat degenerative diseases, 8) as Parkinson's.



Are we a product of our genes or our environment? We can attribute our appearance to a mixture of both genetics and our environment. But what about our behaviour? Is it based on the environment or are we biologically hardwired to behave in a certain way?

The Biological Perspective

The biological perspective, or biopsychology, is a rapidly growing branch of psychology that considers the effect of biology on our behaviour. However, this approach isn't a new one. In fact, the idea that our behaviour could be determined by our genes was documented by Charles Darwin in 1859. His theory of natural selection stated that genes that led to survival were passed on to the next generation.

Investigating the biology behind our behaviour

Scientists can investigate the biological causes of behaviour by carrying out research into the structure and function of the brain. One of the most important cases in this area of psychology is that of Phineas Gage in 1848. Gage was involved in an accident and sustained a major brain injury. Luckily, he survived, but his behaviour and personality totally changed as a result.

How does the biological perspective help us?

The biological perspective has contributed to our understanding of human behaviour. Research at Vrije University in Amsterdam has identified 'happiness genes'. The huge international study involving 298,000 participants showed that there are three genetic variants for happiness. These variants control the way in which we experience happiness and provide an explanation as to why we don't all respond to it in the same way. Biopsychology can also help those with brain disorders. In fact, researchers at the University of Manchester in the UK have been developing a test for Parkinson's disease before symptoms develop. This would help patients take medicines that delay the onset of the disease.

A limited approach?

Like all approaches in psychology, the biological perspective has its limitations. For example, it doesn't take into account the effects of our environment, upbringing, culture and emotions on our behaviour. We all have different behaviours, but is this because we are all genetically unique or because we were raised in different conditions in different countries and have experienced different things? What do you think is human behaviour a result of our genetics, our environment or a mixture of the two?

Progress Check

1

Reading

- 1 **11.4.1** **11.4.2** For questions 1-5, choose the correct answer A, B, C or D.

- Biopsychology
 - is a recently-developed science.
 - is becoming more popular.
 - was created by Charles Darwin.
 - isn't studied by many people.
- What is true about Phineas Gage?
 - He proved biology doesn't affect behaviour.
 - He was born with a brain disorder.
 - His injury had no effect on his behaviour.
 - A brain injury gave him a new personality.
- What is NOT true about the research in Amsterdam?
 - They located genes for happiness.
 - It took place across several countries.
 - It identified three types of happiness.
 - It explains behavioural differences.
- Experts in the UK have
 - discovered a cure for Parkinson's disease.
 - found a way to diagnose Parkinson's.
 - cured a person with Parkinson's.
 - tested a medicine to prevent Parkinson's.
- The approach is limited because it doesn't
 - explain why we behave differently.
 - have its basis in psychology.
 - consider environmental factors.
 - take genetics into account.

5x2=10 marks

Listening

- 2 **11.2.2** Listen to a conversation about a science fair. For questions (1-8), complete the sentences.

**BLUE HILLS
SCIENCE FAIR**

Doctor Oldham is travelling from **1** _____.

There will be a **2** _____ on winter illnesses.

There is a competition to make **3** _____ of the human body.

The competition prize is a book token worth **4** _____.

Visitors will have the opportunity to see lots of science **5** _____, including examining various kinds of **6** _____ under a microscope.

There will be a new food stall selling **7** _____.

The event will take place on Saturday **8** _____.

8x2=16 marks

1 Progress Check

- 3 **11.5.2** Fill in: classify, introduce, clot, clone, determine, clump, conduct, cross-pollinate, contribute, inherit.
- When you cut yourself, your blood should to help stop the bleeding.
 - Your eye colour is among the traits you genetically.
 - The binomial naming system is used internationally to animals and plants.
 - Aristotle was probably the first person to a system for organising living things into categories.
 - Receiving an incompatible blood type can cause your blood to
 - Genetics can variance in plants.
 - Do you need permission to experiments in this laboratory?
 - Her job is to tomato plants to create new varieties.
 - A low white blood cell count can to low immunity.
 - Some people think it is unethical to human cells to make identical ones.

10x2=20 marks

- 4 **11.6.3** Match the two columns to form complete sentences.

- We are unsure
- Ulan was thrilled
- I was pleased
- She was upset
- It was kind of you

- to write the paper with my supervisor.
- to help me revise for my exams.
- to discover her research results had been modified.
- how to apply for funding for the project.
- when he was invited to speak about the Human Genome Project.

5x2=10 marks

- 5 **11.6.1** Underline the pre- and post-modifiers in sentences 1-4. Then match each to the correct type: a relative clause, two nouns together, value, a noun ending in -ing.

- The research involved in cloning a plant required a ten-thousand-dollar investment.
- He suffers from a serious clotting disorder.
- We identified the plants which had rare genetic characteristics.
- This test will give us information about your blood platelets.

4x3=12 marks

- 6 **11.6.2** Rewrite the sentences using:

a) apposition.

- My friend studies immunology. Her name is Anna White.
- Cystic fibrosis is related to the lungs. It is a genetic disorder.

b) textual referencing.

- Receiving hemodialysis is a time-consuming treatment, although receiving hemodialysis is a means of survival for some people.
- Rosalind Franklin made great discoveries about DNA, but Rosalind Franklin's discoveries didn't win her a Nobel Prize.

4x3=12 marks

- 7 **11.5.3** **11.5.2** **11.5.3** **11.5.4** **11.5.5** Read the rubric and write your email.

Your school is hosting a Biology Day next month. Your teacher has asked you to invite an immunologist/doctor from the local University Hospital to give a talk to students. Write an email to the scientist inviting them to attend the event and give a talk. Give details about when and where the event will take place and say why you chose to ask him/her. Write your email (120-180 words).

20 marks

Total: 100 marks

Check your Progress

- talk and write about major breakthroughs in biology _____
- talk and write about cloning _____
- invite - accept - decline _____
- write a formal email _____

GOOD ✓ VERY GOOD ✓✓ EXCELLENT ✓✓✓

Module 2

The Animal World

Vocabulary: our natural world, golden eagles, bats, dolphins

Grammar: present/past perfect, the passive, reported speech, present/past tenses

Everyday English: giving/asking for opinions – agreeing – disagreeing

Phrasal verbs: verbs with up

Writing: an opinion essay

Culture Corner: Olympic National Park

Curricular (Science): Bees and their World



Vocabulary

Introduction

Our natural world

- 1 **11.3.5** Which picture shows: *wild animals? mountains? birds? a river? the ocean? a lake? a forest? a desert? a waterfall?*
 ☞ Listen and check, then say.

- 2 a) **11.4.2 11.4.3 11.4.5** Fill in: *provide, cover, home, lack, shelter, areas, drop, insects.*

A They are one of nature's treasures. They are 1) with a lot of trees and 2) about 30% of the Earth's land surface. They provide food and 3) to people and animals.

B They take up 70% of the Earth's surface. They are 4) to some of the most amazing creatures on Earth. They 5) 50% of the Earth's oxygen.

C They occupy 1/5 of the Earth's land surface. It rarely rains there. Reptiles, 6) birds and mammals live there. They are hot and there is a 7) of water and plants. However, temperatures 8) at night.

- b) **11.3.1** Which of the pictures 1-9 does each text refer to?



- 3 **11.1.1 11.1.3 11.1.10 11.3.1 11.4.8** Which of the things in the pictures exist/don't exist in your country? Name some. Write a few sentences. Find them on a map. Tell the class.

I live in ... In my country there are rivers. The longest one is the ... River. There are also forests. Some are in the ... ; others are in ... There aren't any ..., though.

OVER TO YOU! **11.3.3 11.3.7 11.5.2**

Why is it important to take care of the environment? In three minutes write a few sentences. Tell the class.

2a Golden Eagles

Vocabulary



- 1 **11.3.7 11.5.2** Look at the picture.

Match the descriptions (A-F) to the correct body part (1-6).

🔊 Listen and check. Then describe it to the class.

- A large and forward-facing - daytime vision is eight times sharper than humans
- B hooked and yellow with a black tip - only used for eating and never for killing prey
- C four on each foot; sharp and very strong; the largest birds can use them to exert 15 times more pressure than a human hand
- D dark brown in the main with golden feathers on the head and neck, white markings on the underside
- E very large - a span of up to 2.2 metres in total
- F in fully-grown adult birds, it is 25-36 cm long

Listening & Reading

- 2 **11.2.8 11.4.3** Read the title of the text. What do you know about golden eagles? Are they an endangered species?

🔊 Listen and read to find out.

Did you know?

Hunting with golden eagles is an ancient art. Petroglyphs from the Bronze Age depicting hunters with eagles have been found in Central Asia.

Check these words

bird of prey, breed, subspecies, nest, prey, carnivore, prey on, rodent, retina, breeding season, incubation period



The Golden Eagles of Kazakhstan

The golden eagle has been a symbol of freedom, power and courage for thousands of years. It has been part of the culture of Kazakhstan for centuries, which is why it was chosen to be the national animal and appear on the country's flag. Let's take a closer look at these impressive birds of prey.

Habitat and distribution

Golden eagles are fairly widespread in Kazakhstan, inhabiting open country such as mountains, steppes and desert. There are four subspecies of golden eagle in the country, and each one generally breeds in a different area, although their territories sometimes overlap. The *chrysaetos* subspecies most commonly nests in the west, the *kamtschatica* in the north, the *homeroyi* in the Kyzylkum Desert and the *alaphanasi* in the Tien Shan Mountains.

Appearance & Behaviour

The name of these beautiful birds might seem misleading at first, because their plumage is mainly dark brown. However, their name comes from the golden feathers on their heads and necks. Like other raptors, they have sharp talons to snatch up their prey and hooked beaks to help them consume it. As one of the largest birds of prey, full-grown adults can weigh between 3 and 6.6 kg, and their wingspan can be over two metres! They soar high on air currents conserving energy by reducing the need to beat their enormous wings. They are still capable of achieving great speeds though – they can dive at up to 240 km per hour! Golden eagles often engage in aerial play, dropping a stick mid-air and diving to catch it before it reaches the ground.

Diet

Golden eagles are carnivores and prey on rodents, hares, rabbits, and even foxes. They usually capture live prey, but they also feed on carrion. What makes them expert hunters is their amazing eyesight – they can detect small animals at distances of 1.5 km! Their large eyes function far better than human eyes in daylight because, while our retinas contains 200,000 cones – the cells that help us differentiate between colours – per square millimetre, golden eagles have about a million!

Nesting

Golden eagles often mate for life and build their nest together, returning to it for multiple breeding seasons. In some cases, nests have been used continuously for decades. Golden eagles begin reproducing at 4-5 years old and can live for up to 30 years in the wild. An eagle's nest is called an eyrie, and it can be 1.5 metres across, or even larger. The female lays 1-3 eggs in the nest, and the incubation period is about 45 days. It takes another 60-70 days for the chicks to fledge and about 100 days for them to become independent and leave their parents.

Conservation

Sadly, golden eagles are in danger in Kazakhstan, and have been for the past 30 years, due to the illegal hunting of adult eagles and accidental deaths on electrical power lines. Conservation groups have been working to change the situation, and the Sunkar Reserve is currently breeding golden eagles and releasing them into the wild each year to increase the population. Thanks to this initiative, the future of Kazakhstan's beloved eagle looks bright once again.

- 3 **11.4.2** **11.4.5** Read the text again. For questions (1-5) choose the correct answer (A, B, C or D).

- The four subspecies of golden eagles in Kazakhstan
 - all inhabit the same area.
 - are found in a variety of habitats.
 - never meet each other.
 - migrate in order to breed.
- What helps golden eagles catch their prey is
 - their powerful claws.
 - their wingspan.
 - their sharp beaks.
 - their light weight.
- Golden eagles have extraordinary eyesight as
 - they can see a huge range of colours.
 - their eyes are bigger than other birds of prey.
 - their eyes are similar to human eyes.
 - they have a million cones in each eye.
- A male golden eagle usually
 - builds his nest alone.
 - lives in the same nest he was born in.
 - needs 100 days to teach his chicks to fly.
 - stays with his mate until one of them dies.
- The Sunkar Reserve helps golden eagles by
 - catching them and keeping them safe.
 - hatching baby birds and setting them free.
 - monitoring golden eagles in the wild.
 - increasing the population in captivity.

- 4 **11.5.2** Complete the summary. Use: eyesight, carrion, subspecies, prey, breeding, raptor, eyries, population, carnivores, incubation, territory, talons.

There are four 1) of golden eagles in Kazakhstan, and each one breeds in a different 2) They have the hooked beaks and sharp 3) that are common to all 4) species. Golden eagles have good 5), which helps them to spot their 6) at distances of up to 1.5 km. They are 7), but they also consume 8) Female golden eagles lay eggs in their nests (also known as 9)) and the 10) period is usually about 45 days. Golden eagles are in danger in Kazakhstan, but a 11) programme is helping to address the situation and increase their 12) in the wild.

Grammar

Present/Past perfect

see pp.
GR3-GR5

- 5 **11.6.7** Complete the sentences using the correct tense. Give reasons.
- They (not/release) the young eagles into the wild yet.
 - The female eagle was tired. She (hunt) for five hours.
 - James (take) pictures of many species of eagle by the end of his trip.
 - (the eagles/build) their nest for the last two weeks?

The passive

see
p. GR5

- 6 **11.6.7** **11.6.9** Find all the passive verb forms in the text in Ex. 2. How do we form the passive? When do we use it? Then, rewrite sentences 1-5 in the passive.
- They have been monitoring the eagles' activity using special equipment for months.
 - Volunteers have rescued several injured eagles.
 - They say the reserve hasn't released any birds into the wild yet.
 - The eagle had caught its prey by the time we started recording.
 - Experts didn't allow anyone to film the eagle chicks during the first days of their lives.

- 7 **11.1.5** **11.1.3** **11.1.7** **11.1.9** **11.2.3** **11.2.5** **11.3.1**
11.3.4 **11.3.5** **11.3.6** **THINK!**  Why do you think we should protect endangered species like golden eagles around the world? How could you help? Write a few sentences. Tell the class.

Writing & Speaking

- 8 **11.1.2** **11.1.3** **11.1.4** **11.1.5** **11.1.6** **11.4.6** **11.5.1** **11.5.4**
ICT Collect information about other species of eagle in Kazakhstan. Prepare a poster about them. Include a short description of each and pictures. Present it to the class. Use your classmates' feedback to improve your main area(s) of weakness, if any.

2b Bats

Vocabulary

- 1 **11.5.2** Look at the picture. Use the words in the list to label the body parts (1-10).

- nose • eye • tail • foot
- finger • wrist • thumb
- ear • knee • elbow

🔊 Listen and check.

Listening & Reading

- 2 **11.1.2 11.1.3 11.1.7 11.2.3 11.2.5 11.3.1 11.3.4 11.3.9 11.3.6 11.4.2**

🗣️ Which of these sentences do you think are true about bats? Discuss in pairs. Tick (✓) the correct answers. Then read the text to check if your answers were correct.

- 1 Bats are not birds.
- 2 They don't live in extreme cold areas.
- 3 Many species of bats are blind.
- 4 The majority of bats are herbivores.
- 5 They help transfer pollen from plant to plant.
- 6 It's a myth that bats sleep upside-down.



Researcher Profiles | Projects | Contact

Ann Froschauer

Ann Froschauer is a **chiropterologist**. In other words, she studies bats. Ann told us that she had chosen this unusual career because bats are "the coolest mammals on Earth." She says there are more than 1,300 species of bats worldwide. **1** She also told us that they could live almost everywhere on Earth, except the most extreme desert and polar regions. "One really cool thing about bats is that they are the only mammals that can fly," she added. "The bones of their wings are almost like a human hand, with four fingers and a thumb. This means their wings are really flexible and they can move them a lot of different ways, making them really good at flying."

There are two types of bats: megabats and microbats. Megabats are often called flying foxes and can weigh over a kilogram, with a wingspan of 1.7 metres! Microbats come in all shapes and sizes, with the smallest weighing just 2.6 grams with a wingspan of 15 cm!

Bats only come out in the evening and at night, and it's a common belief that they are blind. **2** "Bats actually have pretty good eyesight," she told us, "but, like humans, that eyesight isn't very useful when it's dark outside and bats are active." She explained that instead of using their eyes, many bats use echolocation – making really high-pitched sounds that bounce off objects. "By listening to the sounds that bounce back, bats can determine where things are, how big they are, and if they are moving."

It seems that bats are very selective about what they eat. Nearly 75% of bats species will only consume insects. **3** However, there are a few bats that have a different diet. We're sure you've all heard of the vampire bats in Central and South America that drink blood! **4** "Bats are hard at work all around the world each night – eating tons of insects, pollinating flowers and spreading seeds that grow new plants and trees," Ann told us. "Believe it or not, many of the foods we like to eat depend on bats for pollination or pest control."

Finally, we asked Ann about bats' famous habit of sleeping upside-down. "Hanging upside down has a few benefits for bats," she replied. "Bats have special tendons in their feet that let them hang while being totally relaxed, so they aren't using much energy. **5**" Ann also told us that bats don't get dizzy when they're hanging upside-down because they're so small that gravity doesn't make as much blood rush to their heads.

Bats certainly are fascinating, but do you agree that they're "the coolest mammals on Earth"? Share your opinion on social media and use the hashtag #naturesworldonline.



Bats vs Birds

Bats are mammals and not birds. Bats ...

- 1 are nocturnal animals.
- 2 have fur not feathers.
- 3 have sharp teeth not beaks.
- 4 give birth to live young.

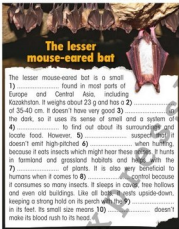
Check these words

high-pitched, bounce off, determine, pollinate, pest control, tendon, gravity

3 **11.4.7** Read the text again and fill in the gaps (1-5) with the sentences (A-F). One sentence is extra. Listen and check.

- A Most of the rest eat just fruit and nothing else.
 B It allows them to take off quickly also.
 C But did you know that bats can help get your dinner on the table?
 D That's 20% of all mammal species.
 E This means bats have very sensitive hearing.
 F We asked Ann if this was true.

4 **11.5.2** Complete the text. Use: wingspan, seeds, chiropterologists, sounds, pollination, eyesight, echolocation, mammal, gravity, pest, tendons.



Grammar

Impersonal sentences

see p. GR10

5 a) **11.6.6** Find examples of impersonal sentences in the text.

b) **11.6.6** Choose the correct item.

- 1 It's/There's cold and dark in the cave.
- 2 You/They help endangered species in this zoo.
- 3 It/There appears that they're sleeping now.
- 4 It's/There's a colony of bats inside.
- 5 The research programme is now open. If interested, one/they can apply online.

Reported speech

see pp. GR7-GR10

6 **11.6.9** Look at the underlined sentences in the text and in Ex. 2. Which one is: a reported statement? a reported question? a reported statement with a special introductory verb? When don't tenses change in reported speech? Check in the Grammar Reference section.

7 **11.6.9** Change the following from direct into reported speech.

- 1 "We are studying a rare mammal species," the lecturer said to the students.
- 2 "I didn't finish my project last night," she said to me.
- 3 "Ben studies rare bats," Sue said.
- 4 "I've just discovered the cave where the bats sleep," Josie said to me.

8 **11.6.9** Use the introductory verbs in brackets to report what was said.

- 1 "Where did you see the fox?" Jon said to Ann. (ask)
- 2 "Sorry I didn't help you with your essay on echolocation," Ben said. (apologise)
- 3 "Hand in your biology assignment tomorrow," Professor Green said. (remind)
- 4 "Don't make noise in the cave," the teacher said to the students. (order)
- 5 "Let's watch this documentary," Sue said. (suggest)

Speaking & Writing

9 **11.2.9** **11.3.1** **11.3.4** **11.3.5** **11.3.6** **THINK!** Imagine you are an interviewer. What else would you ask Ann Froschauer about bats? Write down three questions. Compare with your partners'. Can any of your classmates answer your questions?

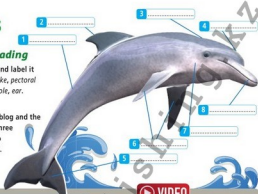
10 **11.1.2** **11.1.4** **11.1.5** **11.1.6** **11.1.10** **11.4.8** **11.5.3** **11.5.4** **11.6.7** **11.6.9** **ICT** Use the Internet and other resources to find out more information about a species of bat in your country. Include: name, lifespan, description, habitat, feeding/sleeping habits, behaviour, conservation status. Prepare and give a presentation to the class.

2c Dolphins

Vocabulary & Reading

- 1 **11.5.2** Look at the picture and label it with: dorsal fin, rostrum, fluke, pectoral fins, melon, peduncle, blowhole, ear.
- 🔊 Listen and check.

- 2 **11.2.2** Read the title of the blog and the introduction. Write down three questions you would like to ask Martina about dolphins.
- 🔊 Listen to and read the text. Can you answer your questions?



Martina's Marine Biology Blog



As a marine biologist and a keen scuba diver, I encounter lots of fascinating creatures every day. I've been studying marine life for six years so it's hard to pick a favourite, but if I had to, I'd probably choose the animal that first got me interested in the ocean when I was just nine years old: the friendly and playful dolphin.

Dolphins live in water, but they're not **classified** as fish – they are cetaceans: they give birth to live young and feed them milk, and are therefore mammals. Moreover, they don't have gills, so they need to breathe air. A dolphin often comes to the surface to breathe through its blowhole – an opening near the top of its head that works rather like our nostrils. They can't breathe through their mouths like humans can. They have got three fins: the dorsal fin on top and the pectoral fins on either side of the chest. The dorsal fin keeps the dolphin stable in the water, and the pectoral fins **steer** it in the right direction. The up-and-down motion of the tail **propels** them through the water.

Dolphins are known to be social animals. They are generally part of groups called pods. Some pods are made up of only a few dolphins, but others are very large, containing over a hundred! Dolphins live in groups for **protection** and often work together to catch food. In addition, if a **member** of the group is injured, they support it by **feeding** it and helping it to the surface to breathe. They also enjoy playing together. On trips out to sea, I often catch glimpses of them **chasing** each other, play-fighting and jumping

nearly 5 metres into the air!

Dolphin communication has fascinated researchers like me for decades. Scientists had been investigating their 'language' of whistles and clicks since the 1950s when they discovered, in 2013, that every dolphin has a 'name' – a whistle that refers only to them. We had already realised that each dolphin sounds slightly different, so they can tell each other apart, but it wasn't until a few years ago that a study showed dolphins have accents, just like people, depending on where they're from! Dolphins use body language to communicate too, and even show **affection** by bumping into each other or swimming along with their fin touching another dolphin – almost like a hug! They also use echolocation – the same **technique** bats use out of the water – which involves bouncing sounds off objects to **determine** their location.

Dolphins like company, and they can talk in their own unique way. They're intelligent, and their behaviour can seem very human at times – they even look like they're smiling! Perhaps that's why people are attracted to these charming sea creatures. Swimming with dolphins is an experience many people would love to have, however, as a scientist and dolphin-lover, I am against forcing dolphins to perform in **captivity**. It is far more rewarding to see these creatures swimming freely in their natural habitat. They are, after all, wild animals.

Check these words

classified, gills, steer, motion, play-fight, in captivity, rewarding

- 3 **11.4.3** Read the text again, and decide if the sentences (1-5) are T (true), F (false) or DS (doesn't say).

- 1 Cetaceans are a type of mammal.
- 2 Dolphins use their blowholes to breathe underwater.

- 3 Small pods are more common than large ones.
- 4 Scientists found out that dolphins used 'names' in 2013.
- 5 Martina has participated in studies about dolphin communication.

4 **11.4.5** Match the highlighted words in the text to their meanings: *find out, method, an enclosed space, put into the category of, providing food for, safety, liking, guide, pushes.*

5 a) **11.1.6 11.1.7 11.1.10 11.3.1 11.3.4 11.3.5 11.3.6**

THINK! Compare and contrast fish and marine mammals. Tell the class.

b) **11.1.6 11.3.6 11.5.1 11.5.4** **ICT** Do some internet research to find more information about their similarities/differences. Write a short text. Tell the class.

Grammar

Present/Past tenses (Revision)

6 **11.6.9** Put the verbs in brackets into the correct present or past tense. Give reasons.

see pp.
GR1-GR5

INBOX

Subject: Dolphins vs Porpoises Project

Hi Uncle Joe,

How are you? I **1** (**need**) your help! Our teacher **2** (**just/give**) us an assignment for Monday about the differences between dolphins and porpoises. I **3** (**never/hear**) about it before. I **4** (**read**) articles on the Internet for hours, but there is so much information! Mum told me that you **5** (**work**) as a marine biologist for years before you became the director of the aquarium, and you **6** (**do**) some research on this subject. Do you mind answering a few **7** (**you/know**) if porpoises communicate with sound like dolphins do? Also, while I **8** (**notice**) a video yesterday, I **9** (**notice**) that the porpoises don't have a long rostrum. Is this true of all porpoise species? The narrator might have mentioned it, but I **10** (**research**) about cetaceans all day and I felt so tired by 11 pm that I couldn't pay attention! Sorry for all the questions!

Love,
Tim



Listening

7 a) **11.2.3 11.2.5 11.2.8** Listen to an interview with a dolphin keeper. Mark the sentences (1-5) as T (true) or F (false).

- Ellen decided to become a dolphin keeper after visiting Open Ocean Sanctuary.
- Open Ocean Sanctuary is located close to the coast.
- Open Ocean doesn't release healthy dolphins because it costs too much money.
- Ellen wants Open Ocean Sanctuary to stay open and help dolphins in need.
- Ellen has opened her own aquarium.

b) **11.1.1 11.1.7 11.2.5 11.3.1** Listen again and make notes about dolphins under the headings: **threats - solutions.**

8 **11.1.2 11.1.3 11.3.1 11.3.4 11.3.5 11.3.6** In pairs act out exchanges giving/asking for opinions on ways to help save dolphins. Use your notes from Ex. 7b and the phrases in the Language box.

Giving/Asking for opinions

- In my opinion, ...
- To my mind/To me, ...
- The way I see it, ...
- As for ...
- What do you think (about ...)?
- Do you/Would you agree?

Agreeing

- I (totally) agree (with you).
- That's a good point./Yes, you've got a point there.
- I see what you mean.

Disagreeing

- I (totally) disagree (with you).
- I see your point/I see what you mean/you've got a point, but ...

Writing & Speaking

9 **11.1.2 11.1.3 11.1.4 11.1.5 11.1.6 11.4.8 11.5.1 11.5.4 11.6.7 11.6.9** **ICT** Collect information about the orca. Include: *physical description, natural habitat, behaviour/communication, diet, predators and threats/conservation status.* Present it to the class. Answer questions. Evaluate other speakers' performance. Give/Ask for feedback.

2d Writing

An opinion essay Rubric Analysis

- 1 **11.5.5** **11.5.7** Read the rubric and answer the questions.

You've had a class discussion on the following statement. **Zoos are beneficial for animals that are in danger of extinction.** Write an essay for your teacher expressing your opinion (150-200 words).

- 1 **11.5.7** Which of the following should your essay contain?
A your opinion
B viewpoints to support your opinion
C a description
D only arguments against the topic
- 2 **11.5.4** What style should you use: formal or informal? What characterises this style?

Model Analysis

- 2 **11.5.1** **11.5.7** Read the model. Which paragraph(s) (A-E) contain(s): the writer's first viewpoint and example/reason? the writer's opinion? the writer's second viewpoint and example/reason? an opposing viewpoint and example/reason?

- 3 **11.5.5** **11.5.7** Replace the topic sentences (1-4) in the main body paragraphs with the appropriate alternatives below.

- A** In addition, abandoned and mistreated animals can benefit from care at a zoo.
- B** All things considered, zoos can benefit animals that are threatened or in need of care.
- C** Firstly, zoos can save endangered species from extinction.
- D** However, some say the quality of life in zoos is not satisfactory.

- 4 **11.6.15** Look at the linkers in bold in the model and list them under the headings below. Then, suggest alternatives.

- addition • contrast • examples/reasons
- conclusion • list points

A There are thousands of zoos around the world. They are fun and educational places for people to visit, but are they really beneficial for animals that are in danger of extinction? In my opinion, they benefit these creatures for several reasons.

A 1) To start with, what zoos do is save endangered species that would otherwise become extinct. For example, in 1900, the Asian Père David's deer became extinct in the wild. However, the species survived because there were deer living in zoos in Europe. In 1985, some were released back into the wild and by 2005, the population was about 2,000 animals.

A 2) Furthermore, zoos can rescue and save abandoned animals, or animals that are being treated badly. For instance, in 2004, it was Detroit Zoo in the USA that rescued a polar bear from a travelling circus, where she was hot and hungry most of the time. The bear, called Barle, went on to have a baby at the zoo and lead a healthy and happy life.

A 3) On the other hand, people argue that animals in zoos don't have a good quality of life. This is because, even when zookeepers try their hardest, the food and living conditions in a zoo will never be the same as in the wild.

A 4) To sum up, I believe zoos are beneficial for endangered, mistreated or abandoned animals. However, wherever appropriate they should be released into the wild where they belong.

- 5 **11.6.15** Choose the correct linker.

- 1 Zoos are educational. **In addition/For example**, they are fun places to visit.
- 2 **In particular/All things considered**, zoos can help endangered animal species to survive.
- 3 The Père David's deer was kept captive in zoos and **because/as a result**, the species survived.
- 4 Zookeepers try to provide animals with the best diet and living conditions. **However/Besides** that, they care about the animals they look after.

- 6 **11.3.1** **11.6.15** Read the topic sentences and write suitable supporting sentences using the prompts. Use appropriate linkers.

- It is expensive to keep wild animals in captivity.
- People argue that all animals should be free.

they/have to/eat/special diet
they/say/animals/not belong in cages

Expressing opinion

- 7 **11.1.2** **11.1.3** **11.1.4** **11.2.3** **11.2.8** **11.3.1** **11.3.4** **11.3.5**
11.3.6 Use the phrases to express your opinion on the following:

All the animals in zoos should be set free.

Tickets to enter the zoo are far too expensive.

Expressing opinion

- | | |
|--------------------------|--------------------------|
| • I don't agree that ... | • In my opinion ... |
| • I agree that ... | • I personally think ... |

Grammar

Cleft sentences

see
p. GR10

We use **cleft sentences** to emphasise what we are saying.

What + subject + verb + is/was

What animals really need is space to be free.

(Animals really need space to be free.)

It is/was (not) + noun/noun phrase/pronoun + relative clause

It wasn't a natural disaster that destroyed the animals' natural habitat, but people. (A natural disaster didn't destroy the animals' natural habitat, people did.)

- 8 **11.6.4** Read the theory box and find examples in the model in Ex. 2. Then, rewrite the sentences (1-4) as cleft sentences.

- David feels passionate about freeing animals in captivity.
What
- Ben brought the injured eagle to the zoo.
It
- The lions attracted the most visitors last year.
It
- Saving endangered animals is what James loves most about being a zookeeper.
What

Your turn

- 9 a) **11.3.5** Read the rubric and match the viewpoints (1-4) to the reasons/examples (a-d) they support.

Animals are always better off in the wild. Write an essay for your teacher giving your opinion on the topic (150-200 words).

Viewpoints

- Large mammals need to run free in their natural habitat.
- Animals in captivity can be dangerous.
- Zoos and sanctuaries can provide animals with medical treatment.
- Wild animals lose their skills and identity in captivity.

Reasons/Examples

- Predators like lions forget how to hunt because they are given fresh meat every day.
 - Sick or injured animals won't survive in the wild.
 - They might attack their keepers or other animals in their enclosure if they are scared or angry.
 - In the wild, animals such as cheetahs have limitless space to run.
- b) **11.5.2** **11.5.5** Use appropriate phrases from the Useful Language box to join the viewpoints to their reasons/examples.

Useful language

List viewpoints

• To start with, ... • Firstly, ... • Moreover/

Furthermore ... • In addition, ...

Introduce examples/reasons

• For example/such as/For instance ... • The reason is ... • This is because ... • In particular, • because/ as/since

Introduce opposite viewpoint

• On the other hand, some people argue/say that ...

Conclude

• All in all, • All things considered, • To sum up,

Express opinion

• In my opinion, ... • I feel/believe that ...

• Personally, ... • As far as I am concerned, ...

- 10 **11.1.4** **11.1.5** **11.1.6** **11.1.7** **11.1.10** **11.5.1** **11.5.4** **11.5.5**
11.5.7 **11.6.9** Use the plan and your answers in Ex. 10 to write your essay. Read it to the class.

Plan

Para 1: state the topic & your opinion

Paras 2&3: first/second viewpoint (in favour) & examples/reasons

Para 4: opposing viewpoint & reasons/examples

Para 5: restate opinion

2e Culture Corner



Olympic National Park

Olympic Mountains,
Olympic Peninsula



Roosevelt Elk in
Hoh Rainforest



Rialto Beach

1

Olympic National Park is in the state of Washington, USA. It is in the far north-west of the country, on the border with Canada, and has an area of over 4,000 km². This includes a strip of coastline 112 km long on the edge of the Pacific Ocean, which is separate from the rest of the park. 95% of the park is classed as wilderness and the scenery is spectacular, from ancient forests with trees up to 1,000 years old to mountains up to 57 million years old. Many of the jagged peaks are so steep and dangerous that there are no trails to the top. The tallest mountain is Mount Olympus at 2,432 metres which has active glaciers! From the summit, the Pacific Ocean is visible 53 km away!

2

Due to the variety of ecosystems, from snowy mountains to temperate rainforest to misty coastline, there is huge biodiversity in the park. There are as many types of vascular plants – ones that transport water inside their stems – in the park as exist in the entire British Isles. There are also hundreds of species of non-vascular plants like moss. There is an abundance of wildlife; deep-sea mammals and mountain goats are common sights. Visitors may glimpse the occasional black bear, or see whales surfacing off the coast. Endemic species include the Olympic yellow-pine chipmunk (mammal), the Olympic mudminnow (fish) and the Olympic torrent salamander (amphibian).

3

Apart from hiking the many trails, visitors can enjoy kayaking or canoeing on the rivers and lakes, and fishing is permitted in certain bodies of water, but you must follow the park regulations. In the winter months, head to Hurricane Ridge for skiing, snowboarding and snowshoeing experiences. On the coast, rock pooling is a popular activity. You can see some fascinating flora and fauna in the pools, but you must check the tides of high and low tides in order to plan your expedition. Visitors want to get cut off from the shore by rising water!

4

On account of the absence of electric lights in the park, the stars are easily visible in the night sky. During summer, you can join a specially-trained guide on Hurricane Ridge who will point out the constellations, planets and galaxies. This educational experience, and the use of the park's telescopes, is free of charge. In addition to looking at the stars, why not camp out under them? There are 16 campgrounds in Olympic National Park and the experience of sleeping so close to nature is unique. However, because so much of the park is wilderness, the ecosystems are fragile. Campers must respect the local environment and take all their litter with them. As the saying goes, 'Take only photos, leave only footprints.'

Check these words

wilderness, jagged, temperate, biodiversity, endemic, fragile

1 11.1.10 11.A.2 Look at the pictures. Where is Olympic National Park? What is special about its natural diversity? Read the text to find out.

2 11.A.1 Match the headings (A-E) to the paragraphs (1-4). One heading is extra.

🔊 Listen and check.

- | | |
|---------------------|--------------|
| A Flora and Fauna | D Amateur |
| B After Sunset | E Astronomy |
| C An Unspoiled Land | F Recreation |

3 a) 11.5.2 Fill in: plant, glacier, sight, species, experience, ecosystem, wildlife, rainforest.

- 1 temperate
- 2 abundance of
- 3 fragile
- 4 active
- 5 endemic
- 6 common
- 7 vascular
- 8 educational

b) 11.3.6 11.5.2 Use the completed phrases to talk about Olympic National Park.

4 11.1.4 11.1.5 11.1.6 11.1.7 11.1.10 11.3.1 11.3.4 11.3.6 11.4.8 11.5.1 11.5.4 11.6.7 11.6.9 ICT Find information about a national park in your country. Write about: location, geography, climate, flora and fauna, threats and any interesting facts. Present it to the class.

Did you know?

- In 1976, Olympic National Park was designated an International Biosphere Reserve as part of UNESCO'S Man and the Biosphere programme.
- In 1982, Olympic National Park was designated a UNESCO World Heritage Site.



Curricular: Biology

2f

- 1 **11.4.3** Read the title of the text. What is the social organisation within a beehive?

🔊 Listen and read to find out.

- 2 **11.4.2** **11.4.5** Read again and complete the sentences.

- The queen bee lays each of her eggs in
- A larva that might grow into a queen eats only
- Fertilised bee eggs will grow into
- Drones are made to leave the hive
- Honey is made from
- The lifespan of a worker bee depends on

- 3 **11.1.6** **11.3.1** **11.3.6** Look at the picture and use the information in the text to describe the life cycle of a honey bee.

- 4 **11.3.3** **11.3.4** **11.3.6** **11.3.7** Use the numbers in the list below to ask and answer questions about honey bees.

- 20,000 • 80,000 • 2 cm
- 2 years • 1,500 • 300
- 2 million • 88,000 km
- 230 times • 6-7 weeks

A: How many species of bees are there on planet Earth?

B: Over 20,000.

- 5 **11.1.2** **11.1.3** **11.1.4** **11.1.5** **11.1.6**
11.1.10 **11.3.1** **11.3.4** **11.3.6** **11.4.8**
11.5.3 **11.5.4** **11.6.7** **11.6.9** ICT

Collect more information about bees. Prepare and give a presentation. Evaluate other speakers' presentations.

Check these words

larva, pollen, royal jelly, pupa, hive, fertilise, lifespan



Life Cycle of a Honey bee



Bees and their World

There are over 20,000 species of bees on the planet Earth. Although only seven of these are honey bees, they are probably the most well-known species because they provide us with the sweet, sticky treat they are named after. Honey bees exist on every continent except Antarctica and they are one of the most-studied creatures on Earth.

Life cycle

The life cycle of a honey bee has four main stages. A bee starts its life as an egg just 1.6 mm in length laid by the queen bee in a hexagonal cell of wax. Three days later, a larva hatches from the egg. It is fed 1,300 times a day on 'bee bread', a special food made from pollen and honey. The exceptions are the potential queen bees, who eat royal jelly, a substance produced by worker bees. After six days of feeding the larva, worker bees seal its cell from the outside and the larva develops into a pupa. Three weeks after the queen first laid the egg, the fully grown bee chews its way out of the cell and immediately starts work. How long it will live depends on the type of bee it is. In one hive, there can be up to 80,000 bees and they are divided into three types.

Colony organisation

Mother of the Hive

Each hive has just one queen bee. She is about twice the size of the other bees, around 2 cm long, and her sole job is laying eggs. Queen bees live for at least 2 years, and sometimes up to five, and they can lay 1,500 eggs a day! The queen fertilises some of the eggs, and these will become female worker bees. The eggs she doesn't fertilise will become male bees, called drones.

A deadly job

There are about 300 drones in a large hive, and they have an easy life because the worker bees find food for them and their only job is to mate with the queen. Unfortunately, after they perform this task, they die, so most drones have a lifespan of only a few weeks. In addition, because they don't collect or produce food, if there are any drones left in the hive as winter closes in, the worker bees force them to leave to conserve food supplies!

The busiest bees

Although worker bees are all female, they can't reproduce. Their tasks include caring for the queen bee, feeding the larvae and, of course, collecting nectar from flowers in order to make honey. To make 500 grams of honey, the worker bees from a hive must visit about 2 million flowers and travel 88,000 km! They can carry close to their own weight in pollen or nectar, but have to beat their wings 230 times a second to fly with this heavy load! In spring and summer, when worker bees are busiest, they live for 6-7 weeks, but in the autumn and winter when they have less to do, they can live for up to six months.

2 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- His findings are being questioned because there are claims that he up some of the test results. (**invented**)
- New conservation programmes are up in many countries these days. (**appearing suddenly**)
- When Aidana looked at all the data, she realised that something didn't up. (**make sense**)
- The windows of the bat enclosure up when it's cold outside. (**become covered in a layer of moisture**)
- I didn't get a good photo of the golden eagle because my camera was up. (**not working as it should**)
- As we were chatting, the subject of Serik's thesis up. (**got mentioned**)

- 2 **11.6.13** Choose the correct preposition.

- Golden eagles only feed **with/on** meat.
- I'm not in favour of keeping animals **at/in** captivity.
- Bats find out about their surroundings by bouncing sounds **from/off** objects and listening for them to come back.
- Dolphins usually prey **at/on** fish and squid.

Collocations

- 3 **11.5.2** Fill in: plants, ecosystem, species, rainforest, animals, pest, fin, conservation.

- | | | |
|-------------------|-------------------|---------|
| 1 endemic | 5 | group |
| 2 fragile | 6 nocturnal | |
| 3 temperate | 7 vascular | |
| 4 dorsal | 8 | control |

Word formation

- 4 **11.8.4** Complete the sentences with a word formed from the word in capitals.

- The period for an emperor penguin's egg is about two months. (**INCUBATE**)
- The blue-ringed octopus is small, but it has enough venom to kill 25 adult humans! (**DEAD**)
- Much of Australia is an uninhabited (**WILD**)
- It's a common that bats are blind. (**BELIEVE**)
- There are no roads or buildings in the natural park, so the scenery is (**SPOIL**)

Words often confused

- 5 **11.5.2** Choose the correct word.

- A butterfly's life **span/cycle** has four stages: egg, caterpillar, pupa and adult.
- The breeding **period/season** for foxes in the UK is in early spring.
- It's fascinating to study colony **organisation/arrangement** in beehives.
- Bats are not **regarded/classified** as birds; they are mammals.



Kazakhstan in Action!

Read and fill in the correct word.

- The saiga antelope, famous for 1) uniquely shaped horns and nose, is native to the Ustyurt Plateau. The population of this animal has fallen 2) 95% in the past two decades 3) a result of poaching, but non-profit organisations are working hard 4) protect and conserve 5) endangered species.
- The snow leopard is an endangered animal 6) is native to Kazakhstan, and has 7) referred to as a symbol of Kazakhstan 8) former president, Nursultan Nazarbayev. In 2018, the first

national snow leopard festival 9) held in Almaty with the intention of raising 10) of their status.

- In 2017, ACBK and Birdlife International managed to reintroduce the Kulan, a breed of wild donkey, 11) Kazakhstan. This species 12) previously been 13) the Red List of endangered species. They are currently kept in a nature reserve, but numbers are on 14) rise and it is hoped that they will be able to live out in the wild in the future.



THE SHARK WHISPERER

Stuart Cove takes Adam Higginbotham under the waves to meet his killer cast.

Stuart Cove kneels on the sandy seabed. One hand rests on a plastic crate filled with chopped fish. When he opens the crate to spear the first piece, perhaps 20 reef sharks appear in the water around us. Twenty minutes later all the fish have gone and the sharks drift away. Over the past 25 years, Stuart has captured and manipulated sharks into various film scenes. Tiger sharks are big and aggressive and frequently responsible for attacking humans, but when captured or placed under stress they struggle and then become calm as if they are half asleep. The sharks can then be released and manipulated for the shot and this is when Stuart steps in.

Cove grew up in the Bahamas. At 19, he was an experienced diver, but he had no idea when he started working on the James Bond film, *For Your Eyes Only*, that he would have to work with tiger sharks. "One day they said to us, 'OK, we are going to release the shark. If the shark comes to you, jump on its back.'" "Then they said, 'Stuart, you're one of the guys.'" "And I thought, 'Are you out of your mind?'" "But then they said, 'You'll get \$150. And, well ... as a teenager in 1979, that's a pile of money.'" Today, Cove charges around \$10,000 for two to three days shooting with a tiger shark.

"Honestly I was scared to death," Cove says. During the first take, the shark escaped – much to Cove's relief. Pretending to look for the lost animal, he was amazed to find it struggling at the edge of the set, trapped in a net. So I grabbed it and it tried to bite me, and then it relaxed. I swung it back and suddenly I was the hero who saved the whole day's shooting." After that, Cove became one of the great shark handlers. He never told anyone he'd found the shark in the net!

Out at the dive site, I asked him what I should do if I'm actually attacked by one of the sharks he's feeding. "Try taking your arms in," he said, "and avoid moving." But in fact, despite their reputation, many species of shark are very fussy eaters. Cove has seen sharks like bait such as chicken or lobster into their mouths, taste it and spit it out. Same goes for divers: when the sharks accidentally bite the feeders' hands, the animals immediately realise their mistake when they taste a wetsuit.

Despite this, Cove himself has been bitten three times by sharks. Once he was bitten on the hand. "It was the worst pain I've ever felt," he says. "The teeth go very deep." Still, he insists that each time he has been doing all the things for the camera you should do: waving his hands around in the water unprotected.

For some shoots Cove and his staff have even simulated shark attacks. They strap food between a chain-mail suit and their clothing and let sharks tear it off them. "That's dangerous because they can actually rip your wetsuit and flesh ... yeah, it's not smart. But you know," he says, "for fame and fortune, you don't mind doing anything."

Progress Check 2

Reading

- 1 **11.4.2** Read the text and for questions 1-5, choose the best answer A, B, C or D.
- Stuart Cove controls the behaviour of sharks
 - while they are feeding.
 - when they're in a particular state.
 - by making them angry.
 - by spending a lot of time with them.
 - Why did he agree to do his first shark scene?
 - He wanted the challenge.
 - He thought he would lose his job otherwise.
 - He was too proud to admit his fear.
 - He liked what he was offered for it.
 - What advice does Stuart give to Adam?
 - Wave your arms around to deter sharks.
 - Stay still if a shark attacks.
 - Feed sharks regularly to keep them calm.
 - Always wear a wetsuit for protection against bites.
 - 'this' (line 41) refers to
 - the divers' behaviour.
 - the divers' protective clothing.
 - the sharks' preferences.
 - the way people see sharks.
 - Stuart believes
 - his job is less dangerous than people think.
 - his experience protects him from injury.
 - safety is the most important consideration.
 - the danger involved in his job is worth it.

Listening

5x2=10 marks

- 2 **11.2.5** You will hear five short extracts in which people are talking about their ideas to get people interested in wildlife protection. Match the sentences A-F to the speakers 1-5. There is one extra sentence.
- We decided a local event would have more impact than an internet campaign.
 - My website wasn't as popular as I had hoped.
 - I was surprised to get such a positive reaction from the online community.
 - We held a contest to get people involved with our cause.
 - Our merchandise really helped people find out about our cause.
 - Visiting local schools helped us spread our message.

Speaker 1
Speaker 2
Speaker 3
Speaker 4
Speaker 5

5x2=10 marks

2 Progress Check

3 **11.5.2** Fill in: *steer, determine, spread, overlap, mate, fertilise, lay, designate, conserve, release.*

- Urban badgers have small territories that with others nearby.
- When the chicks are fully-grown, we'll them into the wild.
- The babies of koala bears are born 35 days after the male and female
- Dolphins use their tails to them in the right direction.
- In 1996, the government of Kazakhstan decided to Kokshetau as a national park.
- The queen bee doesn't all her eggs.
- Echolocation allows dolphins to where things are even if they can't see them.
- Eagles energy by rarely beating their wings.
- Ants seeds by carrying them away from the parent plant.
- Female emperor penguins only one egg each year.

10x2=20 marks

4 **11.6.7** **11.6.9** Rewrite the sentences in the passive.

- Dr Green hasn't released the findings yet.
- The mother hadn't fed her cubs for days when we discovered them.
- Someone had taken the golden eagle eggs before we arrived.

3x3=9 marks

5 **11.6.10** Rewrite the sentences in reported speech using the verbs in brackets.

- "I'm studying bats," she said to me. (tell)
- "When did you see the elk?" he said to Jo. (ask)
- "Don't disturb the nest," he said to Aizhan. (order)
- "Let's visit a zoo," Kairat said. (suggest)

4x3=12 marks

6 **11.6.8** Fill in the gaps with the correct present or past tense.

- (you/watch) the documentary about tigers yet?
- The dolphins (already/disappear) by the time we got to the beach.
- Dr Mavis (research) how dolphins communicate since 2012.
- The scientists (monitor) the pair of golden eagles for three years before their first chick hatched.
- Jane was upset because she (invest) a great deal of time and money in the failed project.

5x2=10 marks

7 **11.6.5** Rewrite the sentences as cleft sentences.

- We really need more data about steppe eagles. What
- Madina suggested monitoring the feeding habits of the chicks. It
- The noise from speedboats confuses whales. What

3x3=9 marks

8 **11.5.1** **11.5.4** **11.5.7** Read the rubric and write your essay.

You've had a class discussion on the following topic: **Parents should get their child a pet wherever possible.** Write an essay for your teacher expressing your opinion (150-200 words).

20 marks

Total: 100 marks

Check your Progress

- talk about our natural world _____
- analyse and present the specific features of various animals _____
- use the present/past perfect, the passive, reported speech, present/past tenses _____
- give/ask for opinions - agree/disagree _____
- write an opinion essay _____

GOOD ✓ VERY GOOD ✓✓ EXCELLENT ✓✓✓

Module 3

The Human Brain

Vocabulary: the human brain, brain technology, neurones, memory (techniques, brain exercises/food)

Grammar: prepositional phrases - clauses of concession, multi-word verbs, past modals, affixes (prefixes - suffixes), clauses of concession - conditional clauses

Everyday English: asking for/ expressing opinions (positively/ negatively)

Phrasal Verbs: verbs with out

Writing: an instructional text

Culture Corner: Sherlock Holmes - *The Method of Loci*

Curricular (Science): How memories are formed

Vocabulary

Parts of the brain - Human brain facts

- 1 **11.2.6** **11.4.1** **11.4.3** **11.5.2** Read the texts A and B. Use the words in bold to label the pictures (1-7).
 Listen and check.

- 2 **11.2.3** **11.3.2** In pairs, ask and answer questions about the parts of the human brain (1-7) and their functions.

Over to you!

- **11.1.2** **11.1.4** **11.3.7** **11.5.7** **11.6.4** **11.6.13** **11.6.14** Use a medical model of the human brain to talk about other parts of it. Present it to the class.

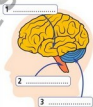
Did you know?

The brain feels no pain.

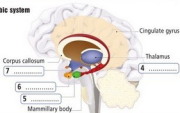


- A A human brain weighs about 1.4 kg. It is divided into two hemispheres. It has three main parts:

- the **cerebrum** - the largest part of the brain. It processes information from what we touch, see and hear. It's also the centre for speech, learning and emotion.
- the **cerebellum** - the part at the back of your brain. It controls movement and balance.
- the **brainstem** connects the brain and the spinal cord which, together, make up the central nervous system.



B The Limbic system



- The limbic system lies beneath the cerebrum. It includes:
 The **pituitary gland** which is at the base of the brain and secretes hormones into the blood.
 The **hypothalamus** which is above the pituitary gland and regulates conditions such as body temperature, blood pressure and appetite.
 The **hippocampus** which is a curved section of the brain involved in memory consolidation. There is one in each hemisphere of the brain.
 The **amygdala** which is next to the hippocampus is an almond-shaped part of the brain that is responsible for our emotions. There is one amygdala on each side of the brain.

3a Brain Technology



Vocabulary

- 1 **11.4.5** **11.5.2** Look at the picture and match the different areas in the human brain (1-3) to their descriptions (A-C).

- 1 motor areas
2 sensory areas
3 association areas

- A areas of the brain responsible for receiving information from our five senses
B areas of the brain that coordinate responses from different areas of the brain to help them work together
C areas of the brain responsible for movement

Listening & Reading

- 2 **11.2.1** **11.2.8** **11.4.3** Read the title, the introduction and the subheadings. What do you think each text is about? How do you think these brain technologies can be used to help the motor, sensory and association areas in the human brain?

🔊 Listen to find out.

Check these words

implant, prosthetic limb,
neural dust, speech recognition

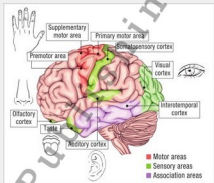
Study skills

Multiple matching

Read the texts, then read the questions and underline the key words. Read again and try to match parts of the texts to the information in the questions. Remember that some information will be paraphrased.

BRAIN GAIN

THE FUTURE OF BRAIN TECHNOLOGY



When we think of the future of **brain technology**, we may think of downloading information from a computer into our brain, or about the use of microchips and implants to **enhance** our brain, extend our memory and change our behaviour. But are these just misguided ideas from sci-fi films or will they become a part of our lives in the near future?

A BCI technology

Although brain-computer interface technology already exists, it is set to become even more widely used in the future. This amazing technology has so many applications and the potential to improve the lives of millions of people. One area where BCI technology is particularly useful is in that of people with paralysis or other similar conditions. For example, the famous scientist Stephen Hawking used a **computer interface** in order to **generate** speech. An **infrared switch** on his glasses responded to movement in his cheek in order to generate speech. In the future, with respect to BCI technology, we can expect even more sophisticated systems such as brain-controlled prosthetic limbs and thought-powered smartphones.

B 'Sand' in the brain

Our brain communicating digitally with the world around us may seem like science fiction, but soon it will become a reality. Scientists at Brown University in Rhode Island in the USA have been developing 'neural dust' sensors that would allow us to do just that. So far, they have managed to get one of these tiny devices to detect which neurones are **firing** and are now working on making it **stimulate** neurones in response to radio signals. The creators of this technology hope that in the future, this amazing implant will be capable of firing **nerve impulses** in motor areas of the brain and will allow paralysed people to walk again.

c Mini-me Brains

Imagine if we could grow a brain in a glass dish in the lab. Well, we don't need to imagine it anymore because scientists have managed to grow a tiny 3D brain using **stem cells**. This is an amazing breakthrough because it allows us to learn so much more about **brain disorders** and how the brain works without harming any people. For example, we can grow a mini-brain with a disorder such as schizophrenia or Alzheimer's. Scientists at Harvard in the USA have been experimenting with giving these brains a blood supply which gives them the potential to grow much bigger. These larger brains even have the potential to receive an input, allowing scientists to further investigate the sensory and association areas of the brain.

d Typing with your thoughts

Today's speech recognition technology is constantly improving in respect to its speed and functionality. However, it is not really appropriate for use in office settings or in public. The 'silent speech' project is currently working to **harness** the signals from your brain and turn them into words – allowing you to type using your thoughts. The experts working on the project predict that this amazing technology could allow us to type up to 100 words a minute – which is much faster than any current BCI speech generation technology.

3 11.4.1 11.4.2 Read the text and for questions 1-8 choose from the brain technologies (A-D).

Which brain technology

- 1 is a very small device?
- 2 will be able to work at a high speed?
- 3 allows research without experimenting on humans?
- 4 has already been in use for a number of years?
- 5 will solve a problem users experience with a current type of technology?
- 6 can aid scientists researching brain function?
- 7 could help people who cannot use their limbs?
- 8 is known for helping someone speak?

4 11.3.2 11.3.3 11.4.1 Answer the questions.

- 1 How has BCI been used before?
- 2 Why are scientists growing mini-brains?
- 3 **Think!** 11.3.2 11.3.3 11.3.7 Which brain technology do you think is the most useful? Why? What about your classmates?

5 11.4.5 Match the words in bold to their meanings:

- a sensor • make better • produce
- conditions that affect brain function
- a means to exchange digital information
- a message sent along a nerve cell
- a cell capable of becoming many different cell types
- a device or software related to the brain
- use • active • encourage increased activity

Grammar

see p. GR10

Prepositional phrases – Clauses of concession – Multi-word verbs

6 11.6.41 Choose the correct item.

- 1 The device looks great **although/whereas** it hasn't been tested on humans yet.
- 2 **In spite of the fact that/Despite** he studied hard, he couldn't understand the process.
- 3 This new technology is the best on the market **no matter/with respect** to its speed.
- 4 We know a lot about the brain, **yet/even though** there is still much to learn about this complex organ.
- 5 Dr Johnstone has come up **to/with** an effective new treatment for patients who suffer from frequent headaches.
- 6 Our research differed from theirs **only in respect of/in respect** to the methods used.
- 7 He went **back on/in** for a memory competition and won first prize by using the method of loci.
- 8 **Despite/However** passing the safety tests, the device wasn't approved.
- 9 Dr Watson will see you today, he's standing in **for/up** to Dr Jones while she's on leave.
- 10 **No matter/Nevertheless** how much research we do, we might never fully understand the human brain.

Speaking & Writing

- 7 11.1.6 11.1.10 11.3.2 11.3.3 11.3.4 11.3.6 **Think!**
What information in the text did you find most interesting? Why? Tell the class.
- 8 11.1.2 11.1.4 11.4.8 11.5.7 11.6.4 11.6.13 ICT Find information about other brain technologies. Prepare a presentation. Present it to the class.

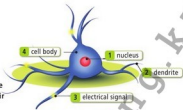
3b Neurones

Scientific Discoveries Vocabulary

- 1 **11.5.2** A neurone is a nerve cell. Look at the picture and match the neuron parts to their definitions.

🔊 Listen and check.

- A a part of a cell that contains DNA
 B the part of the neurone with the nucleus
 C a message sent from neurone to neurone
 D one of the short branches that receive signals from other neurones



Listening & Reading

- 2 **11.4.1 11.4.3** Read the title of the text and the first paragraph. What do you think makes this new type of neurone unique?
 🔊 Listen and read to find out.



THE ROSEHIP NEURONE

A New Type of Brain Cell

Scientists have learned much about the human brain from studying the brains of rodents, like mice, as they are remarkably similar to our own. However, an exciting discovery has cast doubt on the extent of this similarity, and, consequently, on the usefulness of rodent models of human brain functioning.



Discovering and understanding the rosehip neurone

Researchers in Hungary and America had been independently studying the human brain when they both discovered a new type of brain cell. The Hungarian research group had been recording the electrical activity of the brain's inhibitory neurones. These are special cells that regulate the speed of electrical signals in the brain, ensuring a healthy balance of electrical activity. Over time, they began noticing cells with a distinctive shape that must have been formed by the densely-packed network of nerve fibres around the cell's centre. The shape is supposed to have reminded them of a rose after its petals had dropped, so they named these cells 'rosehip neurones'. Meanwhile, in Seattle, Washington, scientists had also detected these cells using a new technique that allowed them to identify active genes in brain cells. Despite their different methodological approaches, both research groups had stumbled upon the same incredible discovery.

Once they became aware of this fact, the scientists could have continued their research independently, but they decided to collaborate in order to better understand these unique cells. They obtained cells from the brains of two deceased men who had donated their bodies to science and continued examining these neurones from different angles. Whereas the Hungarian team examined the shape and electrical features of rosehip neurones, the American scientists looked at their genetic characteristics.

What do rosehip neurones do?

While the precise function of rosehip neurones is still unclear, this research collaboration has provided the first steps towards a

deeper understanding of the role of this new type of brain cell. Since rosehip neurones are one type of inhibitory neurone, they must be involved in slowing down the speed of the electrical signals from neighbouring cells. Additionally, rosehip neurones comprised only about 10-15% of the inhibitory neurones studied and connected only to certain brain cells, leading researchers to conclude that their inhibitory function is very targeted.

Why are they important?

Scientists believe these newly-discovered neurones have the potential to provide answers to questions that have long troubled the medical and scientific communities. For instance, since documentation of the genetic and structural properties of rosehip neurones has begun, scientists can begin exploring whether dysfunction in these neurones causes certain brain diseases or mental illnesses. Furthermore, rosehip neurones may well be unique to humans. If so, their presence might be one of the factors underlying the superior cognitive abilities of humans. To date, these cells have not been observed in any other animal species, though future research might uncover them in other primates. However, since rosehip neurones do not exist in the rodent brain, scientists may need to disregard the idea that the human brain is merely a larger, more complex version of the rodent brain.

Check these words

inhibitory neurone, regulate, densely-packed, active genes, dysfunction, cognitive abilities

- 3** **11.4.1 11.4.2** Read again and mark the sentences (1-6) as T (true), F (false) or DS (doesn't say).

- 1 Scientists have only recently discovered human and rodent brains are similar.
- 2 Hungarian and American researchers worked together to discover rosehip neurones.
- 3 The shape of rosehip neurones in the brain is unique.
- 4 Rosehip neurones likely manage the speed of electrical signals in the brain.
- 5 Scientists proved that the genetic properties of rosehip neurones cause brain diseases.
- 6 Rosehip neurones might contribute to the advanced mental abilities of humans.

- 4** **11.5.2** Fill in: neurones (x2), abilities, fibres, properties, characteristics.

- 1 genetic; 2 dysfunction in;
3 genetic and structural; 4 network of nerve; 5 superior cognitive; 6 brain's inhibitory

Listening

- 5** **11.2.1 11.2.2 11.2.6** You will hear people talking in three different situations. For questions 1-3, choose the best answer (A, B or C).

- 1 You hear a professor talking about a new discovery in the human brain. Why is he talking to his students?
 - A to give them advice about applying for research jobs
 - B to inform them about a job opportunity
 - C to offer them the chance to co-author a journal article
- 2 You hear two students talking about a documentary they have seen. What do they agree about?
 - A how interesting the real life examples were
 - B how good the special effects were
 - C how accurate the information given was
- 3 You hear two scientists talking about their lab equipment. What does the woman think about it?
 - A it is faster than their previous equipment.
 - B it has too many unnecessary features.
 - C it is unable to perform basic processes.

Grammar Past modals

see pp.
GR11-GR13

- 6** **11.6.12** Use the words in bold to complete the sentences so they have a similar meaning to the first sentence. Use two to five words.

- 1 I am sure he was disappointed about leaving the research group. **HAVE**

He disappointed about leaving the research group.

- 2 They should **have** analysed all the tissue samples by now. **DUE**

All the tissue samples were by now.

- 3 I'm certain Dr Lee was very eager to carry out his experiment in public. **WILLING**

Dr Lee to carry out his experiment in public.

- 4 I thought Ryan wrote the research paper. **SUPPOSED**

Ryan was the research paper.

- 5 I'm sure they have proved their theory by now. **BOUND**

Their theory is by now.

- 6 It's fortunate that the accident didn't destroy all the tissue samples. **HAVE**

The accident all the tissue samples. Fortunately, it didn't.

- 7** **11.1.2 11.1.4 11.1.10 11.3.2 11.3.3 11.3.4 11.3.5 11.3.7**

11.5.8 THINK! Do a survey. Ask your classmates if they are in favour of or against studying the brains of people that donate their bodies to science with reasons to support their opinions. What about you? Present your findings to the class. Evaluate each other's performance. Ask for/Give feedback.

Writing & Speaking

- 8** **11.4.4 11.4.8 11.5.1 11.5.2 11.5.7 11.6.4 11.6.13 11.6.14** **ICT** Collect information about the different types of neurones. Prepare and give a presentation about them. Include: **name - location - function - any interesting facts**. You can use pictures to illustrate your presentation.

3 Memory

Vocabulary

- 1 a) **11.4.1** Fill in: decline, function, loss, radicals, antioxidant, acids.
 ☞ Listen and check.

Brain Food



Turmeric
 curcumin / 1)
 and anti-inflammatory
 properties / slow memory
 2) in people
 with Alzheimer's disease / new
 brain cells grow



'Fatty' fish
 omega-3 fatty
 3) / build
 nerve and brain cells /
 improve memory and mood /
 slow age-related mental
 4)



Pumpkin seeds
 antioxidants / protect brain
 from damage (free
 5) / source of
 zinc, magnesium, copper and
 iron / nutrients for optimum
 brain 6)

- b) **11.3.7** In pairs, use the completed table to talk about one of these brain foods.
- c) **11.3.9** **11.3.7** **THINK!** Can you think of other types of food that can help improve your memory? Tell the class.

Listening & Reading

- 2 **11.4.1** **11.4.3** Read the title and the first sentence of each paragraph. What do you expect the text to be about? Read the text to find out.



Do YOU REMEMBER...?



Memory is a subject that has fascinated scientists for centuries, and many studies have been carried out on individuals who have **enhanced** memory capabilities. **1** So what about the rest of us? Will we forever be forgetting birthdays and appointments and important information? Experts think not. It is now generally accepted that having a 'good' memory is not genetic, but learned.

Mnemonics

Mnemonics is basically a **skill set** that helps your brain remember, and anyone can utilise it. One of the techniques is the use of acronyms. **2** This is good for long lists of words, but what about numbers? You could try the Major System: every number has a sound associated with it. For example, 7 is a hard 'c', 2 is 'r' and 4 is 'y', so we can make the number 724 into 'canary' by adding a few vowel sounds. In addition, you can combine the Major System with **visualisation** - imagine a canary showing a film on a jet plane to help you remember the word. **3** Break the number into smaller parts: 7 - 24 is a lot easier to remember.

Brain Exercises

Professional athletes often say "if you don't use it, you lose it" when talking about their bodies' **physical** capabilities, the same is true of the brain. **4** Try solving maths problems in your head instead of using your phone's calculator, or learn how to cook, knit, speak a new language or play a musical instrument. It can be helpful and also fun to play word games with your friends.

Check these words

enhanced, memory capabilities, visualisation, physical capabilities, identify, absorb information, boost concentration, blood flow

- 3 **11.4.2** Read the text again. Match the sentences (A-F) to the gaps (1-5). There is one extra sentence.
 ☞ Listen and check.
- A If that sounds a bit complicated, try chunking instead.
 B People with these abilities are very rare, however.
 C They're not complicated, but it needs a lot of practice to recall them in detail.
 D A good diet containing 'brain food' like oily fish, walnuts and green tea is very beneficial, as is regular exercise, which increases blood flow to the brain.
 E It needs regular exercise and new challenges to stay strong.
 F For example, if you needed to buy celery, herbs, apples, rice and muesli, you might use the acronym CHARM.
- 4 **11.4.5** Match the words in bold with their meanings: bodily, advantageous, concentration, a variety of abilities, improved, the act of forming a picture of sth in your mind, vital.



draw a map from memory, or try to identify the ingredients in a dish you haven't tasted before.

Diet & Daily Habits

It's important to remember that lifestyle plays a role in brain function too. **5** Proper sleep is also **fundamental**. When you're sleeping, your brain is still absorbing information and organising your memories. What is more, getting a good night's rest also boosts concentration during the day.

Concentration

Most of us blame our inability to remember on having a 'bad' memory, but the truth is that we weren't paying attention when we first received the information. In our fast-paced modern world, the words of eighteenth-century English author Samuel Johnson still ring true: "The true art of memory is the art of **attention**."

Grammar

Affixes (prefixes and suffixes)

5 **11.6.4** Fill in the correct form of the words in bold using the appropriate affix.

- Mnemonic techniques are a good way to the effects of poor memory. **ACT**
- People who may find that their memory suffers because of it. **SLEEP**
- The two academics a book about the effectiveness of mnemonics. **AUTHORED**
- Low levels of vitamin K are linked to **FORGETFUL**
- A small to your lifestyle can have a huge effect on your ability to retain information. **ALTER**

Listening & Speaking

6 **11.2.4** **11.2.7** Listen to an interview with a neurobiologist. For questions (1-5), choose the correct answer (A, B or C).

- Rachel says mnemonic techniques
 - work well for everyone.
 - are difficult to understand.
 - have varying degrees of effectiveness.
- Both speakers agree that
 - the memory of lyrics lasts for a long time.
 - music is easy to learn if you start young.
 - mnemonics should be taught in primary schools.
- In order to remember historical dates,
 - connect them to each other.
 - set the information to music.
 - make associations between the dates and objects.
- Rachel suggests students
 - revise for longer periods of time.
 - employ rhythm and rhyme when reviewing their notes.
 - organise their notes into a new format.
- Rachel's course teaches people about
 - how memory works.
 - how to do well in online exams.
 - how to improve their memories.

7 **11.2.6** Listen to Ex. 6 again. Which of the phrases in the Language box below can you hear?

Asking for opinions	Expressing opinions
<ul style="list-style-type: none"> • Would you agree that ...? • Don't you agree that ...? 	<ul style="list-style-type: none"> • Frankly, I think that ... • I'm of the opinion that ... • To my mind ...
Positively	Negatively
<ul style="list-style-type: none"> • You (may) have a point. • You're right. • My thoughts exactly. 	<ul style="list-style-type: none"> • Well, that's not the way I see it. • I strongly disagree • I take your point/see what you mean, but ...

8 **11.1.7** **11.1.9** **11.3.3** **11.3.7** **THINK!** How can we improve our memory? Which memory technique is the best? Why? Use the information in Exs 2 & 6 and your own ideas to ask for/express opinions. Use the phrases in the Language box. Evaluate another pair's performance.

Writing & Speaking

9 **11.4.4** **11.4.8** **11.5.7** **11.5.8** **11.6.13** **11.6.34** **ICT** Use the Internet and other resources to find out more information about another memory technique. Prepare and give a presentation to the class.

3d Writing (Giving and following instructions)

Instructional texts

Writing Tip

Instructional texts tell readers what to do. They can be directions/instructions, regulations, rules, etc.

Layout

Instructional texts have a title or main heading indicating the subject matter. e.g. *How to connect your smartphone to a wireless network.*

We write the instructions in the correct order. We start a new line for each instruction using bullet points.

Style

The main stylistic features of instructional texts include:

- present tenses (used to convey information)
Smartwatches use different operating systems.
- the use of the imperative
Tap the 'Settings' icon.
- direct and simple language, not chatty
If your smartwatch uses Android, you can pair it with your phone to make a call or read a message on the go without taking your phone out.
- diagrams, photographs or sketches to help the reader follow the text.

Useful language

Sequence words

We use the following sequence words to present/describe the various steps in the correct order: *First/Firstly, Second/Secondly, Then/After that, Next, Finally.*

We can also use the following phrases to give advice to the reader.

Make sure you enable Bluetooth.

It's important to check that the code matches your smartwatch.

Remember to check if your smartwatch has its own app you can use.

Understanding the rubric

- 1 **11.5.7** Read the rubric and answer the questions.

You belong to an online forum that helps readers with various IT problems. One of your members has asked how they can pair their smartwatch with their smartphone. Write an instructional text for the forum explaining how to do it (120–180 words).

- 1 Who are the target readers?
- 2 How formal does your style need to be?
- 3 What stylistic features should you use?

Analysing a model

- 2 **11.4.1** **11.4.2** **11.4.6** Read the model text. What is the purpose of the text? Why has the writer used active, imperative verbs?

Pairing your smartwatch with your phone

Smartwatches use different operating systems. If you use Android, you can pair it with your phone to make a call or read a message on the go without taking your phone out.

- First, enable Bluetooth on your Android device. Tap the 'Settings' icon on your home screen. Then tap 'Wireless and Networks' then 'Bluetooth.' Make sure you enable Bluetooth.
- Next, you need to make your device discoverable. Tap on 'Make device discoverable' and then tap 'OK'.
- Now, turn on the smartwatch. Hold down the power button until the screen shows a watch and mobile icon on it.
- Finally, pair the smartwatch with your Android device. Tap 'Search for Bluetooth devices' on your phone, and select the smartwatch in the results. A code will pop up. It's important to check that the code matches your smartwatch. Then tap 'Pair'.
- That's all you need to do. However, remember to check if your smartwatch has its own app you can use. If you download and install it, you can access more functions like syncing.



- 3 **11.4.7** Read the text again, and put the instructions in the correct order.

- A Tap on 'Make device discoverable' and then tap OK.
- B Tap Settings, then tap 'Wireless and Networks' then 'Bluetooth'.
- C Check if your smartwatch has its own app and download and install it.
- D Check the code matches your smartwatch. Then tap 'Pair'.
- E Hold down the power button on the smartwatch to turn it on.
- F Tap 'Search for Bluetooth devices' and select the smartwatch in the results.



- 4 **11.5.2** Fill in the gaps. Use: tap, scroll, open, remove, click, choose.

Disabling pre-installed apps

- 1 _____ the 'Settings' icon on your home screen.
- 2 _____ 'Applications'.
- 3 _____ down and select 'Application Manager'.
- 4 _____ on 'All'.
- 5 _____ the apps you want to disable.

Tap 'Disable' to **6** _____ them from your home screen or 'Uninstall' if you want to take them off your phone altogether.

- 5 **11.2.2 11.3.2 11.3.4 11.6.12** Your friend has tried unsuccessfully to pair their smartwatch with their phone. Help them find out what went wrong.

Useful language

Identifying a problem: • I'm not sure what may/might/could have gone wrong. • This/That must have caused the problem. • You were supposed to have ...

Asking for instructions: • Can you tell/show me how to ...? • Can you help me ...? • What's next? • OK. Got it. Then what? • How do I do that?

Giving instructions: • Sure. It's simple/easy. First, you ... • Then, you ... • Next/After that, you ...

Grammar

Clauses of Concession – Conditional Clauses

see pp. GR10, GR13-GR14

- 6 **11.6.15** Read the theory and find examples in the text.

Clauses of concession are used to express contrast. We introduce them with the following phrases:

But John wanted a new phone, **but** he couldn't afford one.

Even though/although/though + clause

Although/Even though/though John wanted a new phone, **he couldn't afford one.**

In spite of/Despite + noun-ing form **In spite of/Despite** wanting a new phone, **John couldn't afford one.**

In spite of/despite + the fact that + clause **In spite of/Despite** the fact that John wanted a new phone, **he couldn't afford one.**

However/Nonetheless John wanted a new phone. **However/ Nonetheless,** he couldn't afford one.

While/Whereas Ben got a new phone, **while/whereas** John has to save up for one.

Conditional clauses are usually introduced by **if**. Other expressions are **unless (= if not), providing/provided (that), as long as, in case, on condition (that), otherwise, or else, what if, supposing (that), even if, only if, assuming (that).**

Unless you save your work, **you will lose it.** **You can use my computer on condition that** you don't touch my files.

- 7 **11.6.15** Join the sentences. Use the linkers in brackets.

UPDATING THE SYSTEM ON YOUR SMARTPHONE

- 1 Updating the system on your smartphone is easy. You must connect to a Wi-Fi network. (**providing that**)
- 2 The updates do not take long to download. Installing them can't be up to ten minutes. (**despite**)
- 3 You can check for system updates. You haven't received a notification about it by opening 'Settings' and choosing 'System update'. (**even if**)
- 4 Most updates are standard. You can customise some of them. (**while**)
- 5 You must restart your device after the system has been updated. Some devices do this automatically. (**although**)



- 8 a) **11.5.1 11.5.3 11.5.4 11.5.7** Read the rubric and answer the questions.

You belong to an online forum that helps readers with various IT problems. One of your members has asked how they can use their smart TV to mirror their smartphone. Write the instructional text for the forum explaining how to do it (120-180 words).

- 1 Who is going to read your text? Where will your text appear?
- 2 What style are you going to write in?
- 3 What stylistic features should you use?

- b) **11.1.10 11.4.8 11.5.1 11.5.3 11.5.4 11.5.7 ICT**

Do your own research to find information on how you can use your smart TV to mirror your smartphone. You can also use the prompts below to help you write your instructions.

- turn on TV
- use remote control go / menu – select 'Screen Share' or 'Screen Mirroring' (depending on brand of TV)
- swipe down / top of screen or go to 'Settings' / select 'Smart Share' 'Smart View' or 'Screen Mirroring' (depending on brand of phone)
- find / select / name/type / TV
- tap 'Connect' / phone screen / appear on TV

3e Culture Corner

Using memory techniques

1 **11.1.9** **11.3.7** **11.5.2** **THINK!**



Read the definition.

Can you think of any other mnemonic devices? Tell the class.

Mnemonic devices are memory strategies that aid in the retention and retrieval of information. The basic underlying principle of mnemonics involves associating the information you want to remember with an easier-to-remember image, word, sentence or song. The method of loci, also known as the memory palace, is one such mnemonic device.

2 **11.1.7** **11.4.1** **11.4.2** **11.4.3** Look at the picture and read the title of the text. Do you recognise this fictional character? How do you think he is connected to the method of loci? Read the first two paragraphs of the text to find out. Tell the class.

3 **11.2.4** **11.2.7** **11.4.1** **11.4.2** Read the text and put the steps (A-D) of the technique in the correct order.

👂 Listen and check.

4 **11.4.4** **11.4.8** **11.5.1** **11.5.3** **11.6.4** **ICT** Find out about how mnemonic devices have been used in popular culture in your country or in another country. Write a short text. Read it to the class.

Check these words

memory palace, popular culture, principle



Wouldn't it be amazing if you could remember huge amounts of information easily? Well, there is a way – it's called the method of loci. It is also known as the memory palace technique.

The method of loci was invented over 2,000 years ago and it was used by the Greeks and the Romans to give long speeches that lasted for hours without any notes to help them. It has found a place in popular culture recently thanks to Sherlock Holmes in the TV show *Sherlock*. He uses a memory palace, but it is the same principle and it's really easy to learn. It is basically a visual filing system. Believe it or not, once you have mastered it, you can memorise and recall any amount of items in a fixed order.

The technique

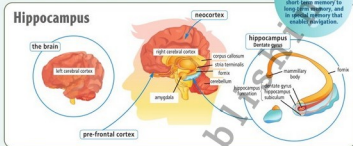
Here's how to do it.

- A Make the images memorable by making them as vivid as you can. For example, if your mind palace is your bedroom, and you have bread, milk and cereal on your shopping list, you can imagine the bread in your bed, the milk spilt all over your desk and the cereal on top of your wardrobe.
- B Think of a place you know well, like your town, your house or your bedroom. Start off small and choose ten locations in this place.
- C To remember your shopping list, you simply mentally walk through the location in your memory palace a couple of times in the same order and recall the images of the shopping items you placed there.
- D Then think of ten items on a shopping list and place the items in the locations in your memory palace.

Practice makes perfect and the more information you want to memorise, the bigger the memory palace has to be. Anyone can apply the method of loci in their daily life. It is helpful to prepare two or three journeys in advance. You can start with your bedroom, house, or a familiar route through your town. Then use it to remember your shopping list, the key points of a text you are reading, or a presentation you want to give. Why not give it a try?



How memories are formed



In the 1950s, researchers discovered that memories are created by an area of the brain called the hippocampus. The hippocampus encodes facts and emotions and then the pre-frontal cortex or memory centre of the brain stores these memories. A popular theory stated that memories were first stored in the short-term memory, before more meaningful ones were transferred to the long-term memory.

However, researchers at the Michigan Institute of Technology (MIT), in the USA, have shown that in fact, the brain makes two memories of events at the same time – one for the short-term memory and another for the long-term memory.

The short-term memory can hold about six or seven items for around 30 seconds, whereas the long-term memory is thought to have unlimited storage. After a

long-term memory has been formed, the more the neural pathways and synapses are activated, the stronger that memory becomes. Memories are not stored individually, though. They are made up of different pieces of information linked together and are reconstructed using different parts of the brain.

Sleep is very important for good memory retention. When we are asleep, the hippocampus communicates with the neocortex. It replays recent events and the neurones that were active during an experience are reactivated during sleep. This process allows the brain to sort out which memories are meaningful enough to be stored. So, if we don't get enough sleep, we might notice that our memory becomes weaker due to the fact that we are not allowing the brain the chance to consolidate our memories.

Check these words

encode, pre-frontal cortex, synapse, memory retention, neocortex, consolidate

- 1 **11.1.9** **11.3.2** Look at the picture and read the title of the text. What do you know about the hippocampus? How is it connected to memory formation?

🔊 Listen and read to find out.

- 2 **11.5.2** Fill in: cortex, facts, memories, synapses, retention, memory.

- | | |
|-------------------------|-----------------------|
| 1 pre-frontal | 4 encode |
| 2 short/long-term | 5 are activated |
| 3 memory | 6 consolidate |

- 3 **11.3.6** **11.3.7** **THINK!** Tell your partner three things that you have learnt from the text.

- 4 **11.4.4** **11.4.8** **11.5.6** **11.5.8** **ICT**
Collect more information about how human memory works. Prepare and give a short presentation to the class.

3 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- You must a form before you can donate blood. (**complete**)
- The article inspired me to more about the human brain. (**learn**)
- The two scientists over a disagreement in the lab. (**argued**)
- The doctors can't why she's experiencing so many headaches. (**understand**)
- I'm sending you for a scan because you keep, but your blood work is fine. (**fainting**)
- I was grateful to Nurlan for the inconsistencies in my research. (**bringing to my attention**)

- 2 **11.5.13** Choose the correct preposition.

- We know a lot about how the human brain responds **to/with** fear.
- There are very few behaviours that are **unique for/to** human beings.
- New evidence has cast doubt **about/on** a respected scientific theory.
- Different colours have different emotions associated **with/to** them.
- Timur carried out research **into/onto** rosehip neurones.

Collocations

- 3 **11.5.2** Fill in: *palace, switch, abilities, nerve, impulses, disorders*.
- memory
 - nerve
 - brain
 - network of fibres
 - cognitive
 - infrated

Word formation

- 4 **11.6.4** Complete the sentences with words formed from the words in capitals.
- The lab is protected by a fingerprint scanner and a speech system. (**RECOGNISE**)
 - Dark chocolate contains flavanoids, a type of (**Oxidant**)
 - There are many different techniques to improve your memory (**RETAIN**)
 - There is no denying the of brain research to the medical world. (**USEFUL**)
 - Many people use as a tool to help them achieve success. (**VISUAL**)

Words often confused

- 5 **11.5.2** Choose the correct word.
- Inhibitory neurones control how fast **electric/ electrical** signals travel in the brain.
 - In one person's body, the **active/activated** genes vary depending on the type of cell.
 - Elderly people often forget things that just happened, but their **long-distance/term** memories are crystal clear.
 - The new technology has several **applications/ appliances** in education.
 - They are developing a **brain-controlled/ controlling** prosthetic limb.



Kazakhstan in Action!

Read and choose the correct option.

- Researchers at Nazarbayev University have found evidence that bacteria in 1) **the** human intestine 2) **may/would** be associated 3) **to/with** Alzheimer's disease. Their study of the intestinal microbiome has changed the way scientists think 4) **of/about** the condition. What's more, this 5) **newly/freshly** uncovered information may soon lead to huge breakthroughs 6) **in/at** the treatment of 7) **both/ either** Alzheimer's disease and other long- 8) **term/ time** brain conditions.
- ReLive, an innovative start-up project from Nazarbayev University, 9) **includes/involves** the use of Brain-Computer interface (or BCI) technology to help people with physical 10) **inabilities/disabilities**. The project is centred around the use of an artificial exoskeleton which can be controlled through special equipment and software that can 11) **interpret/explain** brain 12) **signals/signs**. The technology will help people with impaired 13) **mobility/ motion** to be more active and 14) **improve/strengthen** their muscles over time.



Mind over Memory

In the modern corporate world, you need to be able to multitask, think on your feet, and recall data and facts at any time. All the technology in the world won't help you when a client asks you a crucial question in a face-to-face meeting. **1** In this article, memory expert Crystal Denver gives us her top five tips for perfect recall.

Have you ever wondered how actors manage to memorise their lines for a play that lasts hours? Many use a technique called **active experiencing**.

2 The same technique can be applied to practising presentations or sales pitches. Really feel the emotion behind your words, and act as you will on stage or in the boardroom when you deliver your speech.

Telling a story uses both visualisation and emotional memory – just think about how well you recall the fairy tales of your childhood. **3** Use scenarios and characters that interest you, and add sounds and smells. This is a great way to remember lists and information in sequence.

The journey method is another visualisation technique. The reason this type of technique works so well is that humans are generally visual learners.

4 Place the information you need to remember at intervals along your route, linking it to the buildings and landmarks you pass. As you travel along, you'll 'see' the information in your mind's eye.

Making a mind map may remind you of your school days, but it's actually a great way to make connections between facts. There are various online programs which can help you to construct mind maps, but I usually advise my clients to write theirs out by hand. **5**

Good old-fashioned **repetition** sounds boring, but it's one of the top ways to remember facts. **6** Longer pieces of information, like presentations, or more complicated concepts need even more repetition to be encoded into our memories.

Crystal's new book *Mind Over Memory* is available nationwide from 10th April.

Reading

1 **11A7** Read and match the sentences (A-G) to the gaps (1-6). One sentence is extra.

- A Writing strengthens the learning process, so this is a two-in-one trick for memorising information.
- B As a general rule, basic information needs to be repeated 30 times before it sticks in your memory.
- C So how do you make sure the knowledge you need is firmly fixed in your brain?
- D Simply imagine yourself going for a walk or a car journey.
- E It's adaptable, but less effective for long lists of information.
- F They don't just learn the words, they feel the emotions of their character and move about the room as they do.
- G If you create a story around what you want to remember, it can have much the same effect.

6x2=12 marks

Progress Check

3

Listening

2 **11.2.2** **11.2.6** You will hear an interview with a scientist about the human brain. For questions 1-5, choose the correct answer (A, B or C).

- 1 Dr Burns says he'd like to
 - A become a brain cartographer.
 - B discover new brain functions.
 - C create detailed maps of the brain.
- 2 What is NOT true about connectomes?
 - A They help us understand brain diseases.
 - B They are only used by doctors.
 - C They provide information about neural connections.
- 3 A new discovery was made by
 - A using a stain to enhance brain imaging.
 - B performing a number of MRI scans.
 - C investigating the brain's magnetic fields.
- 4 The newly discovered brain region
 - A also appears in other primates.
 - B is located at the top of the brain.
 - C was found by Dr Paxinos.
- 5 Scientists are exploring the brain of a chimpanzee because
 - A they are similar to human brains.
 - B the zoo will donate them for free.
 - C they are not difficult to obtain.

5x2=10 marks

3 Progress Check

3 **11.5.2** Fill in: *advocate, regulate, consolidate, stimulate, absorb, fire, comprise, encode, generate, enhance.*

- Our brains information even when we are asleep.
- He worked hard to ten years of research into a single book.
- The cerebrum, cerebellum and brainstem the human brain.
- Emotions such as fear will the amygdala.
- Computer programs are being developed that can speech by interpreting facial movement.
- Neurons have to in order to transmit signals in the brain.
- Nutritionists eating a healthy diet to improve brain function.
- The brain has to facts, emotions and experiences in order to create memories.
- The ancient Greeks believed rosemary could their memory greatly.
- The amygdala are very small parts of the brain, but they help to our emotions.

10x2=20 marks

4 **11.6.12** Use the words in bold to complete the sentences so they have a similar meaning to the first sentence. Use two to five words.

- It's a shame Ulan didn't do more research to support his theory. (SHOULD)
Ulan to support his theory.
- I'm sure Aizhan has finished her experiment by now. (BOUND)
Aizhan her experiment by now.
- I'm certain that she took the samples to the lab. (HAVE)
She to the lab.
- I thought Berik checked the data. (SUPPOSED)
Berik the data.
- They didn't tamper with the experiment because the lab was locked. (HAVE)
They with the experiment because the lab was locked.
- It's a pity you didn't apply for the position of Dr White's lab assistant. (SHOULD)
You for the position of Dr White's lab assistant.

6x3=18 marks

5 **11.6.14** **11.6.15** Choose the correct item.

- He is an incredible mathematician and scientist, **yet/despite** he struggles to express his ideas.
- As a scientist it's important to **keep on/up** with the most recent discoveries.
- In/With** respect to the paper you published last week, I have to **say** I disagree with your methods.
- We have to perform the surgery **regardless of/however** the risk.
- They will **continue** their research **provided that/in case** they receive funding.

5x1=5 marks

6 Match the exchanges.

- | | |
|----------|--|
| 1 | Can you show me how to instal this program? |
| 2 | Would you agree that this proves the theory? |
| 3 | OK. Got it. Then what? |
| 4 | If you ask me, it's not very ethical. |
| 5 | I think we should work together. |
- A Next, you tap on Settings.
B Well, that's not the way I see it.
C Frankly, I think that it needs further research.
D Great ideal My thoughts exactly.
E Sure. It's easy.

5x3=15 marks

7 **11.5.4** **11.5.7** Read the rubric. Use the prompts below to do the task.

You've got a blog about IT problems. One of your readers has asked how they can optimise the battery life on their smartphone. Write the instructional text for your blog explaining how to do it (120-180 words).

Optimising the battery life on your smartphone

- tap 'Phone Manager' icon/your home screen
- choose/battery option/the menu
- scroll down/bottom of the screen/select 'Optimise'
- smartphone/close any unnecessary apps/in background/help/prolong/phone's battery life
- process/completed/click on 'Finish' button

20 marks

Total: 100 marks

Check your Progress

- talk and write about the human brain, brain technology, neurones, memory (techniques, brain exercises/food) _____
- use prepositional phrases – clauses of concession, multi-word verbs, past modals, affixes (prefixes – suffixes) _____
- use clauses of concession – conditional clauses _____
- ask for/express opinions (positively/negatively) _____
- write an instructional text _____

GOOD ✓ VERY GOOD // EXCELLENT ///

Module 4

Timekeeping Devices

Vocabulary: timekeeping history, timekeeping devices, the calendar, slideshow presentations

Grammar: present/past perfect (active/passive voice), impersonal & cleft structures

Everyday English: asking for/giving/responding to advice

Phrasal verbs: verbs with off

Writing: a for-and-against essay

Culture Corner: *Where Time Begins: The Royal Observatory*

Curricular (Geography): Time Zones

Vocabulary

Introduction – Timekeeping history

- 1 **11.4.2** Complete the texts (A-D) using the words in the lists.
 ☞ Listen and check.

Listening

- 2 **11.2.3** **11.3.3** **11.3.7** ☞ Listen to two students talking about ancient timekeeping devices and answer the questions.

- 1 What is the boy's opinion of sundials?
- 2 What do they both agree on?

Tell the class.



Did you know?

You can see an hourglass in the Australian Parliament.



The history of timekeeping devices

A • stick • disc • shadow

Sundials are the earliest known timekeeping devices, used from at least 3500 BCE. They consisted of a flat

- 1) _____, made from stone or wood, with markings on it and a
- 2) _____ on top. The
- 3) _____ cast by the stick in the light of the sun could tell observers what part of the day it was.



B • practice • divide • cast

Obelisks are sundials, used the shadow created by the sun to **4)** _____ the day into parts, but in this case the stick was a monument. The **5)** _____ dates back to ancient Egypt, but has not been forgotten. The shadow **6)** _____ by the Washington Monument in Washington, D.C., USA can be used to tell the time.

C • passing • existence • flow

Water clocks, also called clepsydras, have been in **7)** _____ since at least 1500 BCE. They use the **8)** _____ of water to measure the **9)** _____ of time. They were originally stone and were used by the ancient Egyptians and Babylonians.



D • lit • burned • filled

Oil-lamp clocks were glass containers **10)** _____ with oil. A wick was placed in the oil and **11)** _____. As the wick **12)** _____ and the oil was used up, markings on the side of the container could be used to indicate how much time had passed. Oil lamps were at the peak of their popularity in the 18th century, and are very rarely used today.



OVER TO YOU! **11.1.6** **11.3.5** **11.3.7**

Close your books and write a few sentences about each one of these timekeeping devices. Tell the class.

4a Timekeeping in Ancient Egypt



For thousands of years, humans have been using various devices to **keep track of** the time. The ancient Egyptians, who have always been recognised for their skill in mathematics, architecture and astronomy, are no exception. In fact, they are widely regarded as one of the first **civilisations** to divide the day into **equal** parts. 12 hours of the day and 12 hours of the night. They **accomplished** this using timekeeping devices like the sundial and shadow clock, both of which relied on the Sun, and the merkhet, the oldest known astronomical tool.

The purpose of the merkhet, which has also been called a 'star clock', was to tell the time at night using the stars, the **alignments** of which ancient astronomers had long been tracking. The invention of the merkhet marked a significant improvement in timekeeping because even though it was not as quick or simple to use, it **overcame** a major disadvantage of the sundial as a timekeeper, namely its uselessness at night.

Shaped like the letter 'L' and typically **carved** from wood or bone, the merkhet consisted of a horizontal bar that ends with a short vertical arm **pointing** upwards. Attached to the end of this upright arm was a **plumb** line, which is a length of string with a weight fastened to the end. The force of gravity allowed it to hang straight down, establishing a perfectly vertical line to the ground.

The merkhet was used in conjunction with a sighting tool known as a bay, which was made from the central

rib of a palm leaf and had a thin V-shaped slit cut out at the top. When observers looked through this narrow slit, they could **precisely** line up objects in the distance. To tell the time at night, two observers, a pair of merkhet and two bays were needed. An observer held his merkhet up at arm's length and aligned it with the North Star, also called the Pole Star. To ensure perfect alignment, he looked through the slit of the bay, which was held close to the eye.

Another observer, facing him a short distance away, also used a bay to precisely align the plumb line of his merkhet with that of the first observer. This series of alignments established a north-south meridian, an **imaginary** line that identifies North and South. By noting the intervals at which certain stars crossed this meridian, observers were able to mark the passage of time, in hours.

Interestingly, the use of the merkhet was not limited to timekeeping. Other ways in which ancient Egyptians used this tool have been proposed. For instance, experts claim that merkhet had also been used by the ancient Egyptians in construction to accurately establish straight lines and right-angles, and to carefully align temples and tombs with celestial bodies. Archaeologists have **excavated** and **preserved** a few of these devices, which date as far back as 600 BCE. Today, merkhet are on display in museums in Egyptian artefact exhibitions and are **depicted** in a number of ancient Egyptian works of art.

Vocabulary

- 1 **11.52** The picture shows the merkhet and how it was used by ancient Egyptians to tell the time. Fill in: tool, observer, Pole, merkhet, line.

🔊 Listen and check.

Listening & Reading

- 2 **11.21 11.22 11.23 11.24 11.42 11.43** What differentiated the merkhet from other timekeeping devices? What else was it used for?

🔊 Listen and read to find out.

Check these words

accomplish, alignment, carve, meridian, excavate, depict

3 11.A.2 Read the text again. For questions 1-4, choose the correct answer (A, B, C or D).

- What does the writer say about the ancient Egyptians?
 - They were the first civilisation to try to measure time.
 - They invented several timekeeping devices.
 - They possessed scientific skills and knowledge.
 - They were the first people to mark time in hours.
- What is NOT true about the merkhet?
 - It should be used in pairs for timekeeping.
 - It can't be used in the daytime.
 - It is the same shape as a letter of the alphabet.
 - It does not require the use of a bay.
- What was measured to determine how much time had passed?
 - the movement of stars across a meridian line
 - the movement of the North Star
 - the movement of the plumb line
 - the movement of the stars across the slit in the bay.
- What is the main purpose of the text?
 - to compare different methods of timekeeping in ancient Egypt
 - to describe an ancient timekeeping device
 - to inform readers how to use a merkhet
 - to explain why the merkhet is no longer used

4 11.A.5 Match the words/phrases in bold in the text to their synonyms.

- positions • pictured • accurately • record
- outpassed • groups of people who share society, culture and a way of life • sculpted
- kept safe • non-existent • dug up • achieved
- identical

Grammar

Present/Past perfect (active/passive voice)

see pp. GR3 - GR6

- Find examples of:
 - the present/past perfect (active & passive) and
 - present/past perfect continuous (active) in the text. When/How do we use these tenses?
- Put the verbs in brackets into the correct present/past perfect tenses.

Home Notifications Messages


@rob_not_hug 1) (everyone/already/start) their presentations on timekeeping devices? I'm feeling lost because I 2) (plan) to present the water clock, but I 3) (just/learn) that someone else 4) (work) on that topic since yesterday. Which topics 5) (not/choose) yet?

@julie Hi Rob! Candle clocks 6) (select) by Julie, but after she 7) (research) them for a few hours, she decided to present the hourglass instead. So candle clocks are available, but Julie's problem was finding up-to-date resources. Although the passing of time 8) (measure) with candles from Europe to Japan before the invention of the mechanical clock, not a lot 9) (write) about candle clocks.

@jonas_j Hey Rob! I 10) (look) for information about candle clocks all night last night when I saw an article about King Alfred the Great's candle clock. Of course, candle clocks 11) (use) by other people for decades beforehand, but King Alfred's clock sounded rather interesting. Perhaps you could base a section of your presentation on that?

Latest Tweets

Speaking & Writing

- 11.1.1 11.1.3 11.1.10 11.3.2 11.3.3 11.3.5  **THINK!** What problems might ancient Egyptians have faced using the merkhet? How do you think they managed to solve them? Discuss in groups.
- 11.1.6 11.1.9 11.4.8 11.5.1 11.5.2 **ICT** Collect information about another ancient timekeeping device that was used in your country or another country. Include: description, how/when it was used, who it was used by, any other interesting facts. Present it to the class.

4b The Calendar

Vocabulary

- 1 a) 11.5.2 Match the time units (1-10) to their definitions (a-j). Check in your dictionary.



- | | | | |
|----------------------------|-------------|-----------------------------|--------------|
| 1 <input type="checkbox"/> | fortnight | 6 <input type="checkbox"/> | decennial |
| 2 <input type="checkbox"/> | leap second | 7 <input type="checkbox"/> | bicentennial |
| 3 <input type="checkbox"/> | leap year | 8 <input type="checkbox"/> | epoch |
| 4 <input type="checkbox"/> | lunar month | 9 <input type="checkbox"/> | era |
| 5 <input type="checkbox"/> | biennial | 10 <input type="checkbox"/> | eon |

- a happening every 200 years
 b the time taken for the moon to undergo all phases
 c an indefinite period of time
 d a second inserted in our local time to stay close to solar time
 e a long distinct period of history
 f a two week period
 g the beginning of a distinct period of history.
 h happening every other year
 i a year containing 366 days
 j happening every ten years

- b) 11.4.5 Which one can you see in the picture?

Check these words

Waxing Half, Waning Half, millennium, (be) derived from, evolve, ritual, respectively, counterpart

Listening & Reading

- 2 11.4.1 11.4.2 11.4.3 Look at pictures A & B and read the title of the text. How do you think they are related? What do you expect the text to be about? Read the text to find out.



The origins of the seven-day week can be traced back to the Babylonians of Mesopotamia. 1 Their efforts to establish an accurate calendar led them to focus on four lunar phases – New Moon, Waxing Half, Full Moon and Waning Half. They determined that the moon takes roughly seven days to move from one phase to the next, so it took approximately 28 days to cycle through all the phases. 2 In other words, they typically had three seven-day weeks in a row, followed by one week that lasted 8-9 days.

Furthermore, the number seven held special significance for the Babylonians, making it the ideal measure of a week. They believed that the solar system comprised the seven celestial bodies that were visible to the naked eye – the Sun, Moon, Mars, Mercury, Jupiter, Venus and Saturn, each of which represented one of their gods. 3 This idea of a seven-day week spread to Egypt, Greece, and eventually to Rome, where this unit of time was formally adopted nearly two millennia ago. Since then, seven days has been the accepted length of a week all over the world.

What's behind the names of the days of the week?

Initially, the names of the days of the week were derived from the names of the seven celestial bodies. 4 As these celestial bodies also represented gods, the Babylonians were the first of many civilisations to honour their deities in this way. The ancient Greeks referred to the days of the week as *hēmerai* or 'days of the gods'. Later, the Romans called the days by the names of their own gods. Additionally, after coming into contact with the Romans, the Anglo-Saxons, a Germanic tribe of Northern Europe, also used the names of their own deities to refer to the days of the week. 5 For example, in Anglo-Saxon, *Mōnandæg* was named after the moon goddess Mōna. It's not hard to see how these words might have evolved over time into the days of the week that we know today.

- 3 **11.4.7** Read the text again and choose from the sentences A-F the one which best fits each gap (1-5). There is one extra sentence.

🔊 Listen and check.

- A In fact, the Babylonians observed specific rituals every seventh day as a way of honouring these celestial bodies.
- B The Babylonians, for instance, named Tuesday to Saturday after the five planets, while Sunday and Monday were named after the Sun and Moon, respectively.
- C Other ancient civilisations might have also used this calendar.
- D They were ahead of their time with respect to astronomy and had been recording the movements of celestial bodies for centuries.
- E It is these names, rather than their Greek or Latin counterparts, that the modern English days of the week are based on.
- F They added leap days as needed in order to ensure that the calendar consistently followed the phases of the moon.

- 4 **11.4.5** Match the words in bold to their meanings: positions, shrinking, equivalents, stages, beginnings, expanding, practices, objects.

- 5 **11.3.7** Say two things you have learnt from the text.

Idioms with time – Collocations

- 6 **11.5.2** Complete the sentences using: *a matter of time, beat the clock, against the clock, a race against time, at the 11th hour, third time is a charm.*

- She was working to finish her assignment before the deadline.
- You started your essay How do you expect to finish before the deadline?
- I managed to and submit my paper before our 10 am deadline.
- I failed that exam twice. But, as they say, I have just passed!
- If she continues spending carelessly, it'll only be before she's broke.
- We're in to finish the roof before the rainy season starts.

- 7 **11.5.2** Choose the correct item.

- You're **wasting/losing** your time applying for jobs online. It's much better to apply in person.
- We only have three days to prepare, so we need to start immediately. There's no time to miss/lose!
- I was only reading the magazine to **spend/pass** the time while waiting at the dentist's office.
- We've just been **spending/marking** time today waiting for the party tonight.

Listening & Speaking

- 8 a) **11.2.2 11.2.3 11.2.4** 🎧 Listen to a conversation between two students. For questions (1-3), choose the correct answer (A, B or C).

- At solar noon
 - all clocks show 12 o'clock.
 - the sun is high in the sky.
 - the difference between our clocks and Solar Time is greatest.
 - What is true about the Earth?
 - It spins on its axis once per day.
 - It takes exactly 24 hours to spin once.
 - It tilts on its axis every 24 hours.
 - Why were leap seconds introduced?
 - to make it easier to tell the time
 - to reduce the difference from solar time
 - to help us establish different time zones
- b) **11.2.2** 🎧 🗣️ Listen again and answer the questions. a) What is True Solar Time? b) What happened in 1884? Compare with your partner. Tell the class.

Speaking & Writing

- 9 **11.1.1 11.1.3 11.3.3 11.3.5** 🗣️ **THINK!** Why did various calendars exist in the ancient world? What do you think made people change the way they calculated time? Discuss in groups.
- 10 **11.1.8 11.1.10 11.4.8 11.5.1** **ICT** Collect information about various ancient calendars. Prepare and give a presentation about them. Write about: *what they were based on, how many seasons/months/days the year was divided into and any interesting facts.* Evaluate another classmate's performance.

4 C Slideshow Presentations

Vocabulary

- 1 a) **11.5.2** Fill in: *stand, put, present, check, select, type, create, know, oversee, display, stick, end*. Which ones can you see in the pictures?



Effective Slideshow Presentation

Do's

- 1 your equipment works before you give your presentation
- 2 your audience (age, education, interests, etc)
- 3 to a colour scheme
- 4 information in bullet points
- 5 visual representations of data (infographics, charts, graphs)
- 6 with a summary slide

Don'ts

- 1 in front of your slides
- 2 more than 5 bullet points on a slide
- 3 small/stylised fonts (difficult to make out from a distance)
- 4 special effects
- 5 only **capital** letters
- 6 fonts on similarly coloured backgrounds

- b) **11.3.5 11.3.6 11.3.7** **THINK!**
Add two more to each group. Discuss with your partner. Tell the class.

Listening & Reading

- 2 **11A.3** Read the title of the text and the subheadings. How can these tips help you make an effective slideshow?

👂 Listen and read to find out.

How to Make an Effective Slideshow Presentation

When giving a presentation, a well-executed slideshow can greatly facilitate understanding of the material you're presenting, and also stimulate the audience's interest in the content. However, if your slideshow distracts from, rather than supports, the message, you run the risk of generating the exact opposite effect. In order to avoid confusing, distracting and losing your audience, what you need to do is follow these principles. They will set you on the right track towards creating an effective slideshow presentation.

1. Avoid wordy slides - When each and every word of your presentation is displayed on your slides, you will be tempted to read from the slides, but it is the audience who will be busy reading the information on the slides, rather than listening to you. This would completely defeat the purpose of a presentation. What your slides are meant to do is complement your presentation by reinforcing important points, not overwhelm your audience with information. To avoid making this common mistake, focus on conveying only one idea on each slide, and limit your slides to five bulleted lines of text, each containing at most five words.

2. Avoid distracting animations - PowerPoint, Prezi and Keynote are all powerful presentation tools, full of creative ways of animating text, shapes and images. When used wisely, these effects can make your presentation seem more dynamic and increase the impact of your message. However, it seems that, when misused, these same effects can distract the audience and make your presentation seem unprofessional. To prevent yourself from falling into this trap, use animations sparingly, incorporating them only when your message calls for it, such as when you're discussing movement or change. Additionally, rather than have effects emerging from all angles on your slide, use animations to guide the audience's eyes to what they should be focusing on as you speak.

3. Pay attention to font style, size and colour - Last, but not least, pay careful attention to font selection. It goes without saying that slides that are not readable will be highly ineffective at getting your message across. Not all font styles are easy to read when projected on a large screen. An example would be serif fonts, which have small decorative lines on different parts of the letters. Fonts without these embellishments, called sans-serif fonts, are more readable in presentations. Script-based fonts, which are modelled after various forms of calligraphy and handwriting, should also be avoided as they are sometimes difficult to decipher from a distance. Font size should also be carefully considered. For text to be clearly visible even from the back of the room, experts recommend between 24 and 32 point font size for the body of your presentation, with titles ranging from 36 to 44 point size. Finally, be sure that your font stands out against the background of your slide. Contrasting colours are key! What people are generally used to is reading dark text on a light background, so that's a good place to start.

Check these words

well-executed, facilitate, stimulate, distract, generate, complement, reinforce, convey, incorporate, emerge (from), embellishment, decipher

3 **11.4.2** Read the text again and answer the following questions.

- How should you use slides to complement your presentation?
- Why is it important to use animations in moderation?
- What problem(s) might someone sitting at the back of the room face during your presentation? How can you deal with it/them?

4 **11.4.5** Match the words in bold to their meanings: *creating, communicating, help, appearing, make out, encourage, including, add to.*

5 **11.3.6 11.3.7**  Say two things you have learnt that will help you in your next presentation. Compare with your partner. Tell the class.

Grammar


Impersonal & Cleft sentences

6 a) **11.6.4**  Find examples of impersonal and cleft sentences in the text. Check with your partner. Tell the class.

b) **11.6.4** Rewrite the following sentences as cleft sentences.

- Ulan checked the equipment before his presentation.
The last thing Ulan did
- The speech on ancient calendars took place on Monday.
The day
- The presentation was held at the company's headquarters.
The place
- A sighting tool was used so that the merkhel would be aligned correctly.
The reason


Listening & Speaking

7 **11.2.3 11.2.6 11.2.8**  You will hear an interview with a public speaking expert. For questions 1-8, complete the sentences.

Top Tips for effective presentations

- Try to be a(n) 1) speaker.
- Make sure you 2) the topic well.
- It's a good idea to practise using a 3) or by asking a friend to watch you.
- Use body language that is 4) such as standing up straight and looking at the audience.
- You can get the 5) of your audience by using a 6) question or statement.
- You can 7) the audience directly.
- Use 8) to communicate ideas.

Asking for/Giving/Responding to advice

8 **11.1.7 11.2.3 11.2.6 11.2.8 11.3.6 11.3.7**  Listen to the interview in Ex. 7 again. Make further notes on effective presentations. Compare with your partner. Use your notes and the Useful Language box to ask for and give advice on how to give an effective slideshow presentation.

Asking for advice

- What do you think I should do? • What would you do if you were me? • Could you help me out here?

Giving advice

- Have you thought about ...? • Why don't you ...?
- How about ...? • I think it would be best if you ...
- It might be a good idea to ... • In my opinion, you'd better ... • If I were in your shoes, I would ...

Responding to advice

- Do you really think that would work? • I'm not sure that's such a good idea. • I suppose you're right.

Writing & Speaking

9 **11.1.2 11.3.4 11.5.1 11.6.7** **ICT** Collect information about slideshow presentations including: *body language, layout, graphics & design, extra material and any extra tips.* Then write rules for how to give a successful slideshow presentation. Evaluate other speakers' performances and ask for/give feedback.

4d Writing

A for-and-against essay Rubric Analysis

- 1 **11.5.5** Read the rubric and underline the key words. Answer the questions (1-3).

You have had a class discussion about daylight saving time (DST). Now your teacher has asked you to write an essay discussing the advantages and disadvantages of DST. Write your **essay**, justifying your arguments (140-190 words). Write about: • longer evenings • health.

- Should advantages and disadvantages of the topic be discussed in the same paragraph?
- What style should the essay be written in?
- How should each argument be supported?

Model Analysis

- 2 a) **11.4.5 11.5.2** Read the model. Choose the appropriate linkers from the words in bold.

1 Earth's population is close to 8 billion, but only 1.5 billion people observe daylight saving time (DST). **1) Without a doubt/Although** DST was useful in the past, whether it still has a place in our modern world is a controversial topic.

2 There are a number of advantages to DST. **2) Furthermore/ Firstly**, an extra hour of daylight in the evenings at the start of DST encourages people to lead a more active lifestyle, engaging in activities such as team sports, jogging or simply going for a walk. **3) Moreover/Therefore**, lighter evenings give people more time to spend money in shops, cafés and restaurants. **4) As a result/For example**, it benefits the local economy.

3 **5) In addition/On the other hand**, DST has its drawbacks. **6) To begin with/in contrast**, losing an hour of daylight at the end of DST has a negative effect on our health: it can trigger illnesses such as depression. **7) For instance/Secondly**, the loss of an hour's sleep affects concentration. **8) This is because/This means that** traffic accidents and workplace injuries increase in the days following the change from DST.

4 **9) Above all/To conclude**, although there are benefits to DST, I believe the disadvantages outweigh them. It is simply not worth putting our health at risk for an extra hour of daylight in the summertime.

- b) **11.5.5** Which paragraph:

- A contains arguments against the topic?
 B summarises the writer's opinion?
 C contains arguments for the topic?
 D states the topic?

- c) **11.5.4 11.5.5** Find and replace the topic sentences in the main body paragraphs with other appropriate ones.

- d) **11.4.4 11.5.5** What technique has the writer used to start the essay? Suggest another beginning to the essay.

Linkers

- 3 **11.5.2** Choose the correct linking words/phrases.

- Firstly, time management makes people use their time more efficiently. **As a result/In addition**, they are more productive.
- One disadvantage of using an alarm clock is that it disrupts your natural sleep pattern. **On the other hand/This means that** using one to wake up puts additional strain on your body, raising your heart rate and blood pressure.
- What is more, time zones are becoming a thing of the past. **This is due to the fact that/ Besides that**, countries now share a global community via the Internet.
- Another major benefit of having a standardised calendar is that it would make life simpler. **As well as/For example**, not having to redesign the calendar every year, it would make financial calculations easier.
- In conclusion/Secondly**, it is clear that using an alarm clock has pros and cons. It is up to each individual to decide whether it is a good option for them or not.

4 **11.5.3** **11.5.4** Expand the prompts into full supporting sentences.

- 1 To begin with/alarm clocks/necessary/start day/ on time. For example/you need/arrive at school or work/at specific time/in order/attend classes or meetings.
- 2 Firstly/changing/one time zone to another/can mean/disrupt body clock. Consequently/people/ may feel/overly tired or even unwell.
- 3 In the first place,/universal calendar/make same date/fall same day/every year. This is due to the fact that/every month/has 28 days.

5 **11.5.3** **11.5.4** Read the arguments for and against the use of timekeeping technologies in our daily lives and think of your own arguments to match the justifications. Use the phrases from the Useful Language box to write full paragraphs.

For

- 1 Checking the time via the Internet allows us to know when places are open, so that we don't waste time.
- 2 Using planners on our phones allows us to allocate hours to specific tasks and manage to get them done.

Against

- 1 Artificially regulating our sleep with alarms means we don't complete our natural sleep cycle, which affects our bodily functions and can result in illness.
- 2 Since technology is everywhere, we are constantly in a hurry and worrying about the time, which leads to stress.

Useful language

Introducing topic sentences to express advantages:

- There are a number of benefits ... • There are arguments in favour of ...

Introducing topic sentences to express disadvantages:

On the other hand, there are a number of disadvantages/arguments against ...

Listing points: • To begin with/start with,/First of all,/First, • Secondly,/Furthermore,/In addition,/What is more,

Introducing examples/justifications: • For example/instance, • This is because of/due to ... • This is due to the fact that ... • This means that ... • This way./Consequently,

Conclusion: To sum up,/In conclusion,/All things considered,/All in all,/It is clear that ...

Your turn

6 a) **11.4.5** Read the rubric, then the arguments (1-6). Which are arguments: for? against?

You have had a class discussion about time management apps. Now your teacher has asked you to write an essay discussing the advantages and disadvantages of using them. Write your essay, justifying your arguments (140-190 words). Write about:

- time management • stress.

- 1 Using time management apps makes people more efficient.
- 2 Time management apps encourage you to cram more into your day.
- 3 Using apps requires you to be constantly connected to technology.
- 4 Time management apps help people coordinate their activities.
- 5 Relying on apps can make you feel as if you're not in control of your life.
- 6 Time management apps help people stay focused.

b) **11.3.3** **11.3.5** **11.3.7** In pairs, think of justifications for each argument.

c) **11.2.3** **11.2.4** Listen to two people discussing time management apps. What justifications do they give for each argument in Ex. 6a?

7 **11.5.1** **11.5.2** **11.5.3** **11.5.5** **11.5.6** Use your answers in Ex. 6 and the plan to write your essay.

Plan

Introduction

Para 1: state the topic

Main Body

Para 2: arguments for & justifications/examples

Para 3: arguments against & justifications/examples

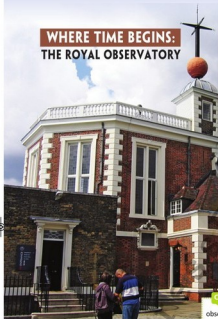
Conclusion

Para 4: summarise arguments & state your opinion

4^e Culture Corner



WHERE TIME BEGINS: THE ROYAL OBSERVATORY



▶ The Royal Observatory in Greenwich, London, is famous for more 1) its research into the stars and the planets – this is the place where time begins. 2) the sun is exactly over a line (called the prime meridian) at the Royal Observatory, it is precisely midday in the UK. All world time is calculated from this; in the two nearest time zones, it is exactly an hour before and an hour 3) GMT (Greenwich Mean Time). This imaginary line circles the Earth, but 4) be physically seen and even touched on the courtyard floor at the Royal Observatory.

▶ The Royal Observatory was set 5) in 1675 to solve a tricky problem. Trying to navigate their way around the world, sailors needed to know the exact time in 6) to pinpoint how far they had travelled and where they were. However, most clocks three hundred years ago were 7) that accurate. The Royal Observatory gathered the most brilliant scientists to search 8) an answer and that answer was the prime meridian – a fixed point from which all time 9) measured.

▶ Because it goes all the way around the planet, the meridian divides the globe into two hemispheres. Visitors to the Royal Observatory often have their photographs taken standing over the line with a foot in 10) hemisphere. But that's not all there is to see and do there. The Royal Observatory complex boasts London's only planetarium, as 11) as the largest refracting telescope in the UK and lots of galleries and exhibits related to time. The Royal Observatory is a major tourist attraction 12) visitors can truly experience the time of their lives.

Check these words

observatory, navigate, hemisphere, refracting

1 **11.1.8 11.3.5 11.4.1 11.4.8** What do you know about the Royal Observatory in Greenwich? Think of two questions about it. Read the text. What can you answer your questions?

2 **11.4.2** Read again and, in pairs, think of the word that best fits each gap (1-12). Listen and check your answers.

3 **11.2.5** Match the words in bold to their definitions and then use them to make sentences based on the text: *very intelligent, splits, not real, has something that it is proud of, find the exact position of, worked out, sail, difficult.*

4 **11.4.5** Find words in the text which are antonyms to the words below.

Para A: unknown (adj); real (adj)

Para B: incorrect (adj); spread (v); changeable (adj)



Para C: tiniest (adj); minor (adj)

5 **11.3.8 11.3.7 11.4.1** Tell the class three things you have learnt from the text.

6 **11.1.8 11.1.8 11.1.10 11.4.8 11.5.1 ICT** Find information about an important observatory/science museum in your country. Write about: *what it is and why it is important, its history, what visitors can see and do there.* Write a paragraph and read it to the rest of the class.

Curricular: Geography

4f

- 1 **11.4.2** What does the abbreviation UTC stand for? How is it related to the time zones around the world? Read the text to find out.
- 2 **11.4.7** Read again. Five sentences are missing. Match the sentences (A-F) to the gaps (1-5). There is one extra sentence.
- A The 360 degrees of the Earth's longitude were divided into 24 sections, each comprising 15 degrees.
- B Following this principal, we can see that if it is 12:00 noon on the Greenwich Meridian, the time in New Zealand will be UTC +12.
- C However, because the Earth is spherical, it wouldn't make sense for the whole world to use UTC.
- D In addition, there is the fact that many countries observe daylight saving time, altering their local time zone by an hour for six months of the year.
- E Move 15 degrees north and you will be in the time zone UTC +2.
- F It is calculated by combining data about the Earth's rotation with the time shown by 400 atomic clocks distributed worldwide.
- 3 **11.2.1 11.3.6 11.3.7**   Listen to the text. Tell your partner three things you have learnt about time zones.
- 4 **11.1.1 11.1.6 11.1.10 11.1.5 11.4.6 11.4.1 ICT**
THINK! In groups, collect information about countries with more than one time zone. In your opinion, what are the advantages and disadvantages of living in a country with more than one time zone? Write a short text expressing your views. Tell the class. Who agrees with you?

Did you know?

In English, it is known as Coordinated Universal Time, in French, it is Temps Universel Coordonné. The abbreviation UTC was a compromise between CUT and TUC!

Time Zones



You know that if you travel from Almaty to Baikonur, you have to set your watch back by an hour. This is because the time in Almaty is UTC +6 and the time in Baikonur is UTC +5 – but what does that mean?

What is UTC?

Coordinated Universal Time (UTC) is a standard which all our mobile timekeeping devices are set to. **1** This type of clock is incredibly accurate, with an estimated error of one second in 100 million years.

The Prime Meridian

UTC is used in parts of Greenland, Iceland, the UK, Ireland, 14 African countries and Antarctica. In other words, all those countries which lie on the Greenwich Meridian – also called the Prime Meridian – an imaginary line that runs north to south across the globe. So at 12:00 noon in these countries, the sun is directly overhead. **2** In this scenario, noon in New Zealand would be in the middle of the night!

Creating a standard

To solve the problem of needing a standardised time which also made sense with respect to local conditions, the scientist Sir Sandford Fleming came up with the idea of time zones in 1878.

3 Each section became its own time zone. So UTC is one zone, but move 15 degrees east and you will be in the next zone, UTC +1. Move 15 degrees west and you will be in the time zone UTC -1. **4** In other words, midnight.

How many time zones?

In reality, in our modern world, there are more than 24 time zones because some islands and parts of countries have zones in increments of 30 or 45 minutes. **5** It sounds complicated, but time zones help our globalised and interconnected world run smoothly – imagine how much more complicated international trade and travel would be without them!

Check these words

increment, longitude, spherical

4 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- The restoration of the clock was costly and it took years to it (settle the debt)
- Instead of the deal, they made a compromise. (cancel)
- Let's the garden party because it's raining. (delay)
- She's clever, but she can't resist the chance to (try to impress)
- Peter hadn't adjusted to the local time and at dinner! (fell asleep)
- Alice's time management app is really starting to (become successful)

- 2 **11.6.3** Choose the correct prepositions.

- The English name for the month August is derived **by/from** the name of the Roman emperor, Augustus Caesar.
- Information about the artefacts is **displayed on/at** signs.
- Our calendar is divided **in/into** 12 months.
- Students learn about a range of devices from water clocks **until/to** merkhets.
- Make sure all the key information is **on/in** your slides.
- Nowadays, most people use their smartphones to keep track **with/of** time.

Collocations

- 3 **11.5.2** Fill in: *visual, sighting, standardised, perfect, well-executed*.

1 alignment	3 time
2 representations	4 tool
	5 slideshow

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- Unfortunately, my slides were because the font was too small. (EFFECTIVE)
- Stonehenge was built in with the sun on Midsummer's Day. (ALIGN)
- The speed of Earth's used to be a lot faster than it is today. (ROTATE)
- The problem with sundials is their when the weather is cloudy. (USELESS)
- Avoid using fonts with: they look pretty, but are hard to read. (EMBELLISH)

Words often confused

- 5 **11.5.2** Choose the correct item.

- The ancient Mesopotamian civilisation/culture lasted for about 3,000 years.
- The year is not divided into **equal/equivalent** parts: some months are longer than others.
- The ancient Greeks are remembered for their **skill/ability** in maths, science and the arts.
- Atomic clocks are the most **accurate/fixe**d in existence.



Kazakhstan in Action!

Read and fill in the correct word.

- People in the region of Kyzylorda have seen impressive improvements in their 1) of life thanks to a simple change: turning the clocks back 2) one hour. By moving from the fifth to the fourth time zone, they managed 3) save an estimated 4% on electricity in the first year alone. 4) only that, but it has 5) reported that the extra daylight 6) had a positive effect 7) public health as 8)!
- In January 2019, Nazarbayev University held a public speaking and presentation skills workshop 9) part of the Power of the Future programme set 10) by the United States Agency for International Development (USAID). It is designed to give students the resources and the confidence 11) present their ideas publicly and develop their leadership 12) So far it has trained students with backgrounds in electrical, electronic, chemical and computer engineering.



The Dawn of Horology

Horology is the study of how to measure time. The word has Greek roots and this discipline has been practised for thousands of years.

The Romans divided the day into two equal parts, with 12 day-hours and 12 night-hours. The first day-hour began when the sun rose, the sixth hour was at midday, and the last hour ended at sunset. Therefore, the length of the hours varied with the season, so a day-hour in winter might only last 45 of our modern minutes, while in summer it could be up to 90 minutes long. An hour was the smallest unit of measurement in ancient Rome – the concept of minutes and seconds did not exist.

The passing of these hours was tracked using horologia – timekeeping devices. For daylight hours, they used sundials, and at night they used mechanised water clocks. The measurement of time was key to the success of the highly-organised Roman army: soldiers followed a strict programme for meals and sleeping.

Ancient Rome wasn't the first civilisation to measure time. However, it is from the Roman era that we inherited some of the language we use to talk about time. Have you ever told someone that you got up at 6 am? Or that you'll meet them at the cinema at 8 pm? These abbreviations – am and pm – are actually from Latin. Meridies meant 'midday', and so ante meridiem was 'before midday' and post meridiem was 'after midday'. The Romans may not have developed a sophisticated system to measure time, but they did influence the way we talk about it!

Progress Check

4

Reading

- 1 **11.4.2** Read the text and mark the sentences T (true), F (false) or DS (doesn't say).
- In Ancient Rome, the day hours were longer in summer.
 - The Romans didn't use units smaller than an hour.
 - Horologia were only used to track time during the day.
 - The Romans used a celestial body to tell the time.
 - The Romans didn't invent any timekeeping devices.
 - Timekeeping was important for regulating the military in Rome.
 - Timekeeping devices from the Roman era still survive to the present day.
 - Some modern timekeeping terminology is based on Roman language.

8x2=16 marks

Listening

- 2 **11.2.2 11.2.3 11.2.4 11.2.6** You will hear five short extracts in which people are talking about slideshow presentations. Match the sentences A-H to the speakers 1-5. There are three extra sentences.

- The element of surprise can be useful when making a point.
- Encouraging participation will help the audience to focus.
- Having too much variety is as harmful as having too little.
- Too much information often leaves listeners confused.
- Evoking emotion can confuse those who are listening.
- A disorganised presentation suggests unprofessionalism.
- A lack of preparation can lead to a bad experience.
- Paying attention to detail can make you forget something big.

Speaker 1
Speaker 2
Speaker 3
Speaker 4
Speaker 5

5x2=10 marks

4 Progress Check

- 3 **11.5.2** Fill in: depict, facilitate, adopt, excavate, stimulate, complement, accomplish, navigate, rely, evolve.
- The obvious limitation of sundials is that they on sunlight to work.
 - They may discover the remains of ancient timekeeping devices when they the ruins.
 - Giving a summary at the end of a presentation can understanding of the topics covered.
 - In the past, sailors used the stars to their way across the sea.
 - Timekeeping devices have changed so much over time - who knows how they will in the future?
 - These beautiful illustrations perfectly the way the ancient Egyptians used the merkhēt.
 - A timekeeping app can't plan your every move, but it can an already organised schedule.
 - When did the Roman Empire a twelve-month calendar?
 - The Egyptians were one of the first civilisations to keep track of time. They were able to this using timekeeping devices.
 - She showed us a short video at the beginning of her presentation to the audience's interest.

10x2=20 marks

- 4 **11.4.6** Rewrite the following sentences as cleft sentences.

- Berik has been rehearsing his presentation all day. All
- We gave the presentation at the Atakent International Exhibition Centre. The place
- Professor Jameson wanted to explain how the system worked. The first thing
- Was Ulan's presentation about energy storage? Was it
- You should use charts and infographics in your presentations. Charts and infographics
- Aizhan enjoys designing websites most of all. What

6x3=18 marks

- 5 **11.6.7** Put the verbs in brackets into the correct present/past perfect tense.

- I've got a headache because I (look) at my computer screen all day.
- The sundial (use) for around 1,500 years by the time the clepsydra was invented.
- (you/finish) your project yet?
- Assel was tired because she (travel) all day.
- (Michael/train) in public speaking before he gave his presentation?
- I'm proud to say that the restoration of the astronomical clock, which we (work) on for 7 years, is now complete.
- How long (you/wait) before the train arrived?
- The slideshow turned out to be a disaster because the equipment (not/check) for weeks.

8x2=16 marks

Writing

- 6 **11.5.1** **11.5.2** **11.5.5** Read the rubric and do the task.

You have had a class discussion about using slides in presentations. Now your teacher has asked you to write an essay discussing the advantages and disadvantages of using them. Write your **essay**, justifying your arguments (140-190 words).

20 marks

Total: 100 marks

Check your Progress

- talk and write about the history of timekeeping devices and the calendar _____
- talk and write about slideshow presentations/ give slideshow presentations _____
- use the present/past perfect (active/passive voice) _____
- ask for/give/respond to advice _____
- write a for-and-against essay _____

GOOD ✓ VERY GOOD // EXCELLENT ///

Module 5

Work & Inventions

Vocabulary: office personalities, work, success in business, special talents, inventions, big ideas
Grammar: verb complementation, clauses of concession, multi-word verbs, pre- and post-modifying structures, adjective complements
Everyday English: commenting on/ reacting to an article
Phrasal verbs: verbs with over
Writing: a letter to the editor
Culture Corner: British Inventions - Made in the UK
Curricular (PSHE): How to Stand out from the Crowd



Vocabulary

Investigating the world of work

- 1 [11.4.1] [11.4.3] Look at the pictures and read what each person says. Then match each person (1-6) to the office personality that best describes them (A-F).

Listening

- 2 [11.2.2] [11.2.3] [11.3.6] [11.3.7] [11.3.7]
 Listen and say what benefits each person (1-3) says their job offers. Choose from the following: working environment, salary/wage, level of responsibility, supervisor, creativity, general job satisfaction, job recognition, future prospects, collaborative work environment, good job security, extra benefits.
 Tell the class.

1 Don't worry, I'll read the report and make a new plan with the team.

2 Right today's tasks! Anna, on reports. Paul, see client. James, calculate the figures! Go!

3 There's no need to rush myself. I can do it tomorrow!

4 Don't worry, I finished the project at home last night! My career is my top priority.

5 I'm doing the report now. I've got jill on the other line giving the figures and I'm setting up the presentation, too.

6 Great idea, boss!

A the adaptor
 B the workaholic
 C the procrastinator
 D the multitasker
 E the delegator
 F the yes-man

OVER TO YOU!

- [11.1.5] [11.1.6] [11.1.8] [11.1.9] [11.3.3] [11.3.6]
 [11.3.7] [11.5.2] [11.5.3] [11.5.6] [11.6.1] [11.6.5]
- What is important for you in a career? Think about the factors in Ex. 2.
 - [ICT] How do you think people value employee benefits differently around the world? Do some online research. Tell the class. Use your classmates' feedback to improve any areas of weakness.

5a Considering success in business

YOUNG ENTREPRENEURS

Making Their Mark

A growing number of Internet-savvy 20-somethings are starting their own businesses and forging their own paths in life. Here are a few prime examples ...



A ARMAN TOSKANBAYEV, Builder of multiple businesses

Arman Toskanbayev has a luxurious home with collectible artwork on the walls and a beautiful grand piano, but he didn't grow up in a wealthy family. "I did not have any talents," he says, citing the fact that his academic scores at school were relatively low, and he showed no particular skill in sports lessons. Arman, however, believed everyone has a talent, and all he had to do was find his. He enjoyed learning about computers and began fixing them, first at school, and then for family and friends. People paid him for his work and, when he was just 16, he opened a brick-and-mortar store in his local town. In one summer, he earned his first million tenge! Arman didn't stop at computers, though. In 2014, he branched out into agriculture, opening New Green Technology and bringing hydroponics to Kazakhstan – a method that allows people to grow plants indoors without soil. Two years later, he started a joint venture, Zerlis, with an aeroponics expert. The company provides systems for growing herbs and vegetables that are usually imported to Kazakhstan at great financial and



environmental cost. Arman also owns two other companies and has created a scheme called the Youth Business Association to support other young entrepreneurs. "Many people think that you need capital to start a business," he says. "I myself, no matter what business I created, I never asked my parents nor anyone else for money. Every time I created it from scratch." Arman's story is an inspiration to all aspiring entrepreneurs.

Reading & Listening

- 1 **11.2.4** **11.4.1** **11.4.2** Look at the title and subheadings of the texts. Which of these young entrepreneurs stands out for you and why?
 ☞ Listen and read the text to find out more about them.

- 2 **11.4.1** **11.4.2** **11.4.3** Read again and, for questions 1-7, choose from the people (A-C). Justify your answers.

According to the texts, which person received funding from people close to them?
 has started a new business in the same field as their first?
 did not excel in school?
 has a business as a result of something not making sense?
 implies wanting to challenge people's ingrained attitudes?
 did not rely on financial investments from others to start their company?
 is not intimidated by the lack of financial rewards from their enterprise?

 1

 2

 3

 4

 5

 6

 7

Check these words

brick-and-mortar store, branch out (into) sth, hydroponics, joint venture, jumble, entrepreneurship, carbon neutral, fleet, conversion, naively, fiver

- 3 a) **11.4.5** Find the antonyms of the following words in the texts.

Text A: unambitious, poverty-stricken

Text B: order, loss

Text C: immovable, increasing

- b) **11.4.5** In pairs, explain the meaning of the highlighted phrases in text B. You can use your dictionary.

B NICKO WILLIAMSON, Founder of Climate Cars

Nicko Williamson's office is in a state of organised chaos. The shelves are filled with an assorted jumble of stuff – two smartphones, a financial newspaper, and a novel which he has yet to read. 'No time,' he explains – 'A heavy workload is the nature of entrepreneurship.' It's no surprise that Williamson is run off his feet. In 2007, he launched the carbon-neutral taxi company, Climate Cars, after he graduated in modern history from Bristol University. When he finally sold the company in 2015, the business ran a fleet of more than 100 cars and generated more than £1m in profit.

He had the idea for Climate Cars after driving past a garage in Bristol that offered environmentally-friendly car conversions. 'It's easy to get stuck in a rut and not see the bigger picture. I always loved cars but felt guilty about loving them,' admits Williamson, whose great-grandfather, William Watson, was a racing-car driver. 'Then I thought: why not make taxis greener?' He sought investment from his family and friends and put together a business plan while writing his dissertation. He has since started another company called Weflex. What are his ambitions for the future? Probably to grow this business into one of the biggest car companies in London.

C EDWIN BRONI-MENSAH, Creator of GiveMeTap

Edwin Broni-Mensah, you could argue, is a scholar or a philanthropist whose scheme is either naively idealistic, brilliant, or both. It was through playing squash at university that Broni-Mensah came up with GiveMeTap. While studying for his PhD, sport was his sanctuary, yet something didn't add up: 'Tap water is free and portable, but I was spending a fiver a day on bottled water.' The concept of GiveMeTap was born, which works like this: you purchase a blue bottle made from recycled aluminium from his website and take it into any café which has signed up to the scheme. Your bottle is then filled with tap water for free, thus reducing the wastage, helping communities in Africa install clean water pumps (10% of the profits go towards this) and saving you money. It may seem ludicrous to invest several years of education into a non-profit scheme. 'All my friends are bankers and I'm their poor mate. But it's my choice,' he laughs. How did he manage to launch the project while also completing his PhD? 'I follow Parkinson's Law: work expands so as to fill the time available for its completion.' Broni-Mensah thinks our peculiar obsession with buying plastic bottles is little more than cultural conditioning. 'We're too used to ask for free water in the same way we feel the need to buy crisps to use a café's toilet,' he says.

**Grammar**

see
pp. GR14-
GR15

Verb complementation

- 4 **11.6.5** Look at the underlined examples in the texts. Identify the type of verb complementation pattern. Check in the Grammar Reference section.

Speaking

- 5 **11.1.9 11.3.3** **THINK!** What do you think are the advantages and disadvantages of each person's job in the texts? Discuss in pairs.

- 6 a) **11.1.8 11.1.9 11.3.6 11.3.7** What was each person's inspiration for starting their business? Explain in your own words.

- b) **11.1.9 11.3.6 11.3.7 11.5.8** **THINK!** Choose the person in the text that impressed you most. What is impressive about him? In your opinion, what is the secret of his success? Tell the class.

Writing & Speaking

- 7 **11.4.8 11.5.2 11.5.3 11.5.6 11.5.8** **ICT** Use the Internet to find information about another successful young entrepreneur from your country or another country. Take notes and write a text about him/her. Present the person to the class.

5b Special talents & inventions

Vocabulary

- 1 **11.3.2** Fill in: studied, drew, designed, painted, invented, sketched. Which talents did Leonardo da Vinci possess?

1 the Mona Lisa

2 an early flying machine

3 many buildings & bridges

4 plants & animals

5 the anatomy of the human body

6 maps

Check these words

define, concept, be apprenticed to, dissection, proportion, embody, mastery

Reading

- 2 **11.4.1** **11.4.3** Apart from the information in Ex. 1, what do you know about Leonardo da Vinci? What else would you like to know? Write four questions. Read the text to see if you can answer your questions.



The English word *genius* derives from the Latin *ingenium*, meaning 'natural talent'. It is used to describe an individual with remarkable creative and intellectual abilities, and is often applied to great scientists and artists. But there were many who, for many people, defies the concept of genius. This is Leonardo da Vinci, sometimes referred to as 'the most talented man that ever lived'.

The Painter

Da Vinci was born in a small village in Tuscany, Italy in 1452. At the age of 15, he was apprenticed to the artist Andrea del Verrocchio in his Florence workshop. He became a proficient painter and was known in his lifetime as a great artist. Despite the fact that only 15 of his paintings survive to this day, one of them in particular – the *Mona Lisa* – is among the most famous in the world. In 2017, his painting *Salvator Mundi* was bought for \$450.3 million, making it the most expensive work of art ever sold!

The Engineer & Architect

Throughout his life, da Vinci designed many buildings and working machines for industry and transport. He drew very accurate maps and came up with the idea for a brilliant canal system for Florence. A bridge was constructed in Norway based on da Vinci's design. It opened in 2001.

The Scientist

Da Vinci was fascinated by anatomy and was determined to find out how the human body functioned. He

even went so far as to carry out dissections at Santa Maria Nuova Hospital. His sketch, *Vitruvian Man*, shows the perfect proportions of the human body. It is possibly the best-known drawing in the world.

The Inventor

Although da Vinci used 'mirror' writing, his notes were straightforward and concise and he drew detailed illustrations. Because of this, his ideas are clear to us centuries later. In fact, in 2002, scientist Mark Rosheim used da Vinci's design for a 'robotic knight' to build a robot, and it worked! Other ideas sketched by da Vinci include a parachute, a calculator, musical instruments, a bicycle, and several flying machines.

The Renaissance Man

Da Vinci's creations and ideas embodied Renaissance philosophy and he was often regarded by his contemporaries as the definitive 'Renaissance Man' – a term which roughly equates to the modern concept of genius. The Renaissance Man was one who demonstrated that human beings have limitless capabilities, and can achieve excellence across all fields as long as they keep absorbing and seeking knowledge. Leonardo da Vinci's mastery of such diverse areas of study as art, engineering, botany, geology and music show us just how much the human mind is capable of.

Five centuries after da Vinci's death, he is still one of the most fascinating people in history.

3 **11.4.2** Read the text again and mark the sentences T (true), F (false) or DS (doesn't say).

- 1 Da Vinci painted the *Mona Lisa* while working as Andrea del Verrocchio's apprentice.
- 2 *Vitruvian Man* is a sketch based on da Vinci's research into human anatomy.
- 3 The meaning of da Vinci's notes is difficult to comprehend.
- 4 Musical instruments designed by da Vinci are still in use today.
- 5 Da Vinci was never called a 'Renaissance Man' in his lifetime.

4 **11.3.7 11.5.2 11.5.3 11.5.4** Fill in: detailed, seek, intellectual, accurate, dissections, Renaissance. Then use the completed phrases to write sentences based on the text.

- 1 carry out 4 maps
- 2 philosophy 5 illustrations
- 3 capabilities 6 knowledge

5 **11.1.7 11.1.8 11.1.9 11.1.10 11.2.7 11.3.3 11.3.4 11.3.5 11.3.8 11.3.7** **THINK!** Which of da Vinci's achievements impress you the most? Why? Write a few sentences. Tell the class.

Grammar

Clauses of concession - Multi-word verbs

6 **11.6.14** Find examples of clauses of concession and multi-word verbs in the text.

7 a) **11.6.14** Write sentences based on the text. Use: though, but, yet, even though, while.

b) **11.6.14** Fill in: came up with, brought about, did away with, fell back on, got round to. Check the meaning of any unknown phrasal verbs in the Appendix.

- 1 A lot of students were upset when the school Art History lessons.
- 2 I'm afraid I never reading the book about Leonardo da Vinci.
- 3 15th century inventors the concepts for a lot of modern machines.
- 4 When he failed to sell any paintings, he his career in retail to make money.
- 5 Exposure to other cultures was one factor that the Renaissance.

Pre- and Post-modifying noun structures

see p. GR15

8 a) **11.6.1**  Read the summary and underline four pre-modifying and two post-modifying noun structures.

Leonardo da Vinci lived in Italy and France during the Renaissance period. When he was a fourteen-year-old boy, he began a painting apprenticeship at Verrocchio's workshop and became a proficient artist. Only about fifteen of his paintings survive, but the *Mona Lisa*, a picture of a woman with a haunting smile, is probably the most famous work of art in the world.

Da Vinci was sought-after as a artist, advisor and architect to the rich and powerful. In the centuries since his death, however, people have based statues, structures and even robots on da Vinci's designs. Luckily, his ideas have been preserved in his detailed and concise notes. He wrote on loose sheets of paper, but these were later bound into leather notebooks. These are on display at museums in Europe and the USA and are even available to view online.


Even 500 years after his death in 1519, people who come from all over the world think of the name da Vinci as one which is synonymous with invention, innovation and genius.



b) **11.6.1** Match the pre-/post-modifying noun structures you identified in Ex. 7a to their type.

- 1 a prepositional phrase
- 2 a noun ending in -ing
- 3 a measurement
- 4 a relative clause
- 5 one or more nouns together
- 6 a noun to show what something is made of

Listening & Speaking

9 **11.1.1 11.1.2 11.1.5 11.1.6 11.2.2 11.3.7**  Listen to the text. Make notes on each of da Vinci's talents. Present him to the class. Ask for/Give feedback. Evaluate each other's performance.

Writing & Speaking

10 **11.1.8 11.4.8 11.5.1 11.5.2 11.5.3 11.5.4 11.5.6 11.6.3 11.6.5 11.6.14** **ICT** Collect information about another scientist who possessed many talents and left their mark on history. Include: a short biography - studies - achievements - contribution to the world. Present him/her to the class.

5C Big ideas

Comparing, analysing & ranking inventions Reading & Listening

- 1 **11.1.9 11.4.1 11.4.2 11.4.3** A 'bright spark' means an intelligent person. Read the introduction to the text and look at the titles and the pictures. Why do you think each person can be described as a 'bright spark'?

🔊 Listen and read to find out.

Check these words

nanoparticle, tumour, tissue, scrap materials, hammer, evaporation



BRIGHT SPARKS

It isn't just old professors or managing directors with years of experience behind them who have amazing ideas. If you are curious who is currently rocking the world with their bright ideas, meet three young people who know the meaning of inspiration, invention ... and hard work!

A Angela Zhang scientist, California, USA

Angela Zhang had enjoyed reading advanced science papers from a young age, but when she explained to her chemistry teacher that she had been working on a method for curing cancer, her teacher was **stunned**! Angela had had the idea of developing a nanoparticle that would deliver drugs to tumours without destroying the surrounding tissue. She asked if she could do research on her idea in a laboratory at Stanford University. Angela admitted that she found it all a little bit overwhelming at first. "But then I found that it almost became like a puzzle, being able to **decode** something," she added. The results of tests on her discovery have been very **promising**.



C Derreck Kayongo community project leader, Uganda

Has it ever crossed your mind how wasteful it is to use a bar of soap in a hotel only a few times? Well, while staying in a hotel in the USA, Ugandan Derreck Kayongo was very shocked to be told that guests were given new soap every day while 2 million young children were dying every year through lack of hygiene in the developing world. This got him thinking. He wondered if he could recycle the soap for people who needed it. So, in 2009, Derreck started asking hotels if they could donate their used bars of soap that would be otherwise put in the bin. "We **sanitise** them first," he explained, "then heat them at very high temperatures, chill them and cut them into final bars."

It's a very simple process, but a lot of hard work." So far, Derreck's 'Global Soap Project' has provided more than 100,000 bars of soap to nine countries absolutely free!



B Emily Cummins inventor, England

Emily Cummins had loved making things from scrap materials ever since her grandfather gave her a hammer when she was only four years old. Then, one day, Emily came up with a simple, yet brilliant, idea. She designed a **portable**, eco-friendly fridge that had the **potential** to help thousands of people in the developing world. "The simplest method of cooling something can be seen when you look at how we cool biologically – through sweating or evaporation," Emily said. So her fridge is made of two cylinders one inside the other. As water between the cylinders evaporates in the sun, heat is removed from the inner cylinder, enabling food to be kept inside at a cool 6°C. Emily took her design to poor areas of Africa where people called her 'the fridge lady'! Now Emily gives talks encouraging young people to follow their dreams.



- 2 **11.4.2** **11.4.5** Read the text again. For questions 1-8, choose from the people (A-C). Compare with a partner.

Which person:

- had his/her interest encouraged by someone else? **1**
- had an idea that would avoid harming something? **2**
- reacted to something he/she heard? **3**
- compares something to a kind of game? **4**
- passes his/her knowledge & advice onto others? **5**
- based his/her idea on a natural process? **6**
- mentions that something isn't/ wasn't easy? **7** **8**

- 3 **11.4.5** Match the words in bold with their meanings: *likely to be successful, solve, shocked, clean, capability, easily moved*.
- 4 **11.1.8** **11.1.9** **11.1.10** **THINK!** Choose one of the people in the text and think about why you admire them. Why are they successful? How can successful people like this inspire us in our own lives? In a few minutes, write a few sentences about this. Read your sentences to the class.


Grammar

Adjective complements



- 5 a) **11.6.3** Find an example of an adjective complement in text C. What type is it? Check in the Grammar Reference section.
- b) **11.6.3**  Match the two columns.

- | | |
|--|--|
| 1 <input type="checkbox"/> Berik is confused | a to be informed that she had passed the exam. |
| 2 <input type="checkbox"/> We are all impatient | b whether your idea will work. |
| 3 <input type="checkbox"/> Kuntulu was relieved | c why his invention isn't working. |
| 4 <input type="checkbox"/> It's really ingenious | d to fund our research. |
| 5 <input type="checkbox"/> It was generous of you | e to start working on the project. |
| 6 <input type="checkbox"/> I'm doubtful | f what she invented. |

Listening

- 6 **11.2.2** **11.2.4** **11.2.7**  Listen to an interview with a woman about her business. For questions 1-5, choose the best answer (A, B or C).
- How did Alice's art teachers influence her success?
 - by encouraging creative thinking
 - by giving her some good ideas
 - by helping her see what she was good at
 - What does Alice say about getting her business started?
 - She lacked some skills needed.
 - It was harder than expected.
 - She got a lot of support.
 - Alice was surprised by
 - how people found the website.
 - how quickly the business became successful.
 - how difficult it was to attract customers.
 - Alice wants to support a charity because
 - ethical businesses are more successful.
 - she wants to give back to society.
 - she has a personal connection to it.
 - When asked about her future plans, Alice gives the impression that
 - she doesn't really have any yet.
 - she would rather keep them a secret.
 - she hopes things will slow down.

Speaking & Writing

- 7 a) **11.1.1** **11.1.7** **11.1.9** **11.1.10** **11.3.3** **11.3.4** **11.3.5** **11.3.6** **11.3.7**  **THINK!** Compare and contrast the ideas in the text in Ex. 1. Rank them in order of importance. Justify your opinion. Discuss in groups.
- b) **11.1.9** **11.1.10** **11.3.3** **11.3.4** **11.3.5** **11.3.7**  **THINK!** Be inventors for one day! In groups, try to invent your own device that could deal with a major problem. Write a few sentences about it. Present it to the class.
- 8 **11.4.8** **11.5.2** **11.5.3** **11.5.4** **11.6.5** **11.6.14** **ICT** Collect information about another invention by a young person in your country or another country. Write about: *type of invention, inspiration, difficulties, result*. Present him/her to the class.

5d Writing

Letters to the editor

Writing Tip

Letters to the editor are written to express your opinion about a topic that is of interest to the general public and may appear in an editorial, an article in a newspaper/magazine or in an announcement by the local council. They are written in a formal style with a polite, impersonal tone.

Register

Formal Style

Greeting: Dear Sir/Madam, – Dear Mr/Ms + surname,

- **serious impersonal style** e.g. *I would like to congratulate you on your interesting article.* (instead of: *I'd like ...*)
 - **advanced vocabulary** e.g. *I am writing to voice an opinion on ...* (instead of: *I want to say ...*)
 - **no colloquial English** e.g. *I hope my comments will be taken into consideration.* (instead of: *Please think about what I said.*)
 - **frequent use of passive voice** e.g. *Residents will be affected ...* (instead of: *This will affect residents.*)
 - **formal linking words/phrases** (*consequently, however, therefore, etc*) e.g. *I strongly believe that apprenticeship should be introduced for people who are not academically inclined. Consequently, they have the opportunity to learn a trade.*
- Sign off:** Yours faithfully, (when we do not know the name of the recipient)/Yours sincerely, (when we know the name of the recipient) + your full name

Rubric analysis

- 1 **11.5.7** Read the rubric and underline the key words. Then answer the questions.

You read this extract from an article in a science magazine.

Have job fairs become obsolete in the field of science? According to some experts, job fairs are dead. With recruiters now favouring online applications, job fairs are becoming a waste of time.

You disagree with the negative opinions expressed by the journalist, and decide to write a letter to the editor, explaining your views on the points raised in the article and giving reasons for your opinions. Write your letter (150-200 words).

- 1 Who is going to read your letter?
- 2 Why are you writing it?
- 3 What style will you write in?
- 4 How many main body paragraphs will you include in your letter? What will each be about?

- 2 **11.4.5 11.5.4** Read the model. The underlined phrases (1-8) are in the wrong register. Replace them with their correct formal equivalents (A-H).

Dear Sir/Madam,

1) I thought I'd drop you a line about the article about job fairs becoming obsolete that was recently published in your science magazine. **2)** I think you're wrong about the points that were raised in it.

Firstly, job fairs offer candidates a chance to meet potential employers face-to-face. These interactions allow employers to assess the candidates' personalities as well as experience and job skills. **3)** So you see, it's easier to get a job interview.

4) Now, while we're on the subject of job fairs, the candidates' CVs are promptly assessed by potential employers at a fair. This means there is an immediate response which does not occur when you apply for a job online. Therefore, candidates are able to improve their CVs based on employers' feedback.

Lastly, job fairs are a good opportunity for candidates to build their self-confidence. For instance, interacting with managers in the informal setting of the fair helps them to become more comfortable with this type of communication. **5)** So they'll feel more chilled out at the actual interview and make a good impression.

6) In the end, it's obvious to me that job fairs are great as they allow candidates to meet potential employers, receive feedback on their CVs and build their confidence all in one setting. **7)** Can't wait to see what everyone else thinks about it.

8) Thanks a million,

Mary Harper

- A As a result, candidates increase their chances of getting
- B I look forward to reading others' opinions on this issue.
- C To sum up, I feel that job fairs are extremely productive
- D Consequently, candidates will feel more at ease
- E Yours faithfully,
- F I am writing with regard to
- G Secondly, in the case of job fairs,
- H I strongly disagree with

Commenting on/Reacting to an article

- 3** **11.1.3** **11.1.7** **11.2.7** **11.3.3** **11.3.4** **11.3.5** **11.3.6** **11.3.7**
 What is your opinion on job fairs? Tell the class. Support your opinion with examples and justifications. You can use ideas from the letter in Ex. 2 as well as your own ideas and the Useful Language below.

Commenting	Justifying
<ul style="list-style-type: none"> I'm sure (that) ... Personally, ... It's obvious that ... I don't think (that) ... 	<ul style="list-style-type: none"> I say this because ... The reason I say this ... Studies/The evidence suggests ...
Giving examples	
<ul style="list-style-type: none"> For instance/For example, ... By way of an example, ... Here are just a few examples ... A case in point is ... Considering the fact that ... 	

Your turn

- 4** **11.5.7** Read the rubric and underline the key words. Then answer the questions.

You read this extract from an article in a science magazine.

Do employment agencies have a future? Some experts believe that employment agencies are in decline. With jobseekers now turning to job boards and social networking, employment agencies have become a waste of time.

You disagree with the negative opinions expressed by the journalist and decide to write a letter to the editor explaining your views on the points raised in the article and giving reasons for your opinions. Write your letter 150-200 words.

- Who are you writing to?
- What style will you write in and why?
- Which greeting/ending will you use and why?

A To the Editor,
 Kind regards,

B Dear Sir/Madam,
 Yours faithfully,

C Dear Mr/Mrs Editor,
 Take care,

- 5** **11.5.5** Match the viewpoints (1-3) to the examples/results (a-c). Then expand them to make complete sentences. Use phrases from the Useful Language box.

1 save time

2 increased exposure

3 constructive feedback

- advice about applications and interviews/improve performance
- search job market for most suitable positions/focus on other parts of application process
- agencies have direct line to potential employers/make sure application has not been overlooked

- 6** **11.1.4** **11.1.5** **11.1.10** **11.4.8** **11.5.2** **11.5.3** **11.5.4** **11.5.5**
11.5.6 **11.5.8** **11.6.3** **11.6.5** **11.6.14** Use the plan and your answers in Ex. 5 to write your letter in response to the rubric in Ex. 4. Use phrases from the Useful Language box and the appropriate style and register. Swap papers. Evaluate your partner's piece of writing.

Useful language

Opening comments: I am writing in response to/with regard to/concerning .../ I am writing to express my views on ...

Expressing opinion: In my opinion, .../ I (do not) think/ believe/feel .../ I am (totally) opposed to/in favour of .../ I strongly agree/disagree with ...

Listing points: Firstly,/To start with,/In the first place,/ Secondly,/Finally/Lastly, ...

Adding points: In addition,/Furthermore,/Moreover, etc.

Giving examples: For example/For instance/In particular,

Presenting results: Consequently,/Therefore,/As a result,/

This means that .../This way/That way,

Summarising: In conclusion,/In summary,/All points considered,/To sum up,

Closing comments: Thank you for considering my views./ I hope you take my views into account .../ Please do not hesitate to contact me .../ I look forward to hearing from ...

Plan

Para 1: Dear Sir/Madam, reason for writing, state the topic & your opinion

Paras 2, 3, 4: viewpoints with examples/reasons/ results

Para 5: summarise points & restate opinion
 Yours faithfully,
 (your full name)

5e Culture Corner



Made in the UK

The British economy relies heavily on the service sector. Manufacturing hasn't been a major part of the economy 1) _____ the mid-twentieth century. There is one thing the British are good at producing, however: ideas! Check out our timeline of great British inventions and see for yourself.

- 1 **11.1.8 11.1.9 11.1.10 11.4.3** Look at the pictures and the headings. What do you know about these British inventions? What else would you like to know? Write down two questions. Read the text to check if you can answer them.

- 2 **11.4.2** Read again and fill in gaps (1-14) with an appropriate word.

🔊 Listen to check.

- 3 **11.2.7 11.3.3 11.3.4 11.3.5 11.3.6**
11.3.7 THINK! 🗣️ Which invention impressed you the most? Which one do you think is the most important one? Why? Rank these inventions in order of importance. Discuss in groups. Tell the class.

- 4 **11.1.1 11.1.7 11.1.9 11.1.10 11.3.3**
11.3.6 11.3.7 THINK! Can you think of another important invention? Write a few sentences about it. Present it to the class.

- 5 **11.1.6 11.1.8 11.4.8 11.5.1 11.5.2**
11.5.4 11.6.5 11.6.14 ICT Find information about important scientists/ inventors from your country or another country. Prepare a poster with a timeline of them. Include: name of scientist/inventor, type of invention, when/how it was invented, how it is used today and any interesting facts. You can use pictures to illustrate your poster.

Check these words

composite, obscure, fund, dispense cash



1668 Reflecting Telescope

Prior to the mid-17th century, telescopes had magnified distant objects 2) _____ using lenses to bend light. This caused the white light to separate into its composite colours and the resulting coloured bands consequently obscured vision. In 1668, Sir Isaac Newton invented the reflecting telescope, which used mirrors 3) _____ of lenses. His design solved the problem and is still popular with amateur astronomy enthusiasts today.



1876 Telephone

Alexander Graham Bell is credited with many inventions, but 4) _____ most famous is probably the telephone. He worked on the concept with the American Thomas Watson, and on 10th March 1876, the two men 5) _____ the first telephone call in history.



1885 Bicycle

In the 1870s, British people often rode penny-farthings about the town. 6) _____ was a bicycle with one very large front wheel and a much smaller back wheel, and 7) _____ design meant it was very dangerous. In 1885, John Kemp Starley invented the Rover Safety Bicycle, with two similar-sized wheels and a chain system to turn the wheels. His design hasn't changed much in the 8) _____ 130 years!



1937 Jet engine

Frank Whittle was just 22 when he invented the jet engine in 1930. Unfortunately, it was 9) _____ a wild idea that he couldn't find anyone to fund his project until seven years later! The first test-flight of an aeroplane powered by a jet engine 10) _____ place in 1941, and nowadays jet engines can be found in high-speed cars, factory and power-generation machinery, in 11) _____ to aircraft.



1967 ATM

In 1967, Scottish engineer James Goodfellow designed a machine 12) _____ dispensed cash without the need to queue up at the counter inside the bank. The invention of the ATM is usually credited to another British man, John Shepherd-Barton, however, as his machine 13) _____ installed a month before Goodfellow's. But Shepherd-Barton's ATM required customers to obtain a paper cheque with a unique number on it from the counter in 14) _____ to use the machine, whereas Goodfellow's invention used a plastic card with a four-digit PIN. It is clear which man's machine most closely resembles our current ATMs.

- 1 **11.1.9 11.2.4 11.4.3** Read the title of the text and the subheadings. What do you think it is about? What are some ways of 'standing out from the crowd' when applying for jobs?
 (L) Listen and read to find out.

- 2 **11.4.1** According to the article, which of the following advice is true? Justify your answers.
- 1 Use the same CV when applying for different jobs.
 - 2 Use popular business expressions when filling in a job application.
 - 3 Back up claims you make on a job application with practical examples.
 - 4 Job hopefuls could benefit from doing some work for free.
 - 5 You should think of yourself as a product which needs promoting.

- 3 **11.3.3 11.3.6 11.3.7**  Make notes on the text, then use them to tell your partner how to stand out from the crowd when looking for a job.

- 4 **11.4.8 11.5.2 11.5.3 11.5.4 11.5.6**
11.5.8 11.6.5  **ICT**
 Do some research on more ways to stand out from the crowd when job-hunting. Present your information to the class.

Check the words

trawl, tailor, jargon, clichéd, branding, perseverance, elusive



You're trawling through job websites, and tailoring your applications to each job, but you still aren't getting interviews. So when competition is so fierce, how do you stand out from the crowd?

Grab the employer's attention Make sure you get the basics right first. Research the sections you should cover on your CV, for example, making sure it's clearly and carefully presented and tailoring the CV to the role, then make sure it's interesting. Avoid using business jargon and clichéd wording on a CV or letter of application – I am passionate about thinking outside of the box, for instance – or long sentences. Instead, use vibrant but down-to-earth vocabulary with concrete examples of how you meet the criteria.

Prove yourself If you're sending applications and getting nowhere, maybe sitting in front of your computer all day isn't always the best use of your time. Journalism students, for instance, could try landing some work experience with a TV news channel, which would look impressive on a CV. Similarly, if you're aiming for a creative role in PR, advertising, website design or copywriting, why not showcase your work on your own website?

Be marketing savvy Companies spend a lot of money on branding, so it makes sense to focus on marketing yourself when hunting for a job. What does this mean? Well, it's worth using business social networks as potential employers often look for you here before offering you an interview.

Have a good attitude Above all, you'll need perseverance, patience and a positive outlook while waiting for those elusive interviews to roll in. Expect it to be tough, don't lose heart when you receive rejections and keep focused on your ultimate goal. Your attitude will shine through and you'll get a job in no time!

5 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- Our ancestors' fascination with the stars is something that has into modern times. (continued to exist)
- I'm sure their argument will soon. (end)
- He's hoping to the company director with his latest proposal. (persuade)
- When Alua retires, she will her company to her son. (give legally)
- It took Daniel some time to the failure of his first business venture. (recover from)
- I was hoping to my notes one more time before the test tomorrow. (look at)

- 2 **11.6.13** Choose the correct preposition.

- Nurlan has a lot of skill in/at languages.
- She built her business off/from scratch without any help.
- Benjamin Franklin was apprentice to/with a printer long before he became a famous polymath.
- The grade you will be awarded for this essay equates at/to 30% of your final grade for the course.

Collocations

- 3 **11.5.2** Fill in: aspiring, collaborative, joint, potential.

- | | |
|----------------------|--------------------------|
| 1 employer | 3 venture |
| 2 entrepreneur | 4 work environment |

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- When we raise the temperature, the rate of increases. (EVAPORATE)
- I'm interested in doing a on my car to make it more environmentally friendly. (CONVERT)
- Using a plastic bag once and throwing it away is very (WASTE)
- Don't give up - you can achieve anything with and hard work. (PERSEVERE)

Words often confused

- 5 **11.5.2** Choose the correct word.

- Very few wall paintings from the Mayan civilisation survive/exist to this day.
- Your ideas won't always be popular, so it's important that you learn how to deal with denial/rejection from other people.
- If you study hard and believe in yourself, you can achieve/gain excellence in any field.
- The sketch Vitruvian Man shows the perfect proportions/dimensions of a human body.

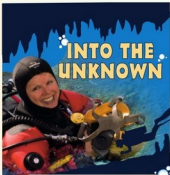


Kazakhstan in Action!

Read and fill in the correct word.

- Students from Nazarbayev University (NU) wowed spectators 1) the Shell Eco-Marathon in Singapore in 2018. 2) invention, an ultra-efficient electric car, passed all inspections 3) energy conservation and road craft, and even managed to take 13th place out of 4) 120 teams from 18 different countries in Asia!
- NU students have 5) given the chance to practise interview techniques, thanks to events organised 6) the university's Career and Advertising Centre. Through simulated interviews, students 7) the opportunity

- to receive personalised feedback and advice 8) will serve them in 9) adult lives. NU 10) even invited representatives 11) real companies to create a truly realistic experience.
- One young Kazakh student has impressed everyone 12) an innovative and original invention. Zhalsulan Boranbai built a robot 13) is capable 14) removing debris from beaches and coastlines. 15) fact, Zhalsulan's creation has 16) him 2nd place at the city level of the 'Zerde' republican competition.



INTO THE UNKNOWN

Jill Heinerth grew up watching the Apollo space missions on TV, dreaming of becoming an astronaut. Life, though, took her in the opposite direction. Whereas astronauts rocket into space, Jill plunges into the ocean depths as one of the world's top cave divers. **1** She spent 21 hours underwater to get the world record for distance travelled underground, and became the first woman to cave dive in the Antarctic.

It was that expedition to the Antarctic in 2000 that really made Jill's name. She was heading to B-15, the largest iceberg on the planet (about half the size of Jamaica) to explore the caves in it, despite not knowing if there actually were any! **2** During the dive any disturbance, even a few air bubbles, could cause the cave to collapse, so the threat of disaster was always there.

At one point, Jill felt a movement in the ice that felt like an earthquake. She later found out that a piece of ice had **crashed** into the cave's entrance, and would have killed her had she been near. **3** Just two hours later, the iceberg shattered completely.

These kinds of incidents would put most divers off for life, but Jill freely embraces her fear. **4** As she puts it, "If you don't chase fear, you'll be running away from it your whole life."

Although she **hasn't** made it into space yet, her work may affect future space missions. "I was experimenting with a 3D mapping device that cost almost £470 million. **5** It seems the girl who dreamt of the stars and wound up in the depths may have found the best of both worlds."

Progress Check 5

Reading

- 1** **11.47** Read the text and choose from the sentences A-F the one which best fits each gap (1-5). There is **one** extra sentence.
- A** On her final dive, Jill and her partner became trapped by strong currents, only managing to pull themselves out using small handholds in the ice wall.
- B** One of the reasons that Jill is brave enough to face such dangerous expeditions is her confidence in technology.
- C** She has had her stunning photos published worldwide and won awards for her documentaries, but she's also a record breaker.
- D** One day NASA hopes to send this to the underwater caves of Europa, one of the moons of Jupiter," Jill says.
- E** To her, it's an important part of life.
- F** If that wasn't a big enough leap of faith, the iceberg had just broken away from the Ross Ice Shelf and was moving at the time. 5x2=15 marks

Listening

- 2** **11.22-11.24** You will hear part of an interview in which a student called Katerina Philips is discussing her work experience. For questions 1-5, choose the answer (A, B or C).
- 1** How did Katy learn about the position?
A from her professors
B while visiting the farm
C while working for another ice cream company
- 2** What was Katy's main reason for choosing the job?
A to take a break
B to make connections in the industry
C to expand her knowledge
- 3** When asked about her role on the farm, Katy
A admits that she had a lot to learn.
B explains the benefits of her assortment of tasks.
C emphasises her impact on the company.
- 4** Regarding the effect of her experience, Katy says she
A found it less important than her classes.
B realised that it's important to study theory.
C gained an insight into what employers want.
- 5** Katy advises other students looking for work experience to
A ensure that they have a good time.
B decide how little they are willing to work for.
C consider working for free. 5x2=15 marks

5 Progress Check

- 3 **11.5.2** Fill in: *decoded, obscured, sanitised, achieved, imported, tailored, sought, invested, embodied, bent*.
- Before Joseph Lister raised awareness about bacteria, medical equipment wasn't
 - I my CV to fit the job description by removing irrelevant details.
 - Saniya ten years of work experience into starting her own web design company.
 - They secret messages using a special program.
 - To invent telescopes, scientists used lenses that light.
 - Have you investment from local businesses for your project?
 - His business model his values and ideas.
 - We couldn't see the mountains because the fog our vision.
 - Tim Berners-Lee excellence in the field of computer science when he invented the World Wide Web.
 - A lot of electronics are into Kazakhstan every year.

10x2=20 marks

- 4 a) **11.6.3 11.6.5** Match the columns to form sentences.

1	Could you speak	a	whether his choice was the right one.
2	He insisted	b	to see their results.
3	They are anxious	c	telling her about my research.
4	Rustem is unsure	d	louder, please?
5	I regret	e	that I apply for the job.

5x2=10 marks

- b) **11.6.3 11.6.5** Match the sentences (1-5) in Ex. 4a to the type of complementation they show.

A	verb complement (verb + clause)
B	adjective complement (adjective + infinitive phrase)
C	verb complement (verb + -ing phrase)
D	verb complement (verb + adverb)
E	adjective complement (adjective + noun clause)

5x2=10 marks

- 5 **11.6.1** Read the text and underline three pre-modifying and two post-modifying noun structures.

Hi Ben,

Sorry I haven't been in touch lately. I'm having a five-minute break now, but things have been crazy in the university lab! We've had so much equipment delivered in the last few days, including new benches and an NIR spectrometer which is linked to a tablet. Unfortunately, I've been given a tablet with pre-installed apps and they're causing problems with the software. It's lucky that I took that programming course with you last summer! Hope everything is going well for you.

Call you soon,
Rishat

5x2=10 marks

Writing

- 6 **11.5.2 11.5.3 11.5.4 11.5.5 11.5.8 11.5.7 11.5.8 11.5.9** Read the rubric and write your letter.

You read this extract from an article in the careers section of a news website.

Are conventional job interviews outdated? Some experts have claimed that they are in decline. With the rise of communication technology and the Internet, it seems likely that face-to-face interviews will soon be a thing of the past.

You disagree with the negative opinions expressed by the journalist and decide to write a letter to the editor. Explain your views on the points raised in the article and give reasons for your opinions. Write your letter (150-200 words).

20 marks

Total: 100 marks

Check your Progress

- talk and write about the world of work (office personalities/benefits), success in business, special talents, inventions _____
- compare, analyse and rank inventions _____
- design my own invention _____
- use verb complementation _____
- use clauses of concession and multi-word verbs _____
- use pre- and post-modifying noun structures _____
- use adjective complements _____
- comment/react to an article _____
- write a letter to the editor _____

GOOD ✓ VERY GOOD ✓✓ EXCELLENT ✓✓✓

Module 6

STEM



Vocabulary: STEM, intelligent energy storage, energy storage solutions, analysing academic language

Grammar: verb complementation, present/past tenses, future tenses, word formation (affixes – prefixes and suffixes)

Everyday English: exchanging views – discussing controversial issues (giving reasons – highlighting – introducing an opposing point)

Phrasal verbs: verbs with *in*
Writing: public speaking – giving a speech/presentation

Culture Corner: The Massachusetts Institute of Technology (MIT)

Curricular (Physics): Types of Energy

Vocabulary

1 **11.3.5 11.3.7** What do you know about STEM? Which academic subjects/fields does it include? Tell the class.

2 **11.5.2** Read the text. Fill in: developer, engineer, science, advisor, network.
 Listen and check.

3 **11.1.2 11.2.1 11.2.7 11.2.8 11.3.1 11.3.6 11.3.7 11.4.3 11.5.1 11.5.2** Read the text again. In pairs, present STEM to the class including the information in the pie chart. Evaluate other students' performance.

4 **11.1.9 11.4.9 11.3.2 11.3.5** **THINK!** Which of these STEM careers are the most popular ones in your country/around the world? Discuss in pairs. Tell the class.



STEM is part of our modern world. Every time you get in a car, enter a building or pick up a smartphone, you are using the product of countless people's STEM education: the knowledge of science, technology, engineering and mathematics.

Science helps us understand the world around us and create new ideas about it. **Technology** is the product of our new ideas.

Engineering is the way we develop our ideas into something tangible.

Mathematics is at the core of science, technology and engineering.

Who works in STEM?

Science

- chemist
- geologist
- forensic 1)

Technology

- web 2)
- computer 3)
- IT manager

Engineering

- architect
- surveyor
- industrial 4)

Maths

- financial 5)
- accountant
- statistician

Employment in STEM Careers



Computer occupations	45%
Engineers, architects, surveyors and cartographers	29%
STEM management	6%
STEM sales	5%
Scientists and science technicians	10%
College and university teachers	3%
Mathematical occupations	2%

Source: US Bureau of Labor Statistics

Why choose a STEM career?

- Employment in STEM professions has grown 79% since 1990 in the USA.
- STEM is the future: a report by the Australian Industry Group estimates that 75% of future careers are going to require STEM skills.

OVER TO YOU!

11.1.9 11.3.2 11.3.3 11.3.4 11.3.5 11.5.1 11.5.6 11.6.9

Do a survey. Ask some of your classmates which STEM career(s) they would be interested in and why. What about you? Present your findings to the class.

6a Intelligent Energy Storage



Vocabulary

- 1 **THINK!** Read the list of renewable/non-renewable energy sources below. What is the difference between renewable and non-renewable energy sources? Tell the class.

Energy sources

- Renewable:** • solar power • wind power • hydro(electric) power • geothermal energy • wave power • biomass • biofuels • biogas
- Non-Renewable:** • coal • petroleum • natural gas

- 2 **THINK!** Look at the picture. Which types of renewable energy from Ex. 1 do wind turbines and photovoltaic cells use? How are the other renewable energy sources from Ex. 1 produced? Discuss in groups. Tell the class.

Listening & Reading

- 3 Read the definition. Have you ever heard of 'energy storage' before? What (else) would you like to know about it? Write down two questions.
- 🔊 Listen to the text to check if you can answer your questions.

energy storage (enɜrʒi stɔ:rdʒ) = the capture of energy generated and kept for use at a later time. Energy storage is often used with renewable energy sources. It can also be attached to a power grid and can store surplus energy at times of low demand and release energy into the grid at times of high demand.

Check these words

decarbonisation, decentralisation, grid, fluctuate, intermittent, outweigh

The Energy Storage Revolution



Two centuries ago, Italian scientist Alessandro Volta had already discovered how to generate electricity, but the process has evolved over the years. With new ways to generate electricity come new challenges.

Decarbonisation & Decentralisation

Countries around the world are committing to reducing their carbon emissions, and ordinary people are waking up to the danger of climate change. From an age of power plants running on fossil fuels, we are moving into an era of renewable energy, where electricity is generated by wind, water and solar power. Some of this electricity will come from massive offshore wind farms. However, much will come from homes and businesses with their own green energy systems. These won't be autonomous, but will be connected to the grid, requiring that energy is not only delivered to a property, but can also be taken from it. In addition, supply as well as demand will fluctuate with weather, seasons and, in terms of solar power, over every 24-hour period. Wind and the sun's energy are both intermittent, and so a system is required that is capable of storing energy when production outweighs demand, and then delivering that stored energy when there is a shortfall in production.

Storage

High-capacity storage is imperative if we are to maintain a reliable electricity supply for the world's citizens. Currently, 95% of global energy storage is in pumped hydroelectric facilities. Despite being the oldest form of energy storage technology, they are still efficient today. However, each one needs two large reservoirs, one higher than the other, and so can only be constructed in specific locations. This gives rise to problems resulting from power having to be transferred over long distances. So what is the alternative?

There is an option for local energy storage that can be produced in various sizes, from a matter of volts to multi-megawatt capacity. In fact, we have been using small versions inside our smartphones for years: the lithium-ion battery. It's the ideal candidate as it can both deliver and store energy. It's efficient, returning 90-95% of stored energy, which is more than any other available technology. It's also flexible and able to adjust rapidly to fluctuating supply and demand. What's more, the price of lithium-ion batteries has been falling in recent years as technology develops.

Regulation

The main safety concern with lithium-ion batteries is overheating. This is because delivering energy to a battery causes a chemical reaction, and if energy is delivered too quickly it can cause the system to short circuit or catch fire. This is where smart technology comes in. Programmers have developed intelligent software which will regulate the speed of charging, eliminating the risk of overheating. It will also integrate other energy storage systems, such as the old pumped hydroelectric facilities, with the new lithium-ion batteries to ensure that no energy is wasted, and every home, office and charging station has a constant supply of electricity.

- 4 a) **11.4.2** **11.4.6** Read the text. For questions (1-5), choose the correct answer (A, B, C or D).

- 1 The majority of electricity in years to come will be generated by
 A offshore wind farms.
 B power plants using renewable energy.
 C burning fossil fuels.
 D residential and commercial buildings.
- 2 Which does the writer NOT consider a challenge?
 A Electricity must be stored away from where it was generated.
 B Renewable energy can't produce sufficient electricity.
 C The amount of energy produced is changeable.
 D Energy must be harvested from, as well as delivered to, properties.

- 3 Pumped hydroelectric facilities
 A are dependent on geography.
 B are no longer in use.
 C don't store energy effectively.
 D are unreliable.

- 4 What is TRUE about lithium-ion batteries?
 A They can store more energy than any other device.
 B They are becoming less affordable.
 C They can cope with varying input and output.
 D They are very small.

- 5 What aspect of lithium-ion batteries is problematic?
 A their incompatibility with pumped hydroelectric storage
 B their inability to regulate energy input
 C their high rates of energy waste
 D their incapability to charge quickly

- b) **11.2.7** **11.4.6** Is the writer in favour of or against energy storage? Justify your answers. Give specific examples from the text.

- 5 **11.4.5** Match the words in bold with their meanings: quantity produced, becoming too warm, is more than, produced, stable, available space, not on land, quantity required, places where water is stored, a network of electricity, change.

Grammar

Verb complementation

- 6 **11.6.5** Look at the underlined words/phrases. Identify the type of verb complementation.

- 1 They have replaced the old wind turbines.
 2 Ryan convinced the board of directors to build a wind farm.
 3 We should stop burning fossil fuels.
 4 He presented his proposal yesterday morning.
 5 Please do not enter. Authorised personnel only.

Present/Past tenses

- 7 **11.4.4** Complete the email using the correct present or past tenses. Give reasons.

Dear Mr Allen,

I 1) _____ (receive) your proposal last week and I 2) _____ (research) your idea for three days now. Smart batteries are actually something I 3) _____ (look into) myself before my company's lithium-ion battery production took off. In fact, prior to our expansion into this field, some of my clients 4) _____ (express) an interest in smart batteries, although I 5) _____ (not/consider) discussing it with the board before I read your proposal. However, now that we 6) _____ (think) of the best way to take our business forward, I 7) _____ (want) to bring it to their attention. Perhaps you'd like to meet and discuss your proposal in person? My schedule is clear tomorrow because I 8) _____ (intend) to go on a trip, but the weather 9) _____ (force) me to cancel it a few hours ago. My secretary 10) _____ (not/arrive) yet, but when he does I'll ask him to call you this afternoon and arrange an appointment. Looking forward to collaborating on this project,
 Yours sincerely,
 Abigail Founder (CED Next Gen Energy Inc.)

Speaking & Writing

- 8 **11.1.2** **11.1.4** **11.2.8** **11.3.2** **11.3.3** **11.3.4** **11.5.2** Write three questions based on the text. Swap papers with your partner. Answer each other's questions. Evaluate each other's answers.

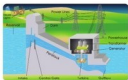
- 9 **11.4.8** **11.5.1** **11.5.2** **11.5.6** **11.5.7** **11.5.9** **11.6.8** **ICT**
 Do some Internet research to find more information about energy storage benefits (e.g. at home). Prepare a short presentation. Present it to the class.

6b Energy Storage Solutions



Vocabulary

- 1 **11.5.2** Label the pictures. Use: hydrogen, batteries, air, tower, hydro. Check in your dictionary.



pumped 1) storage



energy storage
2)



compressed
3) tank



4)



5) energy storage

Reading

- 2 **11.4.3** Read the title and the subheadings of the text. How do these energy storage solutions work? Read the text to find out.

The Future of Energy Storage

Within the next ten years, experts predict that global energy consumption will have almost doubled what it was in 1990. **1** However, to fully replace our current system with 'green' alternatives, we not only need to increase production, but also come up with adequate storage solutions for surplus energy.

Batteries Batteries are something we use in our daily lives. However, the batteries needed to store the energy generated by renewable sources need to have a large capacity and a long life. We use a lot of lithium-ion and lead batteries but scientists have also been working on new Vanadium Redox batteries which could store up to 100 hours of energy.

Pumped hydro storage In places where hydroelectric power can be generated, such as mountainous regions or waterfalls, there is a possibility for pumped hydro storage to be used. As water naturally runs down the slope of a mountain, it can generate electricity. **2** This method of storing energy is great because it has very little impact on the environment.

Hydrogen energy storage How even remote places that are off the grid can have access to an electricity supply. **3** Any excess energy is stored as hydrogen in tanks until it is needed later to generate electrical, thermal or light energy.

Energy storage tower An energy storage tower is an idea from a company in Switzerland. This idea is similar to pumped hydro storage, except it can be done without any water. The tower has a large crane in the centre and a lot of concrete blocks. **4** Then, when energy is required, the kinetic energy from lowering the blocks is transformed into electrical energy. It might sound like a strange idea, but it's as efficient as a lithium-ion battery and is a safe and cheap storage solution.

Compressed air energy storage (CAES) Another solution to store energy without water might be to use air instead. **5** To store energy with this method, ambient air is pumped and compressed into an underground chamber. At times of high demand when energy is required, the pressurised air is heated and expanded through a turbine. This drives a generator and produces electricity.

So which of these energy storage solutions will we be using in the near future? A combination of all of them seems the most likely outcome, with preferences being influenced by geography, location and cost.

Check these words

surplus, capacity, off the grid, concrete blocks, kinetic energy, pressurised, crane

- 3 **11.4.7** Read the text again and choose from the sentences (A-F) the one which fits each gap (1-5). There is one extra sentence.

Listen and check.

- A With surplus energy, the crane builds a tower with the blocks.
 B However, by using a little of the excess energy to return it using a pump, we can then allow it to run back down again, generating yet more electricity.
 C This is because they are not directly connected to the grid.
 D After all, there is plenty of it around.
 E By this time, we will have been generating electricity commercially from renewable sources for more than 50 years.
 F This method works by solar panels on the roof collecting energy from the sun.

- 4 **11.5.2** Fill in: *impact, excess, ambient, access, electricity, consumption, energy, capacity.*
- In the future, I hope we will generate all from renewable sources.
 - Solar panels have very little on the environment.
 - On very windy days, wind turbines often produce surplus
 - This battery has got a large, so it can store a lot of energy.
 - I'm worried about the increase in global energy
 - Is there a way we can store the energy we don't need?
 - It's my hope that one day everyone in the world will have to a clean electricity supply.
 - CAES requires air to be pumped underground.

Grammar

Future tenses (future simple/continuous, future perfect/continuous)

see
pp. GR15-
GR16


- 5 a) **11.6.8** Find examples of all the future tenses in the text. How do we use each tense?
- b) **11.6.8** Put the verbs in brackets into the correct future tense. Give reasons.
- A: By the end of November, Amir (work) on his idea for three years.
B: Yes, it's been very challenging for him, but I'm sure he (not/give up).
 - A: This time next week, we (use) our new solar-powered air conditioning system.
B: It (certainly/make) a difference to our electricity bill!
 - A: Excuse me, sir, but (you/stay) much longer?
B: I (not/leave) the lab until Dr James arrives at 6 o'clock.
 - A: (they/finish) the project by the end of the week?
B: I expect so. By then, they (test) the prototype for almost a month!
 - A: I'm afraid I (not/edit) your paper by tomorrow morning.
B: That's OK. (you/complete) the first chapter by then?

Listening

- 6 **11.2.1 11.2.7 11.2.8** Listen to five experts talking about energy storage solutions. Match speakers (1-5) to their viewpoints (A-F).
- This method of energy storage is less space-efficient than some similar methods.
 - This way of storing energy is almost entirely dependent on the power grid.
 - The benefits of this method are outweighed by its environmental implications.
 - This energy storage method is unaffected by external conditions.
 - This storage method makes use of an extremely plentiful natural resource.
 - The limitations of this storage method are largely unknown at present.

Speaker 1	
Speaker 2	
Speaker 3	
Speaker 4	
Speaker 5	

Speaking

- 7 **11.1.9 11.3.2 11.3.3 11.3.4 11.3.5**
-  **Think!** Can you think of any other energy storage solutions? Which one(s) is/are the most necessary in your everyday life? Discuss in pairs. Tell the class.

Writing & Speaking

- 8 **11.1.2 11.1.10 11.5.1 11.5.2 11.5.3 11.5.6 11.6.8 11.6.9** **ICT** Collect information on energy storage solutions used in your country and another country. Which one(s) from Ex. 1 is/are the most popular one(s)? Present your findings to the class.

6 Analysing Academic Language

Vocabulary & Reading

- 1 **11.1.9** **11.4.3** **11.5.2** **11.6.4** **11.6.5** The prefix 'arthr-' and the suffix '-itis' appear in the text. Do you know what they mean and when we use them? Are you familiar with any other technical terms or characteristics of scientific writing?

🔊 Listen to and read the text to find out.



Do you speak Science?

Learning a STEM subject can be like learning a whole new language because of all the technical vocabulary. However, having a good knowledge of the language, structures and characteristics used in scientific writing can help you understand it.

Technical vocabulary

A lot of scientific language has roots that come from Latin or Greek. If you learn the meaning of these common roots, you can work out the meaning of new scientific words that you haven't seen before. For example, the prefix 'arthr-' comes from the Greek word 'arthros' which means joint. When we combine that with the suffix '-itis' which means infection or inflammation, we get the word 'arthritis'. Arthritis is an inflammation of the joints. There are other examples shown in the table below.

Prefix/Suffix	Meaning	Example
photo-	light	photography, photosynthesis
hydro-	water	hydrography, hydroelectric power
-itis	inflammation/infection	arthritis, meningitis
Other words	Meaning	Example
logy	study of	biology, psychology, astrology
card	relating to the heart	cardiac muscle, cardiology, cardiologist
cranio	relating to the skull or head	cranium, craniotomy, cranial nerves

- 2 **11.4.2** **11.4.6** Read the text again and answer the questions.

- Which languages does a lot of scientific language come from?
- How is the formation of plurals different in scientific writing?
- What are the characteristics of scientific texts?
- What is the writer's attitude towards learning technical vocabulary?

Plurals

The way in which we use plural forms in STEM subjects is also unusual. We often encounter irregular plurals because of the words' Greek or Latin origin. For example, the word 'cactus' doesn't become 'cactuses' as expected, but instead becomes 'cacti'.

Plurals in science

- words ending in **-us** can take **-i** endings
e.g. cactus – cacti, fungus – fungi, nucleus – nuclei
- words ending in **-um** often take **-ia** endings
e.g. bacterium – bacteria, atrium – atria
- words ending in **-a** often take **-ae** endings
e.g. algae – algae, larva – larvae, vertebra – vertebrae

Sentence structures

Scientific texts have slightly different sentence structures to those used in stories. For example, scientific writing often uses the passive voice to give importance to actions rather than the person who performed them. For example, we would use the sentence, 'A beaker was filled with water,' rather than, 'The scientist filled a beaker with water.'

Characteristics of scientific texts

Scientific writing has some characteristics that are not commonly found in other types of texts. They tend to utilise statistics and facts, and make objective statements rather than giving subjective descriptions using adjectives.

Characteristics of scientific texts

- avoid unnecessary detail
- use direct language
- impartial – don't tend to include the writer's personal opinion or view
- logically structured
- accurate – avoid words such as almost, about, nearly, etc.

Learning to understand and write scientific texts in English can be tricky for both native English speakers and for people learning English as a second language. However, it's important to keep practising and not give up!

Check these words

joint, infection, inflammation, objective, subjective

- 3 **11.3.7** **11.5.2** Fill in: scientific, objective, technical, personal, common, sentence. Then make sentences using the completed phrases. Tell the class.

- | | | | |
|---------|------------|---------|------------|
| 1 | roots | 4 | structure |
| 2 | language | 5 | statements |
| 3 | vocabulary | 6 | opinion |

- 4 **11.1.2 11.1.10 11.3.1 11.3.6 11.3.7 11.5.2** Write two things you have learnt from the text. Swap papers with your partner. Compare your answers.

Grammar

Affixes (prefixes and suffixes)

- 5 **11.6.A** Fill in the correct form of the words in bold using the appropriate affix.
- Some of my classmates the assignment on energy storage and had to do it again. **UNDERSTOOD**
 - Access to the science club is strictly prohibited to **MEMBERS**
 - Experts are trying to the life of lead batteries. **LENGTH**
 - It's taking a long time to build new power lines because the construction company is **STAFFED**
 - I'm currently a energy engineer, but in two years, I'll be fully qualified. **TRAIN**
 - Our generation benefits from education where we can take part in the lessons, rather than just observing them. **ACTIVE**

Listening

- 6 **11.2.2 11.2.8** Listen to two people discussing ways to teach scientific vocabulary. For questions 1-8, complete the sentences.

Teaching and Learning Scientific Language

- Nick works as a teacher.
- Nick believes one of the greatest challenges facing his students is understanding
- Angie hadn't considered that science lessons involve introducing various to the students.
- Confusion arises because everyday words sometimes have a in science.
- A common method of teaching scientific vocabulary giving students a list of
- Nick believes a better way is to teach students the of scientific words.
- Nick advocates the use of a in the classroom as teaching aid.
- He suggests testing students and asking them to words they haven't encountered before.

Listening & Speaking

- 7 **11.1.10 11.2.3 11.2.2 11.2.7 11.2.8** Listen to two students exchanging views on how to teach scientific language. What is each speaker's opinion? Do they agree with each other? Tell the class.
- 8 a) **11.2.2** Listen to the dialogue again. Which of the phrases in the Useful Language box can you hear?

Giving Reasons

- The main reason is ... • Due to/Owing to (the fact that) ...
- Another (equally) important reason is ...
- Therefore/Consequently ...

Highlighting

- in fact ... • particularly/in particular ... • As a matter/In point of fact ... • In reality ... • In truth ...

Introducing an opposing point

- While you have a point, I nevertheless think that ...
- Looking at it from another point of view ...
- I take/see/respect your point but ...
- On the other hand, I feel that ...

Study skills

Exchanging views – Discussing controversial issues
In an interactive discussion it is important to sustain the discussion by exchanging views and positions on the topic, while developing your ideas in a formal style. Remember to present a persuasive argument and comment on your partner's contribution in a constructive and respectful manner.

- b) **11.1.10 11.3.1 11.3.2 11.3.6 11.3.7** Use the ideas below and the phrases in the Useful Language box to act out a similar dialogue to the one you listened to in Ex. 7.
- teach scientific prefixes and suffixes
 - use picture dictionaries
 - teach the root of scientific words
 - use props in the classroom
 - play memory games

Writing & Speaking

- 9 **11.4.8 11.5.1 11.5.2 11.5.3 11.5.6 11.5.9 11.6.4 11.6.5**
ICT Collect information on other characteristics of scientific language/writing. Prepare a short presentation. Present your findings to the class.

6d Writing

Public speaking – Giving a speech/presentation

Writing Tip

What is public speaking?

Public speaking is the act of addressing a group of people in order to describe a place or object, to narrate important events, to persuade, or to communicate ideas. The most common form of public speaking is a presentation.

Types of Presentations/Speeches

There are different types of presentations/speeches:

- Informative e.g. *school presentations, science & technology presentations, business seminars*
- Persuasive e.g. *in sales, debates, to a group of peers*
- Ceremonial e.g. *graduation*

Purposes of Presentations/Speeches

We give presentations/speeches to:

- A** describe a product, an invention, a place, people
- B** narrate important events
- C** persuade by presenting arguments for & against an issue, expressing our opinion on an issue, etc.
- D** communicate in panels, debates, conferences, etc.

Rubric analysis

- 1 **11.3.2** **11.3.3** **11.3.4** **11.3.5** **11.5.4**

11.5.7 Read the rubric and answer the questions.

Imagine you work for a renewable energy company. Give a speech to students about storing energy in flow batteries in Kazakhstan. (200–250 words)

- 1 Who will you be giving your speech to?
- 2 What will your speech be about?
- 3 What is the purpose of the speech: to entertain, to narrate, to inform or to persuade?

Model analysis

- 2 **11.2.1** **11.2.7** **11.2.8** **11.4.3** Listen to and read the model. In which main body paragraph (A–C) does the speaker:

- 1 explain why flow batteries are a good solution?
- 2 describe how flow batteries work?
- 3 introduce the idea of flow batteries?

Good morning, everyone. My name is Dr. Alibek, a researcher in the field of renewable energy storage solutions. I want you to imagine you're back home, taking a leisurely walk through your neighbourhood. But something is wrong. The sky is dark with air pollution and the water and earth are contaminated with chemicals. This could be our future unless we switch to renewable energy sources.

A Fortunately, every year, the amount of electricity generated using renewable sources increases in Kazakhstan. But with this increase comes the need for new energy storage solutions. Today I'm going to show you why flow batteries are the answer.

B This innovative technology stores power in liquid tanks. There are two tanks in each battery, one negatively charged and the other positively. When the battery receives energy from a renewable source, the battery charges by pulling electrons from the positive tanks and pushing them to the negative ones. When demand exceeds supply, the energy flow reverses, providing electrical power.

C So why are these flow batteries a good solution for Kazakhstan? Well, to begin with, they provide safe and reliable energy storage. In addition to that, these flow batteries can last for decades and don't require parts to be replaced frequently. In fact, the electrolyte solution used inside them could last indefinitely, ensuring this method of storage doesn't produce much waste. Isn't it fantastic that Kazakhstan is investing in energy storage solutions such as flow batteries to enable us to meet our renewable energy targets, and also do our part in protecting our planet? Please do not hesitate to ask any questions you have on the topic. Thank you all for listening.

Study skills

Using emotional language

When you give a speech/presentation about a social or controversial issue, you can use emotional language to influence the members of the audience by appealing to their emotions and triggering specific reactions to the topic you are presenting. Emotional language includes rhetorical questions, strong adjectives and imagery.

- 3 **11.1.9** **11.1.10** **11.3.3** **11.3.6** **11.4.8** Read the Study Skills box.

How does the speaker use emotional language in the opening of the speech in Ex. 2? What emotions/reactions does this technique trigger in the audience?

Opening/Closing techniques

- 4 a) 11.5.4 Read the extracts (A-D). Which are: *introductions?* *conclusions?*

A For years, I have been searching for the perfect energy solution. I have taken part in global research projects and worked with some of the best scientists and engineers in the field. Now, I am pleased to tell you, I have finally found what I was looking for.

B Gravity is truly universal and so these towers really are a global solution: they're clean, efficient, cheap and can be constructed in almost any environment.

C Do you think these towers are a viable solution for our future? I'd be interested to hear your thoughts after the Q&A session.

D Gustave Eiffel, the French engineer who designed the Eiffel Tower, said that building a tall tower represented a "victory over the formidable law of gravity that tethers man to the ground". But today I'd like to offer you another perspective: what if we stopped fighting the power of gravity and harnessed it instead?

- b) 11.4.6 11.5.4 Match the extracts (A-D) to the opening/closing techniques (1-4).

- 1 make a statement
2 use a quotation & a rhetorical question
3 narrate a personal story
4 address the audience

- c) 11.4.6 What opening/closing techniques did the writer use in the model in Ex. 2?

Your turn

- 5 11.3.2 11.3.3 11.4.4 11.5.2 11.5.4 11.5.7 Read the rubric and answer the questions.

Imagine you work for an energy storage company. Give a speech to students about energy storage towers - how they work and why they are a good solution. (200-250 words)

- Who will you be talking to?
- What will you talk about?
- What is the purpose of the speech: to entertain, to narrate, to inform or to persuade?

- 6 a) 11.5.2 Expand the ideas into sentences.

- concept/base on/simple physics
The concept is based on simple physics.
- require/crane/120 metres tall/six arms/and/
concrete blocks/weigh/35 tons each
- system/control/innovative/software
- electricity demand/decrease/crane/use/surplus
power/build tower of blocks
- demand/increase/crane/tower blocks/use gravity
- potential energy/in blocks/convert/electricity/by
turbine

- b) 11.5.4 Match the benefits (1-4) to the justifications (A-D).

- 1 efficient 3 environmentally-friendly
2 cheap 4 durable

- A blocks last 30-40 years
B no chemicals are required
C one tower can store enough electricity to power 2,000 homes for a day
D can manufacture blocks from existing waste material from construction sites

- 7 11.1.2 11.5.1 11.5.2 11.5.3 11.5.4 11.5.6 11.5.7 11.5.9
11.6.9 Use the ideas in Ex. 4, your answers in Exs 5 and 6 and the Useful Language box to prepare and give your speech.

Plan & Useful Language

Introduction (§ 1)

- Greet the audience, welcome them and introduce yourself/your job.
- Select an appropriate opening technique to introduce the topic (e.g. stimulate emotions: *When you think about all the technological advancements made recently, how does it make you feel? Excited? Full of hope? Let's discuss a specific [technology] that makes all of us very proud.*)

Main body (§ 2, 3 & 4)

- Type of technology:** (e.g. *The concept of [technology] used to be a distant dream with little chance of becoming a reality. Not anymore! Today, we are proud to present to you the ...*)
- How it works:** (e.g. *This cutting-edge/high-tech/revolutionary/innovative, etc. [technological advancement] ...*)
- The future:** (e.g. *So why is/are ... a good solution? Well, it is/they are cost-effective/efficient etc because/as ...*)

Conclusion (§ 5)

- Summarise the main points of your presentation.
- Select an appropriate closing technique to conclude your presentation (e.g. *make a statement: This type of technology undoubtedly ...*)
- Invite questions from the audience.
- Thank the audience for listening.

6e Culture Corner



MIT - Massachusetts Institute of Technology | Wednesday, May 16

Located in Cambridge, Massachusetts in the USA, the Massachusetts Institute of Technology, or MIT, is a private college that was founded in 1861. **1** In fact, it attracts over 20,000 new student applications each year from 120 countries.

MIT is made up of five different schools including a school of Science, a school of Engineering and a school of Architecture. These five schools house 30 different departments each offering a vast array of courses. **2** In addition, the staff and students of MIT all have access to excellent laboratories, libraries and research facilities. The institution is well known for encouraging its students to learn by doing, for example, by undertaking lab or field work. **3** The research carried out at MIT aims to answer some of the biggest questions and overcome

some of the most difficult challenges in science; from curing cancer to searching our universe for new habitable worlds. One specific example of a result of the research at MIT is the CRISPR Technology system. **4** Another area of research is the use of Artificial Intelligence (AI) for medical solutions. This could include using it to help develop and test new drugs and medicines. These amazing technologies and inventions could help people feel better or even save their lives.

But there aren't just student experiments being done and inventions being created at MIT. The institution also receives some funding for its work. **5** But it doesn't stop here, with so many experts, intelligent minds and excellent facilities, MIT will continue to make good ideas change the world for years into the future.

1 **11.4.3** **11.4.7** What do you know about MIT in the USA? What else would you like to know? Write down two questions. Read the text to check if you can answer your questions.

2 **11.4.7** Read again and choose from the sentences (A-F) the one which fits each gap (1-5). There is one extra sentence.

🔊 Listen and check.

- A Students can choose to study a wide range of subjects from aeronautics or architecture to chemical engineering or genetics.
- B This system can diagnose, detect and potentially treat a range of genetic diseases or disorders through gene editing.
- C For example, in March 2019, they received \$30 million from the US Agency for International Development (USAID) to help address energy challenges in Egypt.
- D MIT is one of the most popular institutions in Massachusetts.
- E Today, the college is ranked as one of the best places to study in the USA.
- F In fact, more than 85% of the undergraduate students participate in some sort of research while studying for their degree.

Check these words

research facilities, field work, diagnose, detect, gene editing

3 a) **11.5.2** Fill in: gene, field, challenges, applications, worlds, facilities, challenges, solution, medicines, disorders, funding.

1 work	6	habitable
2	test	7	research
3	energy	8 editing
4	medical	9	receive
5	detect	10	student

b) **11.3.1** **11.3.6** **11.3.7** Use the completed phrases to talk about MIT.

4 **11.1.6** **11.1.8** **11.1.10** **11.5.1** **11.5.6** **11.6.4** **11.6.5** **ICT**



Collect information about an institute of technology in your country. Include: location, a short history of it, facilities, courses that are offered, any research programmes, any prestigious graduates. Write a text about it. Present it to the class.



TYPES OF ENERGY

- 1** **11.5.2** The pictures show various types of energy. Label the pictures. Use: sound, thermal, light, mechanical, magnetic, gravitational.
 Listen and check.



1)



2)



3)



4)



5)



6)

- 2** **11.2.1** **11.4.3** What is the difference between 'kinetic' and 'potential' energy?
 Listen and read to find out.

- 3** **11.4.2** Read the text again. For questions 1-6, choose from texts A-E.

Which type of energy ...

- exists in the connections between particles?
- varies depending on speed?
- is possible to see with the naked eye?
- increases in proportion to heat?
- changes with distance from the Earth's surface?
- is both potential and kinetic?

Energy is essential. It is required for every process, from launching a shuttle into space right down to the biological processes in our bodies. There are two forms of energy: kinetic, which is the energy that moving objects have, and potential, which is the energy stored in objects. There are also many types of energy. Although it can change from one type to another, energy can never be created or destroyed. Let's look at some of the types.

- A Mechanical energy** is that which is stored in moving objects. The amount of energy stored increases as the speed of movement increases. Mechanical energy can be either kinetic or potential. For example, if you throw a ball, it has kinetic energy because it is moving, but it also has potential energy because it is in the air, with the potential to fall to the ground.
 Examples: a person running, the wind blowing, cogs turning
- B Thermal energy** is kinetic energy because it comes from the movement of particles. Although particles are moving all the time, when they are heated up, they move faster. Therefore, the hotter a substance is, the more thermal energy it has.
 Examples: boiling a kettle, the heat Earth receives from the Sun
- C Chemical energy** is potential energy. It is stored in the bonds between atoms and other atoms and molecules and other molecules. It is released when a chemical reaction takes place, and the particle changes state.
 Examples: food, chemical batteries, petrol
- D Light energy** is the only form of energy visible to the human eye. It is kinetic energy because it exists in photons, which are produced when the atoms of an object heat up and move faster. It can travel through a vacuum because it doesn't need matter to move.
 Examples: lightning, stars, the Sun, lamps
- E Gravitational energy** is potential energy because it is stored inside an object. On Earth, the higher an object is above the ground, the greater its gravitational energy. However, if you were to take that same object into space, outside the pull of the Earth's gravitational field, then its gravitational energy would effectively be reduced to zero.
 Examples: a bird flying through the air, an apple hanging on a tree

Check these words

particle, molecule, photon, vacuum, matter

- 4** **11.5.2** Fill in: reaction, movement, field, object, process.

- | | |
|-----------------------|----------------------|
| 1 moving | 4 of particles |
| 2 biological | 5 chemical |
| 3 gravitational | |

- 5** **11.1.9** **11.2.7** **11.2.8** **11.3.2** **11.3.3** **11.3.4** **11.3.5** **11.3.6** **11.3.7** **THINK!**
 What do you know about the other types of energy in Ex. 1? What else would you like to know? Write down two questions. Check if any of your classmates can answer them.

- 6** **11.1.2** **11.1.4** **11.4.8** **11.5.1** **11.5.6** **11.4.9** **ICT** Collect information about the other types of energy in Ex. 1. Write a short paragraph about each one of them. Present them to the class.

6 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- Remember to your homework assignments by noon on Wednesday. (**give**)
- He didn't at the village school, but he's loving life at college in the city. (**belong**)
- I haven't seen you for a while, so I just wanted to and make sure you're OK. (**contact sb**)
- You're sure to with some interesting people at university. (**become friendly**)
- We can do this faster if you all and help. (**do sth in a group**)
- How long did it take you to at university? (**feel comfortable**)

- 2 **11.6.13** Choose the correct preposition.

- We're looking for an energy storage solution that has no impact **on/to** the environment.
- The problem with solar energy is that, at night, there is a shortfall **with/in** production.
- I hope that one day everyone will have access **at/to** renewable energy.
- Our university is committed **in/to** reducing energy consumption.
- Kazakhstan is well known **for/about** producing oil.

Collocations

- 3 **11.5.2** Fill in: station, cells, demand, energy (x2), facilities, power, roots, technology.

1 photovoltaic	5 common
2 research	6 charging
3 plant	7 invisible
4 energy storage	8 geothermal
	9 high

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- Fewer cars mean that carbon dioxide will decrease. (**EMIT**)
- The company are trying to reduce their energy (**CONSUME**)
- This language is too for a piece of scientific writing. (**SUBJECT**)
- My professor asked me if I would like to some research with him. (**TAKE**)
- Objects fall due to a pull. (**GRAVITY**)

Words often confused

- 5 **11.5.2** Choose the correct word.

- There is a **possibility/probability** of using biofuels in our taxis.
- This battery has a 2 MWh **capacity/capability**.
- Biogas is difficult to produce so let's find an **alternative/alternate** energy source.
- I'm worried the **demand/requirement** for electricity will exceed the supply at night.
- Renewable energy has the **potential/proficiency** to stop our reliance on fossil fuels.



Kazakhstan in Action!

Read and fill in the correct word.

- Shafik Chokin is known 1) founding the field of energy science in Kazakhstan. He founded the Kazakh Research Institute of Energy in 1944, and was 2) director for over 40 years. He is 3) a hero in Kazakhstan, and 4) awarded the title of 'Halyk Kaharmany', the country's highest honour.
- It is hoped that 5% of all of Kazakhstan's energy will be produced from renewable, 5) carbon sources within the 6) 5 years. A

new Centre for Energy Research has 7) proposed, and experts from Nazarbayev University will lead research 8) the aim of developing cheaper, more efficient solar cells.

- Kazakhstan is making great strides in the 9) of renewable energy. Two major wind 10) stations are currently 11) development in the Zhambyl region, with plans for 25 more renewable energy 12) worth over 500 billion tenge, in the next years.



Thermal Energy Storage

At any given time, there are millions of mechanical and chemical processes taking place across the globe. In industrial processes, for example, we use machines which require huge amounts of energy to power them. Yet, over 50% of the energy used in these processes is simply expelled as heat. Thankfully, Jeffrey Grossman, a professor of materials science and engineering, has created an elegant and innovative solution to the problem of thermal energy storage.

Grossman's solution revolves around the use of phase-change materials, or PCMs. A phase-change material is one that absorbs energy as it changes state and releases that energy when it reverts to its original state. A common example is wax, which absorbs thermal energy as it melts and releases this energy, known as latent heat, as it solidifies. While PCMs already have a handful of useful applications, such as in heating systems, their usefulness is restricted by a major flaw; they are dependent on the temperature of their environment, so it isn't possible to control the release of energy using only PCMs. In order to efficiently utilise stored thermal energy, Grossman knew that he needed to create a mechanism which could trigger the release of latent heat on demand. He began looking back at old research, particularly his work on photoswitches.

Photoswitches are molecules that react to light. Their shape changes when they are exposed to very specific wavelengths of light, and reverts when exposed to others. Although they couldn't store heat themselves, Grossman realised that by melting them together with PCMs, he could prevent the PCMs from solidifying at low temperatures, effectively trapping the energy inside. Then, by simply shining a special type of light on the material, he could cause the photoswitches to shift their orientation, allowing the PCM to solidify and therefore releasing the thermal energy it had absorbed. Grossman admits that there is still a long way to go in terms of creating practical applications for his idea, but so far it has shown a lot of promise.

Progress Check

6

Reading

- 1 **11.4.2** **11.4.6** Read the text and decide if sentences 1-5 are T (true), F (false) or DS (doesn't say).

- 1 Storing thermal energy proved challenging for Grossman.
- 2 Thermal energy is mostly produced by mechanical processes.
- 3 According to the author, phase-change materials have a wide variety of practical applications.
- 4 Photoswitches are most effective at lower temperatures.
- 5 Grossman intends to develop his idea further.

5x2=10 marks

Listening

- 2 **11.2.1** **11.2.7** **11.2.8** You will hear people talking in five different situations. For each question 1-5, choose the best answer (A, B or C).

- 1 You overhear someone leaving a voicemail message. What is he doing?
 A inviting someone to an event
 B asking to borrow their car
 C telling someone about his weekend plans
- 2 You hear two friends talking about their science projects. What do they agree about?
 A how difficult it is to find information
 B how much time it is taking to do
 C how interesting the topic is
- 3 You hear a person giving a speech. Why is she talking to them?
 A to explain the benefits of renewable energy
 B to inform them about a new project
 C to explain how wind turbines work
- 4 You hear two colleagues talking at work. What does the man think about lithium-ion batteries?
 A they are too expensive
 B they are a good investment
 C they are not efficient
- 5 You hear an expert being interviewed. What does she say about energy targets?
 A they are not currently being met
 B they are totally unrealistic
 C they need to be reviewed

5x2=10 marks

6 Progress Check

3 **11.5.2** Fill in: integrate, eliminate, fluctuate, outweigh, generate, pump, compress, utilise, expand, store.

- The environmental benefits of renewable energy the financial cost.
- Is there a better way to energy than inside batteries?
- They use wind power to electricity.
- If you the air, you can fit more inside the chamber.
- We're trying to the problems in the system.
- We the water to a higher point and collect the energy as it runs back down again.
- The amount of energy our solar panels produce can by as much as 90% depending on the weather.
- You need to all the data available to you to come to an informed conclusion.
- The air will as you heat it because the molecules vibrate faster.
- The new smart technology helps us lots of different energy sources into one grid.

10x2=20 marks

4 **11.6.9** Put the verbs in brackets into the correct present or past tense.

- I (not/study) engineering for very long, but I already love it.
- (you/ever/hear) of an energy storage tower before yesterday's conference?
- Jon's dad (not/work) for an energy storage company. He's a Physics teacher.
- Sue had a headache because she (look) at her computer screen all day.
- What (you/do) at 5 pm yesterday?

5x2=10 marks

5 **11.6.5** Look at the underlined words/phrases. Identify the type of verb complementation.

- Anna wants to borrow my notes.
- The new manager arrived yesterday.
- I enjoy learning scientific words.
- He showed them the energy storage tower.
- The kettle has broken.

5x2=10 marks

6 **11.6.8** Put the verbs in brackets into the correct future tense.

- (you/take) your final exams this summer?
- Don't worry! Berik (not/give) his presentation by the time we arrive at the conference.
- By the end of this month, Gulnara (study) engineering for two years.
- I think I (get) a good job in the STEM sector.
- (they/organise) the data by Friday?

5x2=10 marks

7 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- I know the plural of 'bacterium' is , but I can't remember exactly what it is. (REGULAR)
- They're trying to reproduce the chemical in the lab. (ACTION)
- Basic knowledge of STEM subjects is desirable for this job, but it's for candidates to have many years of work experience. (NECESSARY)
- The panel decided to give the first the position because she impressed them so much. (INTERVIEW)
- How did Sholpan her fear of public speaking? (COME)

5x2=10 marks

Writing

- 8** **11.5.1** **11.5.2** **11.5.3** **11.5.4** **11.5.6** **11.5.7** Imagine you work for a renewable energy company. Give a speech to a large company about compressed air energy storage (CAES) – how it works and why it is a good solution for the company (200-250 words). 20 marks

Total: 100 marks

Check your Progress

- talk and write about STEM, intelligent energy storage and energy storage solutions _____
- analyse academic language _____
- use verb complementation _____
- use present/past tenses, future tenses _____
- use affixes – prefixes and suffixes _____
- exchange views – discuss controversial issues _____
- write a speech _____

GOOD ✓ VERY GOOD // EXCELLENT ///

Module 7

Reading for pleasure

Vocabulary: genres of literature (fiction/non-fiction); elements in fiction; imagery

Grammar: present & past tenses

Reading: non-fiction/fiction texts

Listening: character analysis

Speaking: evaluate & comment on the views of others; reflect on & explore a range of perspectives

Writing: develop arguments; a film review

Vocabulary

Genres of literature (fiction/non-fiction)

- 1 **11.1.3 11.1.8** In groups, match extracts (A-F) to the sources (1-6) they are from. Which are fiction and which are non-fiction?
- 1 a poem | 3 a script | 5 an encyclopedia
2 a novel | 4 a dictionary | 6 a review
- 2 a) **11.1.3 11.1.8** Read sentences 1-6. Decide in groups which of the extracts A-F from Ex. 1 they follow on from.
- I perceived, as the shape came nearer (sight tremendous and abhorred!) that it was the wretch whom I had created.
 - It's alive. It's alive.
 - Even the Creature (Robert De Niro), an aesthetically challenged loner with a father who rejected him, would make a dandy guest on any daytime television talk show.
 - Etymology: Middle English via Old French from Latin 'creare' (to create)
 - From Darkness to promote me?
 - In 1786 he discovered that, when a frog's legs are touched by both a copper probe and a piece of iron at the same time, they twitch.
- b) **11.1.3 11.1.10 11.4.8** In groups, write a sentence to follow on from sentence 1 in Ex. 2a. Find the actual sentence online. How close were you?

A **creature** /kri:tʃə/ (noun) 1 an animal, in contrast to a human being; the study of birds and other creatures of the forest 2 an animal or person: *Don't our fellow creatures deserve respect for?* 3 a fictional or imaginary being; creatures from Mars 4 (with adjective) person: *You poor creature!*

B **Galvanism** is the name given in biology to the effect electricity has on a muscle. It was named after Italian scientist Luigi Galvani (1737-1798), who investigated the effects of electricity.

C Did I request thee, Maker, from my clay
To mould me man? Did I solicit thee

D *As I said this I suddenly beheld the figure of a man, at some distance, advancing towards me with superhuman speed. He bounded over the crevices in the ice, among which I had walked with caution; his stature, oh, as he approached, seemed to exceed that of man. I was troubled; a mist came over my eyes, and I felt a faintness seize me, but I was quickly restored by the cold gale of the mountains.*

E Branagh is in over his head. He displays neither the technical finesse to handle a big, visually ambitious film nor the insight to develop a stirring new version of this story. Instead, this is a bland, no-fault Frankenstein for the '90s, short on villainy but loaded with the tragically misunderstood.

F FRANKENSTEIN is wrapped in his despair, face cradled in his hands. A SOFT TAP. He glances over his fingers. Thinking he imagined it. No. There's another tap. And another. We see it in his eyes. Sheer joy and stunned exultation. Triumph and wonder unbelievably sublime. A bare whisper:
VICTOR

7 Frankenstein

• Biography

- 3** **11.4.1 11.4.4** What kind of woman was Mary Shelley? Which two kinds of fiction did she help create? Read the biography to find out.



Mary Shelley (1797-1851) is most famous for her novel, *Frankenstein; or, The Modern Prometheus*. She also wrote poetry and worked tirelessly to get her husband, Percy Shelley, published. Her mother, Mary

Wollstonecraft, was an early champion of women's rights and a writer as well. She died when her daughter was just ten days old. Mary Shelley was raised by her father, the political philosopher William Godwin. He encouraged her to learn and study, which she did. In 1816, she married Percy Shelley, whom she had met two years earlier. The two traveled around Europe together, and in the summer of 1816, spent the summer in Geneva, Switzerland, with some of their friends, including Lord Byron. The friends sat in front of the fire one evening, reading ghost stories aloud. Lord Byron suggested that they all write their own horror story. Soon afterward, Mary Shelley thought of the idea for *Frankenstein*. She finished and published her novel, something that was exceedingly uncommon for a woman to do in this time period. Today, this is one of the most popular and well-known stories in English and has been adapted for stage and screen many times. Because *Frankenstein* uses science rather than magic to bring his creation to life, the book is seen as an early science fiction story as well as a horror one.

- 4** **11.4.2 11.4.9** Ask and answer questions, as in the example.

- A: When was Mary Shelley born?
 B: She was born in 1797.
 A: Correct.
 B: Why is she famous? etc



• Background analysis

- 5** **11.4.2 11.4.4** Read the text and answer the questions.

Frankenstein takes place in the late 1700s. It begins on board a ship bound for the North Pole. The ship's captain, Robert Walton, sees a solitary figure moving across the ice. Later, he sees another man and brings the man onto the ship. This man is Victor Frankenstein. In Walton's expedition towards the North Pole (which had not even been attempted at the time of the novel's publication), Frankenstein recognizes his own obsessive pursuit of knowledge, and he decides to tell Walton his life story as a cautionary tale.

When Frankenstein was a student, he became obsessed with the creation of life. In fact, he became so obsessed that he decided to create a human being. He studied very hard and began building a person out of stolen body parts. Using electricity, he brought the body to life. However, when Victor saw what he had created, he was immediately disgusted. He couldn't even bear to be in the same room as it and he fled. The creature subsequently disappeared.

Victor was so upset that he got sick. He went home once he was well, only to find out that his younger brother had been murdered. Victor knew that it was the creature. Feeling guilty, he took a trip to the mountains to relax. There, he met the creature face to face. The creature could speak and was intelligent. He told Victor about his life and what he'd been through. He'd learned to speak and read, but every time someone saw him, they ran away or tried to hurt him. The creature was very lonely and asked Victor to make him a companion.

At first, Victor agreed. But as he got closer and closer to finishing the new creature, he became more and more afraid of the consequences, so he destroyed all of his progress and said that he'd never make another. The creature became very upset and killed first Victor's friend, and then his wife, and Victor began chasing it further and further north to kill it. Shortly after he finishes telling his story, Victor dies. The creature comes aboard the ship shortly afterward, and is very sad to hear of Victor's death. It decides it has nothing now left to live for, and says it will build a funeral pyre to burn itself on.

- 1 Why does Frankenstein tell his story?
- 2 What was Frankenstein's reaction to his creation?
- 3 Where did the creature first kill?
- 4 What did Frankenstein do with the creature's companion?
- 5 Where does Frankenstein die?

- 6** **11.4.4** **11.4.8** You are going to read an extract from Mary Shelley's novel *Frankenstein*. First look up the adjectives in the list in a dictionary and discuss what they might refer to in groups. Then read and check.

• dreary • half-extinguished • lifeless • dull • lustrous
• pearly • inanimate • breathless

It was on a dreary night of November that I beheld the accomplishment of my toils. With an anxiety that almost amounted to agony, I collected the instruments of life around me, that I might infuse a spark of being into the lifeless thing that lay at my feet. It was already one in the morning; the rain pattered dully against the panes, and my candle was nearly burnt out, when, by the glimmer of the half-extinguished light, I saw the dull yellow eye of the creature open; it breathed hard, and a convulsive motion agitated its limbs.

How can I describe my emotions at this catastrophe, or how delineate the wretch whom with such infinite pains and care I had endeavoured to form? His limbs were in proportion, and I had selected his features as beautiful. Beautiful—Great God! His yellow skin scarcely covered the work of muscles and arteries beneath; his hair was of a lustrous black, and flowing; his teeth of a pearly whiteness; but these luxuriances only formed a more horrid contrast with his watery eyes, that seemed almost of the same colour as the dull white sockets in which they were set, his shrivelled complexion and straight black lips.

The different accidents of life are not so changeable as the feelings of human nature. I had worked hard for nearly two years for the sole purpose of infusing life into an inanimate body. For this I had deprived myself of rest and health. I had desired it with an ardour that far exceeded moderation; but now that I had finished, the beauty of the dream vanished, and breathless horror and disgust filled my heart. Unable to endure the aspect of the being I had created, I rushed out of the room, and continued a long time traversing my back-chamber, unable to compose my mind to sleep. At length lassitude succeeded to the tumult I had before endured, and I threw myself on the bed in my clothes, endeavouring to seek a few moments of forgetfulness.

Check these words

glimmer, convulsive, delineate, shrivelled, lassitude, tumult



- 7** **11.4.2** **11.4.6** Read the extract again and choose the correct answer (A, B, C or D).

1 How does Frankenstein feel about the prospect of bringing his creation to life?

- A excited C anxious
B depressed D hopeful

2 The first sign of life he notices from the creature is

- A the movement of its limbs.
B the opening of its eye.
C the sound of its breathing.
D the convulsions of its body.

3 When creating the creature, Frankenstein aimed to

- A make its face pleasing to look at.
B make it larger than an average man.
C make its appearance unlike a human.
D make it look like himself.

4 What does Frankenstein say about his ambition to create the creature?

- A It had always disgusted him.
B It came to him in a dream.
C He was careful not to let it consume him.
D His desire to achieve it was irrational.

5 In the final two sentences of the extract, the author defines Frankenstein's state of mind by describing

- A his emotions.
B his actions.
C the sounds he hears.
D his reaction when he sees the creature.

- 8** **11.1.9** **11.2.2** **11.2.4** **THINK!**
Do you think you would react in the same way as Frankenstein to the creature? Do you feel he was right to react as he did? Discuss in groups.

7

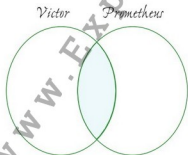
- 9 **11.1.1 11.3.7** Read the theory and, with a partner, find examples of four kinds of imagery in the extract in Ex. 6.

Imagery

- **visual imagery** is description to do with sight, e.g. bright sunshine
- **auditory imagery** is description to do with sound, e.g. a clap of thunder
- **olfactory imagery** is description to do with smell, e.g. sweet perfume
- **gustatory imagery** is description to do with taste, e.g. a spicy sauce
- **tactile imagery** is description to do with touch, e.g. the softness of the sand
- **kinesthetic imagery** is description to do with movement, e.g. a blur of speed
- **organic imagery** is description to do with internal bodily sensations and emotions of hunger, thirst, etc. e.g. pangs of hunger

- 10 a) **11.2.4** Listen to the lecture. Then, use words from the list to complete the Venn diagram. How are the stories of Victor Frankenstein and Prometheus similar? How are they different?

- creates people
- steals fire
- creates one person
- Greek hero
- punished
- oversteps boundaries
- goes against nature
- European scientist



- b) **11.1.8 11.1.10** **THINK!** 'Allusion' is when a work of fiction refers back to an earlier one. Discuss why you think Mary Shelley included the alternative title, *The Modern Prometheus*, and whether her allusion to the legend of Prometheus was successful.

- 11 **11.6.9** Complete the sentences with the correct form of the verb in brackets.

see pp. GR1-GR5

- 1 Victor Frankenstein (try) for a long time before he brought the creature to life.
- 2 When the story begins, Frankenstein (chase) the creature across the North Pole.
- 3 Mary Shelley (take) a holiday in Italy when she thought of the story.
- 4 People (write) plays and films based on Frankenstein ever since it was written.
- 5 Victor (never/regret) his decision to create life until he saw the creature come alive.
- 6 At the end of the story, the creature (plan) to kill itself.
- 7 When Victor meets the creature again, he (teach) himself to read and speak.
- 8 Mary Shelley said that the idea for Frankenstein (come) to her in a dream.

- 12 **11.5.1 11.5.4 11.6.9** First, fill in the graphic organiser based on the extract you read on p. 93. Then, use your notes and present and past forms to summarise the extract. Note that we generally use present tenses to describe the ongoing events in a work of fiction, as in the example.

Characters	Setting	Main Event(s)

The extract describes the night when Frankenstein brings the creature to life. He has been working for ...

- 13 a) **11.2.4** Listen to the lecture and complete the graphic organiser. Does the speaker think Victor or the creature is worse?

Character Trait	Victor	Creature
Self-pity	blames	blames
Overly emotional	falls	loses
Self-importance	is very	deserves a

- b) **11.5.4 11.5.5** Write an essay comparing Frankenstein and his creation.

• Elements in fiction

- 14 **11.4.4 11.4.8** Read the theory. Read a summary of the plot of the four novels mentioned online. Then match the four types of conflict with the situations 1-4 from *Frankenstein*.

Conflict

Conflict is the disagreement, discord or contradiction that creates the need for change in a story. Conflict can be internal (within the protagonist) or external (between the protagonist and some other character or entity).

man against self (internal) – the struggle between the protagonist and their conscience as, for example, Christopher Marlowe's *Doctor Faustus*.

man against nature (external) – the struggle between the character and the elements of nature that are beyond their control, such as Captain Ahab's struggle with the whale in *Moby Dick*.

man against man (external) – the struggle between two characters in a story, for instance that fight for leadership between Jack and Ralph in William Golding's *Lord of the Flies*.

man against society (external) – the struggle between a character and the rules or laws that govern the society where they live; *1984* by George Orwell is a classic case of this type of conflict.

- 1 Frankenstein chases the creature across the ice of the Arctic, determined to kill him.
- 2 The creature tries to educate himself, and not fall into bitterness and despair about his fate.
- 3 Frankenstein decided to put a creature together from dead people and bring it to life.
- 4 The appearance of the creature terrifies the people he meets, leaving him alone and friendless.

- 15 **11.4.4 11.4.6 11.4.7** Read the novel. Test your knowledge.

Quiz

- 1 Where was Victor Frankenstein born?
A in Italy C in Scotland
B in Germany D in Switzerland
- 2 When did Frankenstein's mother die?
A when he was a child
B when he was a young man
C after he created the creature
D after he died
- 3 What does the creature think will make him happy?
A a companion C a job
B a child D a book
- 4 Who is the only one not disgusted by the creature?
A Frankenstein
B Frankenstein's father
C a blind man
D the creature himself
- 5 How many people does the creature kill?
A none C three
B one D four
- 6 How does the story end?
A with a note of hope
B with a tragic death
C on a lighter note
D in confusion
- 7 Who does the author feel is the hero of the story?
A Frankenstein
B the creature
C neither Frankenstein nor the creature
D both Frankenstein and the creature
- 8 Which setting in the novel mirrors Frankenstein's intellectual journey into the unknown?
A the university at Ingolstadt
B Frankenstein's home in Geneva
C the Scottish island
D the North Pole

7

16 **11.1.8** **11.1.9** **11.3.4** Watch the 1994 film *Mary Shelley's Frankenstein* and answer the questions. Then, discuss them as a class.

- 1 Did you enjoy the film more or less than the book?
- 2 Did you like the way Robert De Niro and Kenneth Branagh portrayed the main parts? Who was better?
- 3 Which part of the book would work best using your country as a film location? Why?

17 a) **11.4.4** **11.4.5** **11.4.8** Read the extracts. How are they related to *Frankenstein*? Who wrote them? Check online. Then explain the words in bold, and check in your dictionary.

It is no slight merit in our eyes that the tale, though wild in incident, is written in plain and forcible English, without exhibiting that mixture of hyperbolic Germanisms with which tales of wonder are usually told, as if it were necessary that the language should be as extravagant as the fiction. The ideas of the author are always clearly as well as forcibly expressed; and his descriptions of landscape have in them the choice requisites of truth, freshness, precision, and beauty. The self-education of the monster, considering the slender opportunities of acquiring knowledge that he possessed, we have already noticed as improbable and overstrained. That he should have not only learned to speak, but to read, and, for aught we know, to write – that he should have become acquainted with Werther, with Plutarch's Lives, and with Paradise Lost, by listening through a hole in a wall, seems as unlikely as that he should have acquired in the same way, the problems of Euclid, or the art of book-keeping by single and double entry.

Check these words

merit, forcible, hyperbolic, extravagant, requisite, slender, book-keeping

But when we have thus admitted that *Frankenstein* has passages which appal the mind and make the flesh creep, we have given it all the praise (if praise may be called) which we dare to bestow. Our taste and our judgement alike revolt at this kind of writing, and the greater the ability with which it may be executed, the worse it is – it teaches no lesson of conduct, manners, or morality; it cannot mend, and will not even amuse its readers, unless their taste have been deplorably damaged – it fatigues the feelings without interesting the understanding; it gratuitously harasses the sensations. The author has powers, both of conception and language, which employed in a happier direction might, perhaps, give him a name among these whose writings amuse or amend their fellow-creatures; but we take the liberty of assuring him, and hope that he may be in a temper to listen to us, that the style which he has adopted in the present publication merely tends to defeat his own purpose, if he really had any other object in view than that of leaving the wearied reader, after a struggle between laughter and loathing, in doubt whether the head or the heart of the author be the most diseased.

Check these words

thus, appal, revolt, deplorably, fatigue, object

- 11.3.3** **11.3.4** **11.4.6** Compare the two extracts. What is the writer's attitude to the book in each one? Where do they agree/disagree? Who do you agree with most?
- 11.4.9** Both extracts were written shortly after the novel's first publication, when it was issued anonymously – without the author's name appearing on it. What wrong assumption did both the writers make?

18 **11.5.1** **11.5.4** **11.5.5** Write a review for a film magazine of the film of *Frankenstein* you saw for Ex. 16, commenting on how successful it was as an adaptation of the book. Edit and proofread your work.

Module 8

Recent advances in technology

Vocabulary: technological, mobile and application tools (technological advances, apps in education, apps for personal and professional use), digital natives and future careers

Grammar: reported speech, verb complementation, prepositions (with nouns/adjectives/verbs), prepositional phrases, clauses of concession, multi-word verbs

Everyday English: a job interview

Phrasal verbs: verbs with down

Writing: an information leaflet

Culture Corner: *The Post, Present and Future of Android OS*

Curricular (Design & Technology): *Holography – the new 3D*

Vocabulary

Technological advances

- 11.1.90 11.2.2 11.3.6 

THINK! Look at the pictures. What do you know about these technological advances? Tell the class.
- 2 11.4.2 11.4.3 11.5.2 Fill in: spreadsheet, power, mechanics, algorithm, manufacturing, transactions, applications, assistants, network, object, assessment, currencies.

 Listen and check.
- 3 11.1.90 11.3.2 11.3.6 

THINK! How important are these technological advances? How can they change the world? Discuss in groups.



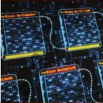
A Quantum Computing

With the invention of quantum computers, scientists have dramatically increased their information processing 1) By using quantum 2) they have made it possible for computers to perform large numbers of tasks simultaneously. It is also predicted that quantum computers will have major applications in weather prediction, risk 3) and other fields where complex data is processed on a large scale.



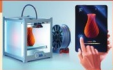
B Blockchain

Blockchain is essentially a digital ledger or 4) and each "block" can be thought of as a page on which we keep track of data. Everything is recorded permanently on a shared 5) making it an extremely secure way to record monetary 6) Consequently, it has led to the rise of digital 7) or cryptocurrencies, around the world. It has other useful applications too, even being used by some non-profit organisations to track the migration patterns of endangered species.



C 3D Printing

Massive leaps in printing technology have opened up a new realm of limitless potential. Through a process known as additive 8) where material is added in layers to create a three-dimensional 9) 3D printers are capable of making almost anything, from toys to houses.



D Machine Learning

The world's brightest minds have developed a(n) 10) a set of rules for computers, which allows machines to learn and teach themselves to perform tasks that they were not originally intended to. We are already seeing the benefits of their research in the form of virtual 11) on smartphones, but there will undoubtedly be an array of incredible 12) for this technology in the near future.



OVER TO YOU! 11.1.6 11.1.10 11.3.6 11.5.7 11.6.5 11.6.13

Collect information about other technological advances. Present them to the class.

8a Apps in Education

Vocabulary

- 1 **11.3.10** **11.3.6** Which of the following do you have experience of? Tell the class.

ONLINE EDUCATION



online course



educational apps



online counselling



distance learning



cloud library



creative teaching



virtual education



online tests

Reading & Listening

- 2 **11A.2** **11A.3** Look at the picture and read the title of the text. What do you know about the four Cs? How can education apps be used in a classroom to help you develop the four Cs?
 Listen and read to find out.

Check these words

confine, worksheet, resources, aid, reference, (be) integrated (into), detract (from)



In the 21st century, digital technology influences every aspect of our lives, so instead of confining it to ICT lessons, it makes sense that we utilise it in all parts of the curriculum. How? Well, the options stretch as far as your imagination! In this article, deputy head teacher Zara Jones explains what her favourite classroom apps are, and how they help her students develop the four Cs: the essential skills of critical thinking, creativity, collaboration and communication.

- A** I maintain that a bit of healthy competition is a great motivator in the classroom. **Kahoot** is an app which allows you to turn your lesson into a game – no programming skills required. Just upload your questions and answers to Kahoot's website, and they will make the information into a game that can be played on classroom computers. Students can also exercise their creativity and make their own games.
- B** I guarantee that **Google Classroom** will revolutionise the way you teach. You can hand out homework, collect and mark it virtually, which has environmental benefits, as well as helping your less organised students to keep track of their assignments. You can also use the app to distribute worksheets or other resources in class, and to make announcements. Additionally, use it to develop communication and critical thinking skills by creating an online forum for students to discuss their ideas.
- C** **Studydrive** is a favourite of mine because it puts your students' learning in their own hands. Of course, teachers can use it to share study guides, videos and sound recordings that we have produced ourselves, but students can also make their own flashcards and revision aids and share them with their classmates. It encourages students to be creative and to collaborate, and doesn't even require them to put down their smartphones!
- D** **Seesaw** is a great way to bring students, parents and teachers together in one online space. I started using it last year and it was a great success. My students told me that because they could post their work to show their parents, they were inspired to do their best. Parents said the app has helped them understand how to better support their children. It's also a handy resource for teachers to reference during meetings with parents.

It's my personal belief that technology should be integrated into every part of our education system. After all, school is not supposed to be an echo of the past, but a mirror of the real world our students live in. To that end, digitising the classroom is something I recommend. The use of interactive whiteboards, tablets, smartphones and apps in class doesn't detract from our children's education, but enhances it.

- 3 **11A.2** Read the text again. For questions 1-6, choose from apps (A-D).

Which app ...

- allows teachers to grade assignments online?
- creates an interactive game for the users?
- facilitates communication between three groups of people?
- provides an online space for student discussions?
- encourages students to produce high quality work?
- shares audio-visual content made by teachers?

- 4 **11.5.2** Complete the sentences. Use: integrate, bring, collaborate, develop, exercise, upload, grasp, distribute.
- 1 It's important to critical thinking skills from a young age.
 - 2 Designing their own games gives students the chance to their creativity.
 - 3 Teachers should use clear and simple language in class so that their students can the basic concepts of the lesson.
 - 4 We hope the competition will students from different schools together.
 - 5 These days, a lot of teachers use online platforms to worksheets or other resources.
 - 6 You can your notes to the app and it uses them to create a mind map.
 - 7 At my college, professors try to technology into every lesson.
 - 8 I'm going to with Berik and Erzhan on the project.

- 5 **11.1.3 11.3.2 11.3.6**  Which of the apps mentioned in the text do you find most useful? Why? Do you use any education apps? Why (not)? Discuss in pairs.

Grammar

Reported speech


see
pp. GR7 -
GR10

- 6 **11.6.10** Find examples of Reported Speech in the text. How do tenses/pronouns change from direct to reported speech?
- 7 a) **11.6.10** Change the following from direct speech into reported speech.
- 1 'Have you ever used Google Classroom?' Mr White asked his colleagues.
 - 2 'I downloaded a new app yesterday,' she said.
 - 3 'I'll help you revise for the exam tomorrow,' Gulnara said to Damir.
 - 4 'Who are you working on the project with?' Kairat asked me.
 - 5 'I was taking a test when you called me this morning,' he said to Aizhan.

- b) **11.6.10** Use the introductory verbs in brackets to report what was said.

- 1 'Don't use unreliable sources,' Mr Smith said to us. (warn)
- 2 'I have achieved 100% in all the tests,' Tom said. (claim)
- 3 'I lost the remote for the classroom projector,' Anna said. (admit)
- 4 'How can I create an online quiz?' Kyle asked. (wonder)
- 5 'Let's make our own flashcards,' said Julie. (suggest)

Listening

- 8 **11.2.2**  You will hear a radio host speaking to a teacher about the use of apps in the classroom. For questions 1-8, complete the sentences.

Ms. Smith works as a teacher in the **1** school.

For Ms. Smith, apps are an extremely useful **2** in the classroom.

Exercise increases the amount of **3** reaching the students' brains.

Exercise apps can help the **4** from one topic to another.

In the note-taking app, Ms. Smith has created a folder for all of her **5**.

Ms. Smith utilises the note-taking app almost on a(n) **6** basis.

Ms. Smith finds the app extremely useful during **7** with parents.

The host believes that a popular feature of an app for teachers is its ability to save users **8**.

Speaking & Writing

- 9 **11.1.3 11.1.7 11.3.2 11.3.6**  Are you in favour of or against teachers using apps in a classroom? Why? Discuss in groups.

- 10 **11.1.6 11.1.9 11.1.10 11.5.2 11.6.5 11.6.13** 

Think! Design your own classroom app. Include: name, technical characteristics, who it is appropriate for, how it can be used in a classroom, how it can help students around the world, any special features. Present it to the class.

8 Apps for personal and professional use

Vocabulary & Reading

- 1 **11.3.10** **11.A.3** Read the title of the text and look at the pictures. Do you use any of these apps? How do you think they can help us?

🔊 Listen and read to find out.



Software
you app-solutely
need in your life

Life is full of small problems; tiny bumps and hiccups that make our daily lives just a bit more challenging. However, the invention of smartphones has given us a means of solving these problems at the touch of a button. Take a look at our selection of handy little apps that will help you out in both your professional and personal life.

> Professional Life



Keyboard App

Handheld devices are perfect for messaging friends or posting a comment on social media, but they show their limitations with larger tasks, like composing an email. A quick reply is one thing, but writing a longer response on a small keyboard can be impractical. Using gesture detection, the keyboard app predicts the word you want to write, making typing much faster and simpler, and allowing you to respond to important emails at a moment's notice when you're out of the office.



Vault App

For anyone who works from a smartphone, a vault app is an ideal way to guard sensitive information. Any important emails, documents and passwords can be safely stored in an encrypted vault, so that your privacy is protected. Security is key in the professional world, so it's a must-have.



Brainstorming App

When it comes to creative projects, it's important to have a place to explore different ideas. Brainstorming apps are possibly the best way to do this. Opening the app will bring up a digital noticeboard, and a simple tap will pin an idea exactly where you want it. Mapping out ideas has never been so easy, and you can easily save them for later use.

> Personal Life



E-Reader App

If you spend a lot of time commuting, why not put that time to good use and do some reading? With an e-reader app, you can have a whole library in your pocket, with thousands of great books to choose from. It'll make your morning journey a whole lot more enjoyable.



Taxi App

If you need to get somewhere in a hurry, a taxi app can be a lifesaver. This app tracks your location using satellite navigation and finds the closest available taxi for you. It's a simple and easy option, and supports card payments too, so you don't need to worry if you are short of cash.



Nutrition App

Nutrition apps are tools that can improve your quality of life right away. By using the barcode scanner in your phone, the app can instantly provide specific details about a food product. The user receives information about the ingredients, nutritional value, calories and more, making it super simple to enjoy a healthy, balanced diet.

Check these words

gesture detection, vault, encrypted, track, nutrition

- 2 **11.4.2** Read the text again and decide if statements (1-6) are T (true), F (false) or DS (doesn't say).
- Keyboard apps can interpret hand movements.
 - Vault apps are usually password-protected.
 - Brainstorming apps provide new ideas to work with.
 - E-Reader apps are designed for use while travelling.
 - Taxi app users aren't required to carry cash.
 - Nutrition apps tell users exactly what a food product consists of.

- 3 **11.5.2** Fill in: navigation, information, scanner, value, detection, device, vault, noticeboard. Then use the completed phrases to talk about the apps in the text.

- | | |
|-------------------|---------------------|
| 1 sensitive | 5 barcode |
| 2 handheld | 6 nutritional |
| 3 encrypted | 7 digital |
| 4 satellite | 8 gesture |

Grammar Verb Complementation

see
p. GR16

- 4 **11.6.5** Match the two columns to form sentences. Then identify the type of verb complementation.

- | | |
|---|---|
| <input type="checkbox"/> 1 I managed | a. to use an app to call my friend in Australia. |
| <input type="checkbox"/> 2 Some of the app icons have disappeared | b. to use an app to call my friend in Australia. |
| <input type="checkbox"/> 3 Could you forward | c. heard on the class project. |
| <input type="checkbox"/> 4 We all worked | d. how we should use apps to revise for our exams. |
| <input type="checkbox"/> 5 Do you remember | e. from the home screen. |
| <input type="checkbox"/> 6 Quantum computers sound | f. automatically on some devices. |
| <input type="checkbox"/> 7 Our teacher explained | g. learning about additive manufacturing at university? |
| <input type="checkbox"/> 8 App updates start | h. me Nurlan's email address? |

Listening & Speaking

- 5 **11.2.2** Listen to an interview with a mobile app expert. For questions (1-5), choose the correct answer (A, B or C).
- What does Lucy's job involve?
 - designing smartphones
 - downloading apps
 - creating mobile software
 - What can app development tools do?
 - teach you different types of code
 - make coding for an app easier
 - help developers create new operating systems
 - What does Lucy say is a disadvantage of app building programs?
 - They can be expensive to use.
 - They don't offer many features.
 - They don't allow you to be very creative.
 - Lucy advises listeners to
 - learn code before making an app.
 - seek the help of an app developer.
 - plan their app before they design it.
 - What is the host's attitude towards apps?
 - He thinks they are useful tools.
 - He thinks there are too many of them.
 - He doesn't like using them.

- 6 **11.1.4 11.2.2 11.3.2 11.3.8 11.3.7** Listen to the recording again. How can someone create an app? Make notes. Compare with your partner.

Project Create your own app

- 7 **11.1.10 11.2.1 11.2.7 11.3.3 11.5.3 11.6.5 11.6.10** ICT Use the information from Exs 5 and 6 and do your own research to create your own app. Prepare and give a presentation describing the process to the class. The class votes for the best app.

8 Technology (Digital natives & Future careers)

Vocabulary

- 1 **11.5.2** Fill in: content, posts, media, users, recommendations.

GENERATION C

The C stands for:

- **connection** – they are multi-screen
 - 1) and 90% sleep with their phone next to them
- **creation** – they love expressing themselves through written
 - 2) , music and video: 90% create new material for the Internet every month
- **curation** – they interact with and share
 - 3) they relate to: 85% rely on peer
 - 4) when buying a new product
- **community** – they socialise online: most use social
 - 5) daily, 55% are connected to more than 100 people, and 15% of those to more than 500

Reading & Listening

- 2 **11.A.3** How is Generation C affecting the world economy? Read the text to find out.

Check these words

digital natives, tech savvy, adblocker, affinity, recruit, mindset



Generation C is a little different to Generation Z or Millennials. **1** More actively **engaged** with the Internet than any other group, Generation C are digital natives, and totally tech savvy – most have a number of devices, all connected to the Internet, and they can seamlessly move from using one to another.

The Connected Consumer

Gen C live the online experience. They rely upon the Internet for almost everything, from booking holidays to finding bus timetables. It is their **primary** source of information, but they also create online **content**. Members of Gen C leave online reviews of products they've purchased, hotels they've stayed in, and meals they've eaten. **2** As many as 88% of Gen C have social media profiles, and 65% of those choose to post updates on a daily basis.

Communicating with Generation C

In this era of hyper-connectivity, a TV commercial or a **classified** ad is no longer the best way to sell your product. In spite of their Internet **presence**, typical online advertisements may not attract many customers either, since many members of Generation C will choose to use an adblocker. **3** In fact, in January 2019, statistics showed that more than 3.4 billion people were **active** social media users and this number is only expected to grow as more and more people become part of Generation C.

Career Paths of Gen C

Generation C's affinity for technology and social media has had a huge effect on the world's economy. The global tech market is now worth trillions, and **corporations** have already begun hiring people for the sole purpose of managing their social media accounts. **4** But the Internet has also made it possible for individuals to carve out their own paths, with many rejecting the idea of a **conventional** career path. Social media, paid-partnerships and crowd-funding sites have given Gen C the ability to monetise their lifestyles and become **private** entrepreneurs, and as a result they may find they have little need for the traditional employer-employee dynamic.

- 3 **11.2.3 11.4.7** Read the text again. Match the sentences (A-E) to the gaps (1-4). There is one extra sentence.

🔊 Listen and check.

- A Whether you're advertising a product or recruiting new staff, social media is the best way to reach a large audience.
 B They are not defined by date of birth, but by their mindset.
 C As tech companies expand to stay competitive, careers as web developers, programmers and support specialists are opening up.
 D Generation C use their time more efficiently than the generations that came before them.
 E They are always on the lookout for that shareable experience, and are constantly connected.

- 4 **11.1.1 11.1.3 11.1.7 11.1.8 11.1.9 11.1.10 11.3.2 11.3.3 11.4.2** Now, answer the questions.

- Do you belong to Generation C? Why (not)?
 - What is the impact of Generation C on marketing and advertising and the rest of the world?
 - How will Generation C shape the future of technology careers?
 - Think!** What are the advantages and disadvantages of belonging to 'Generation C'? Discuss in groups. Tell the class.
- 5 **11.4.5** Match the words in bold with their meanings: companies, involved, main, material, categorised, stereotyped, existence, currently interacting.


Grammar

Prepositions (with nouns/adjectives/verbs)

- 6 **11.6.13** Choose the correct preposition. Check in your dictionary.

- Our generation **is accustomed to/with** using technology in everyday life.
- It's a **great** idea, but is there really a need **in/for** another social media app?
- My doctor doesn't approve **of/about** people **trying** to diagnose themselves online.
- I'm afraid I'm **dissatisfied by/with** this app.
- The app looks great, but **in/at** practice it's fairly useless.

Prepositional phrases – Clauses of concession – Multi-word verbs

- 7 **11.6.14** Choose the correct preposition.  see p. GR10
 Check in your dictionary.

- The Internet is something that young adults all over the world have **on/in** common with each other.
- I'm opening this email account **in/on** behalf of my mother because she's not very tech-savvy.
- The popularity of social media, in respect **of/with** number of users **worldwide**, is definitely increasing.
- In spite **from/of** the growing health trend, some people are **not fond of** physical exercise.
- She **gets on well with/to** her colleagues.
- The total cost is £119.50. You can make the cheque **out/up** to Anderson Plumbers Ltd.

Listening & Speaking

- 8 **11.7.2** 🎧 Listen to a job interview. What is Jane's current job? Which job is she being interviewed for? Listen and check.

- 9 a) **11.2.2** 🎧 🎧 Listen to the recording in Ex. 8 again. Which phrases from the Useful Language box below can you hear? Tell your partner.
- b) **11.3.2 11.3.3 11.3.6** 🎧 🎧 An IT company is advertising for someone to manage their social media accounts. In pairs, use the language in the box to act out a job interview similar to the one in Ex. 8.

Interviewing a person for a job	Replying
<ul style="list-style-type: none"> • Please, have a seat. • Tell me about yourself. • Why should we consider you for this job/employ you? • Why do you want this job?/Why do you want to work here? • Do you have any relevant experience? • When can you start? 	<ul style="list-style-type: none"> • Thank you. • I'm ... old, ... • I'm (hardworking, kind, caring, sensible, etc.) • I want to ... • I have worked as ... • Right away./Next week.

Writing & Speaking

- 10 **11.1.8 11.1.10 11.4.4 11.4.6 11.5.1 11.5.2 11.5.3 11.5.5 11.5.7 11.6.5 11.6.13** **ICT** Collect information about other career options that would interest a 'digital native'. Prepare and give a presentation.

8d Writing

An information leaflet

Writing Tip

Information leaflets are written in both formal and informal situations. They have a **main heading**, and are usually divided into sections with **subheadings**. They are written in the present tenses. The content should be presented in short, simple sentences. For **formal leaflets**, you should use official language and you can write in the passive voice. For **informal leaflets**, you should write in the active voice and you can use persuasive language and idioms.

You should avoid:

- long headings/subheadings
- including too much information in your leaflet
- slang and colloquial expressions

Rubric analysis

- 1 **11.5.2** Read the rubric and discuss the questions which follow.

Some lecturers from abroad are due to visit your university for a series of seminars but they know very little about the area. You are President of the Students' Union and have been asked to write an information leaflet to be sent to the visitors in advance of their arrival. You should include details about the university, the area and the activities that are available to them during their stay. Write your leaflet (150–200 words).

- 1 Who are the target readers?
- 2 How formal does your writing need to be?
- 3 What kind of information do you think your target readers would like to be given? Should you include details about the seminars? Why (not)?

Model analysis

- 2 **11.1.8 11.1.10 11.4.1 11.5.2** Read the model and choose the most appropriate headings from those given, giving reasons for your choices. Then answer the questions that follow.

- 1 Does the information leaflet include all the points in the rubric? Is it well-structured?
- 2 How would you describe the register of this model?
- 3 Circle the descriptive adjectives. Can you suggest alternatives?
- 4 Suggest alternative headings.

Nazarbayev University

1) About your visit/Nazarbayev: Where it's all happening!

The following information should help you to get the most out of your forthcoming visit to our university. We have included details about the university and the local area, as well as some things you will be able to see and do during your stay.



2) A range of subjects to study/The university

Nazarbayev University was founded in 2010 and its modern facilities are among the best in the world: comfortable and spacious halls of residence, state-of-the-art sports facilities, and laboratories that are the envy of many of the more established institutions. NU boasts a wide range of degree courses, all of which are taught in English, with an emphasis on training the leaders and innovators of the future.

3) The city and the surrounding area/ A nice place to visit

NU is on the outskirts of Kazakhstan's ultra-modern capital city, Nur-Sultan, and there are many spectacular monuments and museums nearby. The city itself is a lively commercial centre with lots to do.



4) Let your hair down!/Events and activities

There are a great many events and activities on offer. There is a concert hall and an opera house in the city, and the student body regularly organises cultural events.



5) Enjoy your stay/See you soon!

We hope your visit will live up to your expectations. The staff and students will certainly do whatever we can to make your stay a pleasant one.

Register

- 3 **11.5.2** Look at the underlined words/phrases in the model. Are they formal or informal? Match them with their synonyms below.

- will be just what you're looking for
- set up
- edge
- older universities
- bustling
- roomy
- are admired and wanted by
- while you're here
- approaching
- you can do
- breathtaking

Formal & Informal language

- 4 a) 11.4.5 11.5.2 11.5.4 Match the informal words/phrases with their formal equivalents.

Informal	Formal
1 It's a good idea to	a operating
2 be into	b be interested in
3 plenty of	c sufficient
4 be after	d be looking for
5 brush up on	e we recommend
6 up and running	f improve

- b) 11.4.5 11.5.2 Now use the phrases above in formal and informal sentences of your own.

Formal: We recommend students attend one of the many science fairs.

Informal: It's a good idea to go to all science fairs.

- 5 11.1.8 11.1.10 11.4.5 11.5.2 11.5.4 The model in Ex. 2 was written to appeal to visiting lecturers and is formal. The extract below has been written in more informal style, suitable for school students. Fill in the gaps with the expressions given.

- if you're keen on • is the place for you
- you'll know exactly what to expect • there are lots of different courses • you'll find all the information you need • you're sure to love



We've created this leaflet especially for students who are visiting NU on the next Open Day. Here

- 1) about studying and living on campus, so 2) when you arrive.

Something for everyone

NU is a young university. Since 2010, it has been home to the country's brightest students, learning from the smartest teachers from all over the world. The labs have the newest equipment, the halls of residence are large and comfy, and 3) sports, 4)

NU's modern sports facilities, 5) available here, all taught in the language of global communication: English! NU 6) if you've got a passion for your subject and a drive to succeed!

Your turn

- 6 a) 11.5.7 Read the rubric and answer the questions.

You work as a secretary at Hampton University. The university is organising a week-long trip to Nur-Sultan, Kazakhstan. You have been asked to write an information leaflet for the students who will go on the trip, giving information to make their stay comfortable (150-200 words).

- 1 What style do you have to use?
- 2 Will your information be based primarily on personal knowledge or research?

- b) 11.2.2 11.3.2 11.3.3 11.3.5 11.4.5 11.5.2 Brainstorm for ideas. In pairs, tick (✓) which ones you should include in your text. Tell the class.

- 1 location
- 2 length of flight
- 3 weather conditions
- 4 clothing
- 5 map of place
- 6 diagram of route from airport to hotel
- 7 code of behaviour
- 8 history of place
- 9 population
- 10 local cuisine
- 11 places to visit
- 12 cost
- 13 shopping
- 14 available transportation

- c) 11.4.4 11.5.1 11.5.2 11.5.3 11.5.6 11.5.5 11.5.6 11.5.7 11.5.9 11.6.14 Write an information leaflet for the task in Ex. 6a. Use the plan and your answers in Exs 6a and 6b to write your leaflet. Use appropriate style and register. Use pictures to illustrate your leaflet.

Plan

Title: attract the reader; state the general content

Introduction: state the objective of the leaflet

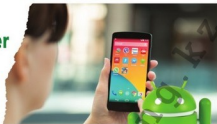
Main body: divided into clearly labelled selections

Conclusion: summarise the main points



8e Culture Corner

- 1 **11.1.10 11.4.3** How did Android OS start? What makes it popular? Write down two questions. Read the text to see if you can answer your questions.



The Past, Present and Future of ANDROID OS

In 2003, in California, USA, four friends started a small company together. Rich Miner, Nick Sears, Chris White and Andy Rubin wanted to develop software for digital cameras, enabling them to connect wirelessly to their owners' PCs, and upload photos **1)** an online space. Soon after, the market for digital cameras started showing signs of decline, **2)** the founders of the newly-formed Android Inc. weren't deterred. They simply decided to shift their focus to adapt. **3)** the words of Andy Rubin, "the exact same platform, the exact same operating system we built for cameras" to be used on mobile devices. In 2005, technology giant Google bought Android Inc., but their project remained a secret. In 2007, Apple released the first smartphone, causing Google to reveal **4)** they were working on a similar project. In December of 2008, the first Android phone **5)** released. Over the next 10 years, many versions of the Android operating system (OS) were released, **6)** one with new improvements and features. Version 1.6 saw the first appearance of the Gallery for users' pictures and videos, version 4.0 introduced facial recognition technology to unlock the screen, and version 6.0 allowed users to unlock their phones with a fingerprint ID.

By 2018, Android was the most popular operating system in the world, and got **7)** a small margin. It held over 75% of the market share then, and **8)** figure is still rising. The main reason for **9)** popularity is the fact that Android is free, open-source software. This means that it can run **10)** a huge variety of devices, and manufacturers can customise it to suit their products, which can then **11)** sold at more affordable prices. In contrast, Google's main competitor in the smartphone market uses an operating system that only runs **12)** two types of device. Another reason that the use of Android OS is so widespread is that it isn't limited to smartphones and tablets. It's also used for Google's wearable technology, artificial intelligence system, and **13)** an operating system for the smart house concept, connecting mobile devices to your TV, lights and thermostat. The technology industry is only going to get bigger in years to come and, **14)** current trends stay the same, the majority of it will likely be powered by Android. So you **15)** better get used to seeing that cute green robot logo because he's not going anywhere!

- 2 **11.2.2 11.4.2** Read the text again and fill in the gaps with an appropriate word.
 ☞ Listen and read to check.

- 3 **11.3.2 11.3.6 11.5.2** Fill in: system, screen, recognition, intelligence, software, technology, space, fingerprint. Then use the completed phrases to make sentences based on the text. Compare with your partner.

- | | |
|--------------------|---------------------|
| 1 wearable | 5 |
| 2 facial | 6 artificial |
| technology | system |
| 3 online | 7 operating |
| 4 unlock the | 8 open-source |

Check these words

founder, deter, shift (their) focus, release, open-source

- 4 **11.1.10 11.2.2 11.4.8 11.5.6 11.5.7 11.6.5 11.6.13 ICT** Collect information about a technology company in your country or another country. Include: name, type/industry, location, a short history, products, statistics and any interesting facts. Present it to the class.



Curricular: Design & Technology



We're all familiar now with 3D technology in films and on TV, but it seems all this might soon be competing with an even more advanced technology – holography. Whereas a 3D image appears on a flat screen, a holographic image is a laser projection of light that looks as if it was standing right in front of you, allowing you to walk around and even through it.



A TV & INTERNET

Ever since a holographic Princess Leia appeared out of the robot R2-D2 in *Star Wars*, sci-fi fans and researchers have dreamt of the day when such technology would become a reality. Well, that day is almost here. CNN used holographic technology during the 2008 US Presidential Election coverage to make their news correspondent appear as if she was in the studio even though she was several states away. Advances in laser technology mean that in just a few years holograms might be projected from our TVs right into our living rooms! As for the Internet, we got the first glimpse of what this might look like in the 2002 movie *Minority Report* starring Tom Cruise. There would be no mouse or keyboard, just a holographic screen allowing you to 'walk through' the Internet using your hands as the controls.

Holography the new 3D

B MUSIC

As the band members of the virtual English band Gorillaz are just cartoons, going on tour used to be out of the question. That was until their lifelike holograms appeared live on stage at the MTV Europe Music Awards. Hatsune Miku, a 16-year-old Japanese pop star is also a hologram based on a cartoon design. She has already performed a sell-out tour and topped the charts several times.

C FASHION

Alexander McQueen's unforgettable hologram of British model Kate Moss in 2006 left its mark on the fashion world, inspiring many designers to follow. Fashion houses such as Burberry, Diesel and Forever 21 are now turning to holographic images instead of using real-life models on their catwalks. Forever 21 had a fashion show with model holograms walking up stairs that weren't there and even appearing magically from falling drops of water. Could this be the future of the runway?

Soon, there will also be holographic touchpads instead of keys, holophones for really personal calls and it'll even be possible to hold conferences at home with holographic work colleagues! So holography isn't just taking the media world by storm, it's also set to transform the way we live our lives!

Check these words

presidential election, coverage, glimpse, catwalk, conference

- 1 **11.2.2** **11.4.3** Read the title, the introduction and the subheadings in the text. How can holography be used in each of these categories?

🔊 Listen and read the text to find out.

- 2 **11.4.2** Read again and complete the sentences with information from the text, using your own words.
- Holographic technology differs from 3D technology because
 - A major news event that holography was used to report was
 - A holographic Internet would be different to today's Internet because
 - Gorillaz couldn't go on tour because
 - Hatsune Miku has become so successful she
 - The first hologram in the fashion world was created by

- 3 **11.5.3** Fill in: *news, fashion, sell-out, advanced, top, flat*.

1 technology; 2 screen; 3 correspondent; 4 tour; 5 to the charts; 6 show

- 4 **11.4.5** Find words/phrases in the text which mean: *brief look* (text A); *not possible* (text B); *having an effect on, do the same* (text C).

- 5 **11.3.2** **11.3.6** **11.3.7** **THINK!**
What three things did you find most interesting in the text? Tell your partner or the class.

- 6 **11.1.10** **11.5.1** **11.5.2** **11.5.3** **11.5.7**
11.6.5 **11.6.13** **ICT** Collect information about how holography could change our lives. Use the key word *holography*. Tell the class.

8 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- He's never been able to a job for more than a year. (**keep**)
- The study the emotions of the subjects. (**made seem insignificant**)
- They are going to DNA kits to €70 tomorrow. (**reduce price**)
- Her results aren't valid because she the acid too much. (**made weaker**)
- He's going to from his position as CEO at the end of the year. (**resign**)
- We need to the number of candidates to less than 50. (**reduce number**)

- 2 **11.6.13** Choose the correct preposition.

- The Internet has a huge effect **to/on** modern life.
- There is a huge array **of/about** apps available.
- Modern technology is intended **to/for** make our daily lives easier.
- Nowadays, you can order a taxi **at/on** the touch of a button.
- You can pay for most things **by** card if you are short **off/in** cash.
- Younger people tend to be more engaged **with/in** current technology.
- Virtual reality is not just confined **to/in** video games.

Collocations

- 3 **11.5.2** Fill in: scanner, transactions, assistant, computers, whiteboard, device, presence, path.

1 interactive	5 career
2 quantum	6 monetary
3 Internet	7 handheld
4 barcode	8 virtual

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- A navigation app is a resource to have if you get lost. (**HAND**)
- organisations aim to aid learning by giving each child a laptop. (**PROFIT**)
- I want to find a way to my blog and make some extra cash. (**MONEY**)
- Paying with cash can be at times. (**PRACTICE**)

Words often confused

- 5 **11.5.2** Choose the correct word.

- Collaboration/integration is the key to creating new, innovative technologies.
- Machine learning will allow computers to surpass the limits/limitations of their programming.
- This software will protect your sensitive/sensible personal information.
- The availability of Wi-Fi allows people to stay in constant/continual contact.
- A typical/characteristic member of Generation C owns a variety of devices connected by Wi-Fi.



Kazakhstan in Action!

Read and choose the correct item.

- Developers in Kazakhstan are continually making 1) improvements/advancements to existing systems. Pyotr Shilov, a young student, is just one example. He created a program which 2) avoids/prevents cyberattacks 3) by/from remotely revealing weaknesses in websites. In an era when Internet security is 4) so/as important, this is a huge development. (Source: Kazakh TV)
- Nazarbayev University has 5) collaborated/participated with VIST Group JSC and KAMAZ PJSC in Russia to build a robotic vehicle. The vehicle will be capable of object 6) recognition/identification, and will be able to 7) say/tell the difference between people, road signs, animals and more. What's more, it will even be able to adjust its route according 8) to/with identified obstacles, and could have a big 9) part/role to play in the future of the 10) logistic/logistics industry.

Progress Check 8

Reading

- 1 **11.4.2** Read the text. For questions 1-6, choose from the technological advances (A-E).

Which technological advance ...

- 1 takes climatic conditions into account
- 2 simulates a social interaction in a realistic way?
- 3 allows us to control our environment?
- 4 is difficult to put into practice?
- 5 can help with interior design?
- 6 will be used by both consumers and companies?

The Tech of Tomorrow

Technology moves at a blistering pace. Staying up to date can be tough, so here are five cutting-edge technological advances that everyone should keep an eye on.

A Autonomous Vehicles

Automotive companies are already producing self-driving vehicles, with some using lasers, cameras, radar and sonar to create an internal map of their immediate environment. They're an exciting prospect at the moment for several reasons. Not only will they make travelling easier for the everyday user, but their ability to drive nonstop will prove incredibly useful in global delivery services.

B Smart Cities

Smart cities are hyper-efficient communities which can track and communicate air quality, pollution levels, temperatures, rainfall, traffic flow and much more. Interestingly, the technology for this idea already exists; the challenge lies in implementation. Creating an infrastructure for citywide wireless communication means putting processors in streetlights, mailboxes and more. There is still a long way to go, but experts believe they can change our perceptions of what a city should be.

C Augmented Reality

Augmented reality is unique in that it changes how we view, and interact with, the world that we inhabit. The technology is extremely impressive, and there are already apps which provide users with background information on their environment as they walk, or allow them to simulate how pieces of furniture might look in their homes. There is virtually no end to the possible applications of augmented reality.

D Internet of Things (IoT)

The Internet of Things is a communication network between machines. By connecting a variety of devices, appliances and even vehicles through Wi-Fi, users are given complete command of their surroundings. Take smart homes for instance, where you can turn off your lights by voice command, or lock your doors remotely. Simply put, the Internet of Things is the way of the future.

E Chatbots

Chatbots are software applications which can imitate human speech and written communication. They are capable of engaging in conversation with real people, and it's become common practice to use them in customer service. They are currently on the rise, and their ability to store feedback and quickly retrieve relevant information means that they will only become more valuable over time.

Listening

- 2 **11.2.2** Listen to an interview with a member of Generation C. For questions 1-5, choose the correct answer (A, B or C).

- 1 What determines whether a person is part of Generation C?
 - A writing their own online content
 - B having an active social media account
 - C understanding and spending time in the online world
- 2 What does Alice think about the Internet?
 - A It has changed global culture.
 - B It makes people antisocial.
 - C There's too much information available.
- 3 What motivates Alice to follow another person on social media?
 - A the quality of the products she buys from them
 - B the size of their existing community
 - C the value she gets from their free content
- 4 What are companies doing more often these days?
 - A sharing personal stories
 - B hiring influencers
 - C tailoring their products to suit Gen C
- 5 What is a popular career for members of Generation C?
 - A working for social media companies
 - B working for entrepreneurs
 - C creating their own businesses

5x2=10 marks

6x3=18 marks

8 Progress Check

Vocabulary

- 3 **11.5.2** Fill in: process, integrate, reference, detract, respond, attract, expand, recruit, customise, adapt.
- Cryptocurrencies are controversial, so they tend to a lot of media attention.
 - Although social media is at times misused, that doesn't from its usefulness.
 - In order to stay relevant, companies must their practices and keep up with modern tech.
 - These days, employers usually staff through online advertisements.
 - Computers in the future will be able to data at an incredible rate.
 - With the right apps, it's possible to every aspect of your phone.
 - Digital filing systems make it easy to find and important information.
 - Schools around the world have begun to technology into their teaching methods.
 - The Internet is a great source of information that will allow you to your knowledge base.
 - Studies show that students well to the use of technology in the classroom.

10x2=20 marks

Grammar

- 4 **11.6.7b** Turn the sentences into reported speech.
- 'I designed this app,' Sue said. Sue claimed ...
 - 'I will drop by the university library later today,' Ben told Ann. Ben said ...
 - 'Are you going to spend your holidays with your cousins in Almaty next summer?' Kanat asked Aizhan. Kanat asked ...
 - 'How have all these icons appeared on my desktop?' Sue asked herself. Sue wondered ...
 - 'Don't touch the screen,' the sales assistant said to us. The sales assistant warned us ...
 - 'Let's visit Nur-Sultan today,' said Berik. Berik suggested ...
 - 'I broke your keyboard,' Ulan said to me. Ulan admitted ...

7x3=21 marks

- 5 **11.6.5** Match the phrases to form sentences. Then identify the type of verb complementation.

1	Jon insisted	a	you the link yesterday
2	You should stop	b	mapping.
3	His ideas on	c	that they visit the
	online education	d	museum.
	sound	e	interesting.
4	I sent	f	downloading apps from
			unreliable sources.

4x2=8 marks

- 6 **11.6.13** Choose the correct item.
- I created the app in/with collaboration with my IT teacher.
 - He said he posted the photo for/by accident, but I don't believe him.
 - You have to write your emails in/at accordance with company guidelines.
 - My father is away with/on business in the USA.
 - I'm tired of/with watching TV shows - they don't interest me anymore.

5x1=5 marks

Writing

- 7 **11.5.1** **11.5.3** **11.5.5** **11.5.7** Read the rubric and write your information leaflet.

You work as a teacher at a school in London. The school is organising a visit to your town. You have been asked to write an information leaflet for the students who will participate in the visit, giving information to make their stay comfortable (150-200 words).

18 marks

Total: 100 marks

Check your Progress

- talk about technological advances, apps in education, apps for personal and professional use _____
- talk and write about digital natives and future careers _____
- use the reported speech, verb complementation, prepositions (with nouns/adjectives/verbs), prepositional phrases, clauses of concession, multi-word verbs _____
- interview a person for a job and reply _____
- write an information leaflet _____

GOOD ✓ VERY GOOD ✓✓ EXCELLENT ✓✓✓

Module 9

The Clothes of Chemistry

Vocabulary: synthetic materials, fabric properties, resources and processes involved in manufacturing clothes (wearables & enhanced clothing, psychotextiles), researching the textile industry

Grammar: adjective complements, adverbs/adverbial phrases (pre-verbal, post-verbal, end-position), apposition/textual referencing

Everyday English: discussing an issue – expressing concern/hope

Phrasal verbs: verbs with into

Writing: a report

Culture Corner: The Welsh National Costume

Curricular (Design & Technology): *The Journey of Your Cotton Clothes*



Synthetic Materials

Long ago, people made their clothes from animal hides. Later, they learned how to use plant fibres to weave cloth. Even today, some cloth is still made in this way, but much of it uses synthetic fibres created through chemical reactions. Synthetic materials can be engineered to have specific qualities.



Wrinkle resistant



Stain resistant



Flame resistant



Antimicrobial



Hydrophilic



Hydrophobic



Waterproof



Stain release

- HEAT-SET fabrics do not shrink or 1) easily.
- FLAME RESISTANT fabrics can self-2) if they catch fire, whereas flame retardant fabrics don't catch fire easily and take a long time to burn.
- ANTIMICROBIAL fabrics contain a chemical 3) that destroys or slows 4) of microbes which can cause 5) and odours.
- HYDROPHILIC fabrics 6) moisture, but hydrophobic fabrics 7) moisture. Synthetics are hydrophobic by nature, but can be chemically altered to give them hydrophilic 8)
- WATERPROOF fabrics are completely 9) to water.
- STAIN RELEASE fabrics allow 10) to be absorbed, but they wash out easily.

Introduction Vocabulary

- 1 [11.1.10] [11.3.6] [11.3.7] [11.5.2] Look at the picture. How is polyethylene terephthalate most commonly known? How is it related to synthetic materials? Check in your dictionary.

Polyethylene Terephthalate



- 2 [11.4.3] Read the text and fill in: extinguish, mould, resistant, absorb, wrinkle, properties, repel, substances, growth, compound.
 Listen and check.
- 3 [11.3.6] [11.5.1] Say two things you have learnt about fabric properties. Tell the class.

Did you know?

A cotton T-shirt takes 1-5 years to break down in landfill, whereas a polyester one could take as many as 200 years.

OVER TO YOU! [11.1.8] [11.3.6] [11.3.7] [11.4.4] [11.5.1]

Collect information about other fabric properties. Present it to the class.

9a Wearables & Enhanced Clothing

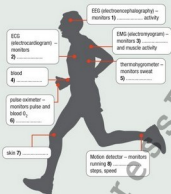


Modern Fashion:

A SCIENCE NOT AN ART

From natural fabrics to the creation of rayon in the 1800s, polyester in 1941 and kevlar in 1966, it is obvious that the clothing industry is always changing and developing. In the 21st century, it is entering new territory, as fashion meets digital technology.

Wireless Body Area Network



Wearable Wireless Body Area Network

A Wireless Body Area Network (WBAN) enables users to wear a variety of sensors or other devices that collect data. They can record information about our health, our activity, even the environment around us. This data is then uploaded to the Internet and can be stored in an app for personal use, or sent to a professional such as doctor.



A wearable power source

Since 2014, various garments have been developed that can charge the wearer's phone as they walk around. Some use energy from solar panels sewn into the fabric, others convert the kinetic energy generated from the wearer's movements to electricity. They are still being developed, but people are excited to try out these new items of clothing.

Smart fashion

In addition to wearing a jacket that acts like a battery, you can now turn your T-shirt into a giant touch screen! In recent years, a variety of clothing has been developed that includes fibres woven into the fabric that respond to touch. You can buy jeans that you can use to answer phone calls, control the volume of music on your smartphone, or ask for directions. There is even a brand of clothing for yoga enthusiasts that you can connect to an app during your workout. Once connected, tiny sensors use vibration to evaluate your posture. The app then uses this information to give you feedback on how to improve your posture.

Your personal doctor

Smart clothing might seem like a very modern idea, but as far back as 2001, scientist Sundaresan Jayaraman had developed a 'smart shirt' – a T-shirt which he described as a "wearable motherboard". It looks like an ordinary garment, but has threads woven into it that are capable of carrying data. These can be connected to a variety of external sensors and devices to give information about heart rate and body temperature. This data can be sent wirelessly and so the clothing has many applications, for example to monitor a newborn baby's breathing, or keep a check on a patient's heart rate after surgery.

A portable chemistry set

The one disadvantage to Jayaraman's 'smart shirt' is that it has to be plugged into an external device. More recently, chemist Joe Wang has experimented with printing sensors directly onto fabric. These sensors are not physical but chemical, and can detect chemicals in sweat that give information about the biological processes of the wearer. They can also be used to detect chemicals in the air, such as dangerous levels of pollution or heavy metals. These sensors even work under water!

Clothing Manufacturing: Resources & Processes (Part I)

Vocabulary

- 1 **11.43** **11.52** Read the definition. Look at the picture and fill in: pressure, production, brain, temperature, heart rate, nerve, technique, levels.

Reading & Listening

- 2 **11.43** How can smart clothing be related to Wireless Body Area Networks? How have scientists used various chemicals to enhance clothing?
 Listen and read to find out.

Say goodbye to the weekly wash

Tests have been carried out on wool and cotton clothing with fibres containing titanium dioxide. This chemical is activated by light and breaks dirt down into carbon dioxide and water. The idea is that wearers can hang their clothes straight out on the line – as long as they're hanging in a place with lots of light, they can clean themselves!

A breath of fresh air

Another use of titanium dioxide in clothing is to turn chemicals in the air into salts and water-soluble chemicals. These stay on the surface of the garment until the wearer takes it off and washes it, at which point they are washed out in the machine. Chemist and creator Tony Ryan claims, "A pair of jeans will take out about 2g of nitric oxide a day" from the atmosphere. It's not much, but if everyone in a city was wearing these clothes, imagine how much cleaner the air could be!

The world of fashion is unpredictable – who knew high heeled shoes without heels would be fashionable, or imagined that jeans with holes in them would become so popular? No one knows which of these developments will become mainstream in the years to come – we are all curious what the future of fashion holds.

Check these words

sensor, posture,
water-soluble chemicals

3 11.4.2 Read the text again and complete the sentences.

- The main reason for developing clothes that can produce electricity is to
- People use smart yoga clothes connected to an app to receive
- In order to function, the 'smart shirt' must be connected to
- Chemical sensors on clothing can be used to monitor the wearer's
- Titanium dioxide starts working when it is exposed to
- Tony Ryan wants to use smart clothing to clean

4 a) 11.5.2 Fill in: data, source, metals, set, sensors, processes, chemicals (x2), breathing.

- | | |
|----------------------------|-----------------------|
| 1 carry | 5 biological |
| 2 portable chemistry | 6 heavy |
| 3 monitor | 7 water-soluble |
| 4 detect | 8 external |
| | 9 power |

b) 11.3.7 Use the completed phrases in Ex. 4a to ask and answer questions based on the text.**Grammar**
Adjective complementssee
p. GR1**5 11.6.3 Find examples of adjective complements in the text.****6 11.6.3 Match the two columns to form complete sentences.**

- | | |
|--|---|
| <input type="checkbox"/> 1 Berkik was thrilled | a when he realised the project was a failure. |
| <input type="checkbox"/> 2 It is incredible | b whether the new design will work. |
| <input type="checkbox"/> 3 They're unsure | c to receive his smart jacket last week. |
| <input type="checkbox"/> 4 I'm glad | d when we heard the terrible news. |
| <input type="checkbox"/> 5 Nurlan was devastated | e how the idea of smart clothing has taken off. |
| <input type="checkbox"/> 6 We were shocked | f to have finally met you in person. |

Speaking**7 11.3.2 11.3.3 11.3.5 THINK!** How would you enhance clothing? What features and/or chemicals would you add? Discuss in pairs.**Project****Design your own smart outfit!****8 11.1.4 11.1.6 11.1.9 11.4.8 11.5.3 11.5.5 11.5.6 11.5.9 11.6.3 11.6.11**

ICT Do some internet research to find more information about smart clothing of the present and future. Use this information and your own ideas to design your own smart item of clothing. Present it to the class. The class votes for the most imaginative item of clothing.

9b Psychotextiles

Clothing Manufacturing: Resources & Processes (Part II) Vocabulary & Reading

- 1 a) **11.3.2 11.3.3** **THINK!** Which colour(s) are your favourite one(s)? How do these colours make you feel?
- b) **11.3.2 11.3.3** Look at some of the qualities associated with each colour. Check any unknown words in your dictionary. Do you agree with the descriptions?
- 2 **11.1.8 11.4.1 11.4.3** What do you think the psychology of clothes is? Is it connected to the 'psychology of colour' in Ex. 1b?
 Listen and read to find out.

Red

- Leadership
- Perseverance
- Destruction

Orange

- Power
- Energy
- Freedom
- Tolerance

Yellow

- Distraction
- Intelligence
- Originality
- Distraction

Purple

- Idealism
- Creativity
- Repentance

Pink

- Friendliness
- Femininity
- Maturity

White

- Integrity
- Openness
- Unity
- Ease

CLOTHES

What are your
telling you?



Colour psychology is complex, but most of us know the basics: red is associated with passion, energy or danger, blue with being calm, conservative or feeling melancholy. These ideas have been employed successfully in advertising and interior and product design for decades, and are even used in an alternative therapy, chromotherapy, to treat physical ailments. In this case, red is used to increase circulation and blue to reduce pain. Scientists are only just beginning to investigate how different patterns affect our brains, however, with the latest research being pioneered at a university in the UK.

Two researchers, George Stylios and Meixian Chen, conducted a study where they scanned their subjects' brains while showing them a variety of patterns. They discovered that different patterns, in their words, 'actively influence our psychological state'. During their study, they focused on the emotional responses of excitement and pleasure which, in neuroscience, are two separate reactions. Something can provoke excitement without being pleasing. Likewise, something pleasing is not necessarily exciting.

Stylios and Chen found that, when we see a symmetrical, intricate, regular pattern, our brains show signs of feeling excited and pleased.

A smaller and simpler pattern makes us

feel calm, but not very excited. An asymmetrical, non-repeating pattern evokes feelings of excitement, but not pleasure. However, they didn't conclude their research with these findings. They went on to produce woollen clothing using electrochromic fibres at the university. These fibres change colour in response to an electrical current. They are strong and can withstand bending and folding without losing functionality, so they are ideal for textiles. The researchers made four different garments with these fibres, and each one could change between two distinct patterns. They found that by switching between a weak and an intense pattern, or a repeating and a non-repeating pattern, they could change the emotional response of their subjects.

The smart clothing created by Stylios and Chen sounds like fun: you could change your outfit depending on the event you were attending, the time of day or the weather. But it is the ability of the clothing to influence the mood of those who see it that researchers are really interested in. Combined with colours, and maybe even sounds and smells, Stylios and Chen claim this technology could be a new 'visual medicine' that could engineer emotional responses and maybe even work as a therapy for mental health issues such as anxiety and depression. It's a fascinating idea, and one that continues to be explored as we learn more about the psychology of clothes.

Check these words

circulation, pioneer, provoke, evoke, electrical current

Green

- Stability
- Progress
- Jealousy

Light Blue

- Carelessness
- Calmness
- Reliability

Blue

- Organisation
- Steadfastness
- Idealism

Grey

- Realism
- Sadness
- Depression

Brown

- Reliability
- Common sense
- Depression
- Disappointment

Black

- Mystery
- Sophistication
- Suppression

- 3 **11.4.2** **11.4.6** **11.4.9** Read the article again. For questions (1-5), choose the correct answer (A, B, C or D).

- The connection between colour and emotion is
 - a recent discovery.
 - a simple subject.
 - common knowledge.
 - widely utilised by doctors.
- The primary objective of Stylios and Chen's study was to assess participants'
 - reactions.
 - mental health.
 - powers of observation.
 - levels of excitement.
- A disorganised pattern made people feel
 - at ease.
 - satisfied.
 - enthusiastic.
 - agitated.
- What does the writer say about the fabric of Stylios and Chen's clothing?
 - It can generate an electric current.
 - It is durable.
 - It is commonly used in the textile industry.
 - It shouldn't be folded.
- The writer thinks the idea of clothing influencing emotion is
 - worthy of further research.
 - unsupported by evidence.
 - hard to believe.
 - the answer to mental health problems.

- 4 **11.8.5** Match the words in bold with their meanings: elaborate, bring about, examined, endure, depression, reactions, developed, causes.

9b

see p. GR17

Grammar**Adverbs/Adverbial phrases**

- 5 **11.6.9** Look at the underlined adverbs/adverbial phrase in the text. Say which one appears in: *pre-verbal position*, *post-verbal position* and *end-position*. Give one more example based on the text for each of these classifications of adverbs/adverbial phrases.
- 6 **11.6.9** Put the adverbs/adverbial phrases in brackets in the correct order in the sentences.
- The smart dress is expected to be on sale. (in department stores, from next spring, permanently)
 - I think I will watch the fashion show. (probably, at Charlie's house, personally)
 - She announced that she's going to attend Fashion Week. (next September, suddenly, in Milan)
 - He wears a suit if he has a business meeting. (occasionally, apparently, in the city)
 - You could have called me. (simply, yesterday afternoon, frankly)
 - He bought himself a trendy jacket. (last weekend, very, spontaneously)

Speaking

- 7 a) **11.3.6** **11.3.7** **THINK!** Say two things that have impressed you from the text.
- b) **11.3.5** **11.3.6** **11.3.7** **THINK!** What else would you like to know about psychotextiles? Write down two questions. Can any of your classmates answer your questions?

Writing & Speaking

- 8 **11.1.6** **11.5.3** **11.5.5** **11.5.6** **11.5.9** **11.6.3** **11.6.11** **ICT**
Collect some more information on psychotextiles and how they affect the human brain. Prepare a short text about it. Present it to the class.

9 Clothing in Kazakhstan

Kazakh FASHION



A procession of models striding down the catwalk, each wearing beautiful clothes, sparkling with crystals and sequins and adorned with quirky headresses and flowing fabrics. At first glance, Kazakhstan Fashion Week might seem like any other international fashion week. Look closer and you'll notice subtle differences, though: motifs inspired by traditional designs and cuts that mirror the nomadic costumes of the steppes. **1**

Instead, they **infuse** Kazakh fashion with something entirely unique. This style is sometimes referred to as ethno-futurism. **2** Several designers like Kuralai Nurkadilova, owner of the fashion house Kuralai, balance the two seemingly effortlessly, producing lines of clothing that are both aesthetically pleasing and culturally valuable. Bota Bakytzhan, another designer, takes inspiration from the **embroidered** patterns on traditional clothing to create eye-catching motifs for her dresses. The Oksana Corby Fashion House uses only natural fabrics, like the nomads of old would have done.

These Kazakh designers have certainly caught the fashion world's attention. **3** Their impact even reaches beyond the world of fashion to help the textile industry in Kazakhstan. As demand for cotton, wool and denim grows, so production responds.

In the past, Kazakhstan had a more sluggish textile industry. In 1991, it produced 249 million square metres of fabric. **4** As a result, imports of textiles **soared** from \$332 million in 2006 to

\$1,281 million in 2015. However, the industry is recovering. While it's true that cotton can only be grown in the southern provinces, the **potential** for cotton production in these areas is enormous. After all, Kazakhstan is one of the most sparsely-populated countries in the world – it has plenty of space for cotton fields. In addition, **light industry** is increasing in the textile sector: raw materials are imported and then made into clothing within Kazakhstan, providing jobs and economic benefits.

Fashion Week has breathed new life into the country's textile industry, and organisers **have** responded by putting a fresh spin on the concept; one that is unique to Kazakhstan. In 2018, the main show was in Nur-Sultan, but there were also events in three other major cities – something that has never been done anywhere else. **5** Kazakhstan is a **forward-thinking** nation with its eye set firmly on the future, always coming up with new and better ideas. But at the same time, it is a country that remembers its past and draws inspiration from its history.



Check these words

sequin, appeal, infuse (with), soar, raw materials

Researching the textile industry

Reading

1 **THINK!**



What materials are most used in the manufacturing of clothing in Kazakhstan? Discuss in groups. Tell the class.

2 **THINK!** What is 'ethno-futurism'? How is it related to fashion in Kazakhstan? Read the text to find out.

3 **11.4.7** Read again and choose from the sentences (A-F) the one which fits each gap (1-5). There is one extra sentence. Listen and check.

- A It's a blend of the traditional and the ultra-modern, and Kazakhstan excels at it.
 B It was a huge achievement for the country's fashion industry.
 C By 2000, this number was less than six million.
 D This innovation spills over into the designs themselves, and even the production.
 E These echoes of ancient times don't detract from the modern appeal of these pieces on the catwalk, however.
 F The Kuralai brand for example is available in the USA and Europe.

- 4 **11.4.5** Match the words in bold with their meanings: *progressive, fill, decorated, capability, the production of small goods, stitched, rose.*
- 5 **11.3.5 11.3.7** **THINK!** How can the textile and fashion industry in Kazakhstan be developed? Discuss in pairs. Tell the class.

see p. GR1

Grammar

Apposition/Textual referencing

- 6 **11.6.2** Rewrite the sentences using:
- a) apposition.
- 1 My friend designs beautiful clothes. Her name is Nuriya.
 - 2 Fashion designing is very demanding. It's a popular career choice for women.
- b) textual referencing
- 1 He won the prestigious LVMH prize, and winning the LVMH prize was a great honour.
 - 2 We submitted our design in February, and we were given a grant to manufacture our design in March.

Listening & Speaking

- 7 a) **11.2.2 11.2.5** Listen to an interview with a fashion designer who is concerned about her impact on the environment. Answer the questions (1-4).
- 1 What does she mainly draw inspiration from?
 - 2 What is Sofia's attitude towards the natural world?
 - 3 What does Sofia say about the silk fox dress?
 - 4 What does Jack admire about Sofia's business?
- b) **11.1.2 11.1.3 11.1.5 11.1.6 11.3.7** **THINK!** What would you design if you were a fashion designer? What materials/fabrics would you use? What would you draw inspiration from? Tell the class. Ask for/Give feedback.

Discussing an issue – Express concern/hope

- 8 a) **11.1.8 11.2.2 11.2.5** Listen to two students discussing an online article. What is it about? Listen and check.

- b) **11.3.2 11.3.3 11.3.5 11.3.6 11.3.7** Use the phrases in the Language box and the fact file below to act out a dialogue about the impact of the fashion industry on the environment similar to the one in Ex. 8a.

Introducing a topic
<ul style="list-style-type: none"> • I heard the other day that ... • I read somewhere that ... • Did you know that ...?
Expressing concern
<ul style="list-style-type: none"> • It really gets you down, doesn't it? • It's really depressing, isn't it? • It's quite a worrying fact, isn't it?
Expressing hope
<ul style="list-style-type: none"> • There is some hope, though. • There are reasons to be optimistic, though. • All is not lost yet. • It's not too late to make a difference.

Impact of the fashion industry on the environment

Facts:

Negatives:

- 2015, polyester production released 706 billion kg of greenhouse gases into the air
- Textile dyeing processes amount to 20% of global industrial water pollution

What to do: Buy clothes produced in countries with strict environmental regulations.

Writing & Speaking

- 9 **11.1.6 11.1.8 11.4.4 11.5.1 11.5.2 11.5.3 11.5.4 11.5.6 11.6.2 11.6.11** **ICT** Collect information on the fashion/clothing industry in Kazakhstan. Write about: *design, manufacturing/production, marketing, retail, environmental impact and its place around the world.* Make sure you include some statistics. Prepare and give a presentation about it.

9d Writing

A report

Writing Tip

Reports are usually written to present information in a formal situation about a particular person, place, event, plan, etc. They are addressed to superiors/colleagues, members of a committee, etc and give information in response to a request or instruction about a meeting/seminar that was held, a project that has finished/is in progress, etc or to suggest an alternative course of action.

A report normally starts with information about **who the report is for, who it is from, what it is about and when it was written.**

Reports are normally written in formal style (no contractions, frequent use of the passive, advanced linkers and vocabulary, complex sentence structure, etc).

Rubric analysis

- 1 **11.5.7** Read the rubric and underline the key words, then answer the questions.

You are a statistician. You have been asked by a clothing manufacturer to write a report about the textile, clothing and footwear (TCF) industry in your country. Your report should briefly describe the current state of the industry and possible future trends and make a recommendation. Write your report (150-200 words).

- What is the aim of the report?
 - to make suggestions
 - to assess a situation
- Who is the report for?
- What style should you use?
- Which of the following should you use:
 - idioms?
 - passive voice?
 - advanced vocabulary?
 - short verb forms?

Model analysis

- 2 **11A.5** Read the model and fill in the gaps (1-5) with the correct heading (A-E).

- | | |
|---------------------|-----------------|
| A Current situation | D Background |
| B Conclusion | E Future trends |
| C Purpose | |

Log out

To: Paul Walter, Managing Director
From: David Jameson, Statistician
Subject: TCF Industry in Kazakhstan
Date: 17th May

1

The aim of this report is to assess the current state of and possible future trends in the textile, clothing and footwear (TCF) industry in Kazakhstan and make a recommendation.

2

Kazakhstan has a long history of cotton production, and of exporting the raw material. Although exports peaked in 2013, they still exceed \$100 million today. At the same time, the country has been importing textiles, clothes and footwear in increasing quantities.

3

Over 90% of Kazakhstan's raw cotton is being exported. The most recent data shows that imported textiles make up 82% of what is used in Kazakhstan. Likewise, 75% of clothing and 97% of footwear sold in the country is manufactured abroad. However, the Kazakh TCF industry is experiencing a shift. There has been an increase in textile manufacturing of over 18% and of 4.2% in footwear in the past year.

4

This shows that Kazakhstan is filling the gap between exports of raw cotton and imports of TCF products by developing the facilities needed to process raw cotton. The number of companies operating in textile manufacturing has grown by 37.3% over a three-year period and, judging by current conditions, this will continue to rise.

5

On the whole, Kazakh-made TCF products have both economic and environmental benefits for the country. Therefore, I would strongly recommend investing in this sector.

- 3 **11.3.7 11A.5 11.5.4** Read the extract below and replace the underlined words/phrases with the formal expressions given.

- globally
- cultivation
- an alarming increase
- in terms of recent statistics
- it is estimated
- serious consequence
- prompt action is taken

- 1) Experts guess the amount of fresh water the fashion industry consumes is enough to fill 32 million Olympic-sized swimming pools.
- 2) If we're looking at new data, it has been shown that 10,000-20,000 litres of water are needed to produce 1 kg of cotton.
- The 3) growing of cotton uses 16% of all insecticides and 7% of all herbicides 4) around the world.
- The most 5) important effect of the fashion industry's practices is what happens to air quality: there will be 6) a shocking rise of 60% in CO₂ emissions from the fashion industry by 2030 unless 7) we do something quickly.

Structuring paragraphs

- 4 a) **11.5.2** Expand the prompts into sentences. Then put the sentences (A-D) in the correct order to make a paragraph. Which is the topic sentence and which sentences supports it?

- A** Most processes/very wasteful/optimistic estimates/ put figure at/40 billion square metres/waste per year
- B** On/other hand/processes exist/which/essentially/ zero-waste/these/be applauded and replicated
- C** While/manufacturing processes/be efficient/ other processes/ be not
- D** Moreover/not take into account/other waste products/ example/CO₂ and polluted water

- b) **11.3.7** **11.5.2** Write supporting sentences for the following topic sentence. Use the ideas listed and the Useful Language box. Compare with a partner.

Without a doubt, the amount of waste the fashion industry produces is a serious concern, yet the problem does have a solution.

- waste is high e.g. Some Asian countries produce 60 billion garments annually; 10% waste
- global demand for clothing rising e.g. 62 million tonnes today predicted to be 102 million tonnes in 2030
- if waste materials put back into production – will produce 6 billion extra garments in some Asian countries

Your turn

- 5 a) **11.4.5** **11.5.2** Read the rubric and underline the key words. Then answer the questions.

You work for an international organisation. You have been asked by a clothing manufacturer to write a report about the waste products of the fashion industry. Your report should briefly describe the current situation in the industry and make recommendations. Write your **report** (150-200 words).

- What do you have to write?
- Who are you and who are you writing to?
- What style should you write in?
- What information will you include in the introductory paragraph/conclusion?
- What subheadings will you use for the main body paragraphs?

- b) **11.1.2** **11.1.3** **11.1.5** **11.1.6** **11.5.5** **11.5.5** **11.5.6** **11.5.9** Use your answers in Ex. 5a, the ideas in Exs 3 and 4 and the Useful Language box to write your report. Follow the plan.

Useful language

To introduce

- The purpose/aim of this report is to ...
- As requested, I am submitting this report in order to ...
- This report outlines/examines/concerns/assesses ...

To introduce/list points

- Firstly, ...
- Furthermore/Moreover/In addition/ Additionally, ...
- Not only ... but ...

To give examples

- For instance/For example, ...
- ... especially/ particularly/specifically ...
- ... like/such as/namely ...

To introduce contrasting points

- However/On the other hand/ Nevertheless, ...
- Although ...
- While ...
- Despite ...

To express cause and effect

- By doing this, we could/would ...
- In this way, ...
- This would mean that ...
- As a result, ...
- Consequently, ...

To make suggestions/recommendations

- I would strongly suggest that/ recommend ...
- One suggestion would be to ...

To express opinion

- I firmly/strongly believe (that) ...
- As far as I am concerned ...
- I consider
- It seems to me that ...

To conclude

- In conclusion, To conclude, On the whole, ...

Plan

- Para 1:** introduction (state purpose/content of report)
- Paras 2-4:** main body divided by subheadings
- Para 5:** conclusion (summarise information and include opinion/recommendation)

9e Culture Corner



The Welsh National Costume

Wales is a country in the British Isles. It has had a turbulent history, having been invaded by many countries. The Welsh have always been fiercely proud of their **heritage**, **1**, and have passed down their traditions from generation to generation.



Check these words

gown, apron, shawl, breeches, preservation, spark

The Costume

One of **2** traditions is the Welsh national costume. For women, it consists **3** a long gown, a colourful apron, a shawl over the shoulders and a tall black hat. For men, it is a pair of breeches – short trousers that end just below the knee – and a pair of woollen stockings. A shirt, waistcoat and jacket are also worn, often with a handkerchief tied around the neck, and a hat.

Origins

The unique thing about the Welsh national costume is that, **4** of being entirely traditional, it has been **5** **engineered**. The architect behind the costume was a rich woman, Augusta Hall. Augusta was very enthusiastic about the **6** **preservation** of the Welsh language and way of life. To her, having a national costume was another way to ensure **7** Welsh heritage lived on. Despite the fact that there was **8** distinctive Welsh way of dressing – people in Wales wore much the same garments **9** people in the rest of the British Isles – Augusta began to encourage the women on her estate to wear specific clothes. In the 1830s, she **10** **compiled** a book of illustrations showing women wearing 'traditional' Welsh clothes. Although her designs **11** inspiration from the outfits people already wore, details were added to make them 'Welsh'.

Welsh national dress today

The Welsh national costume designed and promoted by Augusta Hall became popular throughout Wales. It **12** **fulfilled** Augusta's original **13** **ambition** of sparking Welsh national pride, and is still worn today at special celebrations and cultural gatherings. It also had a positive **14** on the Welsh textile industry. It was important for tourism at the time it was **15** **invented**, and continues to be to this day. Visitors to Wales can still buy small dolls in national dress to remember their visit, and see examples of the national costume in museums.



- 1** **11.4.3** Look at the pictures and read the title of the text. What is the history behind this costume? Read the text to find out.

- 2** **11.2.2** **11.4.2** Read the text. For questions 1-10, decide which answer (A, B, C or D) best fits each gap.
 Listen and check your answers.

- | | | | |
|------------------|------------|---------------|-----------|
| 1 A nevertheless | B although | C still | D however |
| 2 A that | B those | C the | D them |
| 3 A on | B from | C of | D with |
| 4 A regardless | B despite | C in spite of | D instead |
| 5 A a | B their | C - | D the |
| 6 A any | B no | C none | D not |
| 7 A to | B with | C as | D of |
| 8 A got | B pulled | C attracted | D drew |
| 9 A with | B from | C by | D of |
| 10 A effect | B affect | C impression | D result |

- 3** **11.4.5** Match the words in bold in the text to their synonyms: *desire, put together, created, achieved, traditions and customs, protection, planned.*

- 4** **11.3.7** Say two things you have learnt about the Welsh national costume.

- 5** **11.4.4** **11.4.8** **11.5.1** **11.5.2** **11.5.6**
11.5.9 **ICT** Collect information about the national costume in your country. Prepare a presentation about it. You can use the text in Ex. 2 as a model. Present it to the class.

Curricular: Design & Technology

9f

- 1 **11.4.3** Look at the pictures and read the title of the text. What do you expect the text to be about? Read the text to find out.



The Journey of Your Cotton Clothes

- 2 **11.4.3** **11.4.3** Read the text again. Match the subheadings (A-D) to the gaps (1-4).

Listen and read to check your answers.

- A Ginning & Weaving
B Finishing & Creating
C Shipping & Selling
D Planting & Harvesting

- 3 **11.5.2** Fill in: fabric, loom, patterns, goods, cotton, seeds, hand, plant.

- 1 print
2 remove
3 sheets of
4 fully-grown
5 transport
6 harvested by
7 sheets on a
8 raw

- 4 **11.1.2** **11.1.3** **11.1.5** **11.3.7** **11.5.3** **11.5.6**
Use the completed phrases to describe cotton textile manufacturing. Write a short paragraph. Swap papers with your partner. Ask for/Give each other feedback.

- 5 **11.1.6** **11.1.8** **11.4.4** **11.5.1** **11.5.3** **11.5.5** **11.5.6** **11.5.9** ICT Collect information about another textile (e.g. silk, bamboo, etc) and the process behind its production. Prepare a presentation about it. You can use the text in Ex. 2 as a model. Present it to the class.

Check these words

harvest, gin, spin, raw, weave, bleach, dye



1

The cotton plant has been cultivated by humans for about 7,000 years. It grows in warm, sunny climates and requires large amounts of water. A seed takes about three months to mature into a fully-grown plant, at which point the fluffy white fibres are harvested, usually by machine, but sometimes by hand.

2

The cotton is cleaned in a machine called a gin which removes the seeds from the fibre. A different machine spins the raw cotton into threads, and these are woven into sheets on a loom. These sheets are known as 'grey goods' in the cotton industry.

3

The 'grey goods' are transported to manufacturers that bleach, dye or print patterns on the sheets of fabric. Other processes include making the cotton smoother, softer, flame-retardant or wrinkle-resistant. Then, the processed fabric is sent to factories where it is cut and sewn into items of clothing, cleaned and pressed.

4

Finished items of clothing are packed and sent from the factory to the warehouse. They are either distributed to retailers to sell in shops, or posted directly to consumers who have made purchases online.

A lot of work goes into the production of our clothes. A 2009 study concluded that just one T-shirt, produced in India and sold in the UK, required 2,650 litres of water, 10 kg of fertilisers and half a kilogram of fossil fuels to go from cotton seed to clothes store shelf. Clothing is a necessity, and the industry provides many jobs, but we should still make sure we take care of our clothes, and donate, repurpose or recycle them when we don't need them any longer.

9 Language in Use

Phrasal verbs/Prepositions

- 1 **11.5.2** Complete the sentences with the phrasal verbs in the diagram in the correct form.



- During the test we some difficulties. (experienced)
- I my old Chemistry teacher yesterday. (met by chance)
- Charlie a fortune when he sold his textile business. (receive)
- She a smile when she won the award. (suddenly started)
- I hope I can Nurlan starting a clothing company with me. (convince)
- Anita design back in 2012. (became involved)

- 2 **11.6.13** Choose the correct preposition.

- Cotton fabric is absorbent **of/by** nature.
- This fabric is resistant **to/from** fire.
- Inventors have been experimenting **with/through** chemicals to enhance clothing.
- There is increasing demand **off/for** clothing which gives us information about our health.
- A lot of work goes **for/into** designing clothes.
- Fibres for textiles are harvested when the initial seeds have matured **into/to** fully-grown plants.
- Most clothing production is done **in/by** machine.

Collocations

- 3 **11.5.2** Fill in: processes, materials, fabric, chemicals, industry, metals.

- | | |
|--------------------|-----------------------|
| 1 light | 5 heavy |
| 2 biological | 6 water-soluble |
| 3 raw | |
| 4 processed | |

Word formation

- 4 **11.6.4** Complete the sentences with a word formed from the word in capitals.

- Clothes that are flame will not burn easily. (RESIST)
- Certain colours can stimulate in the human body. (CIRCULATE)
- Psychotextiles are used to trigger specific emotional in people. (RESPOND)
- Wearing traditional dress is a key part of cultural (PRESERVE)

Words often confused

- 5 **11.5.2** Choose the correct word.

- Traditional cloth/clothing items are typically made by hand.
- The exportation of raw materials brings significant economic/economical benefits.
- Clothing helps to protect us from harsh weather conditions, making it a need/necessity.
- Sparsely/Scarcely-populated countries have plentiful space for growing crops.
- Customs and clothing are an important part of a country's heritage/history.



Kazakhstan in Action!

Read and fill in the correct word.

- Kazakhstan and Uzbekistan are currently increasing 1) cooperation in the textile industry. This will help to develop the textile industries in 2) countries. 3) 2017, the project has seen substantial success, and trade turnover between the two countries has already increased 4) 30%.
- Some small manufacturers have 5) reviving some of the country's forgotten traditions. Not 6) are they recreating traditional

- dress and decorations, they are 7) combining merino wool 8) other textiles, 9) silk, to create products 10) are totally unique and eco-friendly!
- Assel Nussipkozhanova, the mastermind 11) the Assel label, has been paving the 12) for Kazakh fashion designers. Known 13) her use of subtle lines and pastel colours, her clothes have even 14) presented 15) Milan Fashion Week.

POLYESTER

Synthetic Fibres & the Fabric of Society

Polyester is one of the most commonly-used fabrics in the world today. It is used in almost everything, from clothing to furnishings and even home insulation. Yet there are still mixed feelings about whether or not we should be using it, with some claiming that the benefits are outweighed by the drawbacks.

Polyester is a synthetic material, so of course it has a number of advantages over traditional textiles. It is wrinkle-resistant and is normally pre-shrunk, so it will hold its shape even after being washed at home. Most important, however, is its absorbency. Although it is a hydrophobic textile, polyester does in fact absorb oil, which means that a special finish can be applied to give it properties such as fire resistance. The versatility of polyester means that there is an almost infinite number of applications for the fabric.

That said, the production of polyester has a considerable impact on the planet. It is created through a chemical reaction that takes place between an acid and an industrial alcohol, and is derived from both coal and petroleum among other materials. The use of fossil fuels means that the production process carries with it a sizeable carbon footprint. What's more, it's a notably water-intensive process, using as much as 71,000m³ of water in the time it takes to make just one tonne of fibres!

Depending on your point of view, polyester can be seen either as a solution or a problem. It is extremely durable, long-lasting and warm, and can be specially treated to serve of wide variety of purposes. However, as with all synthetics, it isn't very breathable, which is something many find uncomfortable. What's more, the durability of the fabric is something of a double-edged sword, as it can take as long as 200 years to decompose! While the utility of polyester is beyond question, it seems clear that further developments are the way to bring the fabric into the 21st century.

Progress Check

Reading

- 1 **11.42 11.44 11.49** Read the text and choose the correct answer (A, B, C or D) for questions 1-5.
- What is the purpose of the text?
 - To highlight the strengths and qualities of synthetic fabrics.
 - To draw attention to the disadvantages of wearing polyester.
 - To compare positive and negative aspects of using polyester.
 - To analyse processes involved in polyester manufacturing.
 - According to paragraph 2, which of the following is NOT true?
 - Polyester is typically washed and dried before being sold.
 - Polyester clothes tend to become loose and baggy.
 - Clothes made from polyester do not soak up water easily.
 - Polyester is an extremely adaptable material.
 - In paragraph 3, the writer says that...
 - industrial alcohol is the main component of polyester.
 - manufacturing polyester produces large amounts of emissions.
 - polyester manufacturing uses less water than other fabrics.
 - a significant amount of time is needed to make one tonne of polyester.
 - What does the writer mean by the term 'double-edged sword'?
 - Something that can have both positive and negative effects.
 - Something that can withstand great amounts of pressure.
 - Something that can complete a wide variety of tasks.
 - Something that can be viewed in two very different ways.
 - What is the writer's overall attitude at the end of the text?
 - The negative aspects of polyester have been exaggerated.
 - The current polyester production methods should be banned.
 - The textile industry ought to modernise its practices.
 - The people buying polyester must change their perspective.

Listening

5x2=10 marks

- 2 **11.22 11.25** Listen to an interview about making wood wearable. For questions (1-10), complete the sentences.
- The host says that one drawback of polyester is the fact that it causes damage to the
 - The cellulose-based fibres Robert works with come from
 - Robert says the environmental impact of regenerated fibres is than synthetic ones.
 - The use of regenerated fibres in the clothing industry is quite
 - In order to break down wood, it's necessary to use
 - A spinneret forms long strands of material from a solution.
 - Closed-loop systems aim to reduce the environmental
 - Robert's company has a website and is active on

8x2=16 marks

9 Progress Check

Vocabulary

- 3 **11.5.2** Fill in: *repel, convert, employ, pioneer, withstand, engineer, infuse, soar, compile, promote*.
- In order to conserve the planet, governments must the use of eco-friendly dyes.
 - Manufacturers can now fabrics for use in specific situations.
 - It is hoped that we can all of our clothing with tech in the near future.
 - Strong fibres can being bent and creased.
 - We used a variety of sources to our report.
 - Each year, designers new techniques which change the fashion industry.
 - While some fabrics are designed to soak up water, others it.
 - The number of clothing manufacturers in Kazakhstan is expected to in the near future.
 - Through the use of colour, we can psychological principles to evoke an emotional reaction.
 - There are now clothes which can and store kinetic energy.

10x2=20 marks

Grammar

- 4 **11.6.3** Match the phrases to form sentences.

- | | |
|--|--|
| <input type="checkbox"/> 1 I was so excited | a whether this design will be popular. |
| <input type="checkbox"/> 2 It's doubtful | b when I realised my terrible mistake. |
| <input type="checkbox"/> 3 We were shocked | c how successful her first business was. |
| <input type="checkbox"/> 4 I felt awful | d to hear your wonderful news! |
| <input type="checkbox"/> 5 It's unbelievable | e to read about the accident. |

5x2=10 marks

- 5 **11.6.11** Put the adverbs/adverbial phrases in brackets in the correct order in the sentences.

- She's studying fashion. (in Paris, currently, at university)
- Waistcoats are known as vests. (in the USA, commonly, apparently)
- His business collapsed. (last spring, in London, unexpectedly)
- We will present our new line of clothing. (next year, at Fashion Week, probably)

4x3=12 marks

- 6 **11.6.2** Rewrite the sentences using:

a) apposition

- Gulnara also designs jewellery. She is the owner of the fashion boutique.
- Clothing is nevertheless very personal. It is a necessity.

b) textual referencing

- Anna is hard to work with, but Anna's designs are inspiring.
- Her designs were featured on TV, and her designs being featured on TV was one of her greatest ambitions.

4x3=12 marks

Writing

- 7 **11.5.1 11.5.3 11.5.5 11.5.6 11.5.9** Read the rubric and write your report.

You work for an international company. You have been asked by a textile manufacturer to write a report about the environmental impact of the fashion industry. Your report should briefly describe the current situation in the industry and possible solutions and make recommendations. Write your report (150-200 words).

20 marks

Total: 100 marks

Check your Progress

- talk about synthetic materials and fabric properties _____
- talk and write about resources and processes involved in manufacturing clothes _____
- talk and write about the textile industry _____
- use adjective complements, adverbs/adverbial phrases, apposition – textual referencing _____
- discuss an issue – express concern/hope _____
- write a report _____

GOOD ✓ VERY GOOD ✓✓ EXCELLENT ✓✓✓

Grammar Reference

Module 1

Adjective complements

An **adjective complement** is a phrase that gives extra information about an adjective. It can be an infinitive phrase or a noun clause.

Types of adjective complements

- Infinitive phrases** consist of **to** + the base form of the verb and any modifiers or objects that relate to the verb. *I am very pleased to meet you. We were interested to learn about heredity. The teacher seemed keen to start the lesson. I was glad to complete the project on time. It was kind of you to help me with my science project.*
- Noun clauses** function as nouns. They have a subject and a verb but they aren't complete sentences. A noun clause starts with: **that, how, if, what, when, why, whether, etc.** *I am disappointed that I failed the test. He was upset when his laptop broke down. Tom was curious what the lesson would be about.*

Pre- and Post-modifying noun structures

Nouns can have a variety of **pre-modifiers**:

- one or more nouns together
a journal article, the University Sports Centre
- a noun to describe what material something is made of
a metal instrument
- a noun ending in -ing
a funding problem
- a measurement of weight, distance, age, duration or value
a two-kilogram box, a twenty-kilometre run, a five-year-old boy, a two-month process, a ten-thousand-pound grant

Nouns can also have **post-modifiers**:

- a prepositional phrase
a system with seven categories
- a relative clause
an animal which gives birth to live young

Determiners: Articles – Generic use

Determiners include the indefinite article (**a/an**), the definite article (**the**), demonstratives (**this/these/that/those**), possessive adjectives (**my, your, his, etc.**), quantifiers (**some, any, every, no, both, each, either, neither, none, enough, several, all, most, whole, etc.**) and numbers (**one, two, etc.**)

Articles are determiners that can be used in a specific or generic way.

Generic use

We can refer to something in a generic way by using any of the three articles or by omitting the article altogether.

- Indefinite article + singular countable noun**
A blood test will confirm the doctor's suspicions. (any blood test)
- Definite article + singular countable/uncountable noun**
The microscope is an invaluable invention. The blood can tell us a lot about a person's physical health. (blood in general/everyone's)
Note: We also use the definite article 'the' with **adjectives as nouns** to describe groups of people (*the rich, the young, the elderly, etc.*)
- Zero article**
uncountable nouns *They've done further research on blood groups.*
plural nouns *Thyroid tests are not always reliable. (thyroid tests in general)*

Apposition

Apposition is when we use two nouns or noun phrases in the same sentence to refer to the same person or thing.

Study the examples below:

The pulse rate, the oldest measure of physical health, is still measured today. (The noun phrases 'The pulse rate' and 'the oldest measure of physical health' are talking about the same thing.)

Dr Jones, the new cardiologist, is very kind. (The noun phrases 'Dr Jones' and 'the new cardiologist' are the same person.)

A blood test, a valuable examination, can answer a lot of health questions. That instrument, the one at the back of the cabinet, actually belonged to Karl Landstener.

The researchers, some of the most respected in the field, didn't understand the true impact of their findings.

We can use **commas** to separate the two noun phrases depending on what kind of information we want to convey. Study the examples below:

- [comma] *My brother, Philip, works at the hospital. (extra/not necessary information – The speaker probably only has one brother.)*
- [no comma] *My brother Mark is a doctor. My brother Joe is still at university. (necessary information – The speaker has more than one brother. Mark and Joe specify which brother we are talking about.)*

Textual referencing

We can use demonstratives, pronouns, possessive adjectives, phrases, etc. to avoid repetition and make ideas in a piece of writing easier to follow. By using this cohesion technique to connect sentences and paragraphs, we make our piece of writing flow well.

Many scientists didn't receive credit for their discoveries in their lifetimes. The discovery of the greenhouse effect, for example, was made by Eunice Foote in 1856, but the credit for this was given to John Tyndall in 1859.

Module 2

Present Simple

Form

AFFIRMATIVE	I/You/We/They work . He/She/It works .
NEGATIVE	I/You/We/They do not/don't work . He/She/It does not/doesn't work .
INTERROGATIVE	Do I/you/we/they work? Does he/she/it work? Yes, I/you/we/they do. Yes, he/she/it does.
SHORT ANSWERS	No, I/you/we/they don't. No, he/she/it doesn't.

Spelling (3rd-person singular affirmative)

- Most verbs take **-s** in the third-person singular.
I write – he writes
- Verbs ending in **-ss, -sh, -ch, -x** or **-o** take **-es**.
I pass – he passes, I push – he pushes, I teach – he teaches, I fax – he faxes, I do – he does

Grammar Reference

- Verbs ending in **consonant + y** drop the **-y** and take **-ies**.
I study – she studies
- Verbs ending in **vowel + y** take **-s**. *I buy – she buys*

Use

We use the **present simple** for:

- daily routines/repeated actions** (especially with adverbs of frequency: **often, usually, always, etc.**).
Mike usually drives to work.
- habits**. *She always leaves the office early on a Friday.*
- permanent states**. *She lives in London.*
- timetables/schedules** (future meaning).
The meeting starts at 9 o'clock.
- general truths and laws of nature**.
Water boils at 100°C.
- reviews/sports commentaries/narrations**.
That actor plays the role of a fire fighter in his latest film.

Time expressions used with the present simple: every day/month/year/summer/morning/evening, etc., usually, often, sometimes, always, etc., on Sundays/Tuesdays, etc.

Adverbs of frequency

- Adverbs of frequency** tell us how often sth happens. These are: **always** (100%), **usually** (75%), **often** (50%), **sometimes** (25%), **rarely/seldom** (15%), **never** (0%).
- Adverbs of frequency go before the main verb but after the auxiliary verbs be, have, do and modals such as will, may, etc.** *He always performs well in interviews. John is never late for work.*

Present continuous

Form: verb to be (am/is/are) + main verb -ing

AFFIRMATIVE	NEGATIVE
I'm talking.	I'm not talking.
You're talking.	You aren't talking.
He/She/It's talking.	He/She/It isn't talking.
We/You/They're talking.	We/You/They aren't talking.

INTERROGATIVE	SHORT ANSWERS
Am I talking?	Yes, I am. / No, I'm not.
Are you talking?	Yes, you are. / No, you aren't.
Is he/she/it talking?	Yes, he/she/it is. / No, he/she/it isn't.
Are we/you/they talking?	Yes, we/you/they are. / No, we/you/they aren't.

Spelling of the present participle

- Most verbs take **-ing** after the base form of the main verb.
work – working, ask – asking
- Verbs ending in **-e** drop the **-e** and take **-ing**.
drive – driving, type – typing
- Verbs ending in **vowel + consonant** and which are stressed on the last syllable, **double the consonant and take -ing**.
run – running, commit – committing BUT *whisper – whispering* (stress on 1st syllable)
- Verbs ending in **-ie** change the **-ie** to **-y** and add **-ing**.
tie – tying

Use

We use the **present continuous** for:

- actions happening **now**, at the moment of speaking.
Mary is writing a letter of application at the moment.
- actions happening **around the time of speaking**.
Joe is flying to New York for a business meeting this week.
- fixed arrangements in the near future**, especially when we know the time and the place.
We are getting a pay rise next month.
- temporary situations**.
She's working as a sales assistant for the summer holidays.
- changing or developing situations**.
He is getting thinner.
- frequently repeated actions with **always, constantly, continually** to express annoyance or criticism.
Ben is always looking for jobs on the internet, but he never applies for anything.

Note: The following verbs do not usually have a continuous form: **have** (= possess), **like, love, hate, want, know, remember, forget, understand, think, believe, cost, etc.** *He doesn't like working outside.*

Time expressions used with the present continuous: now, at the moment, at present, nowadays, these days, today, tomorrow, next month, etc.

Present Simple vs Present Continuous

PRESENT SIMPLE	PRESENT CONTINUOUS
permanent states & facts <i>He fixes computers.</i>	temporary situations <i>He's trying hard to get a promotion.</i>
habits/routines <i>She goes to work by bus every morning.</i>	actions happening now/ around the time of speaking <i>She's talking to her boss now.</i>
timetables <i>The department store opens at 8.</i>	future arrangements <i>They're arriving at 10 o'clock tomorrow.</i>

Stative verbs

Stative verbs are verbs which describe a state rather than an action, and do not usually have a continuous form.

These are:

- verbs of the **senses** (**appear, feel, hear, look, see, smell, sound, taste, etc.**).
Emma looks happy. I believe she got the job.
- verbs of **perception** (**believe, forget, know, understand, etc.**).
I know how your company operates.
- verbs which express **feelings and emotions** (**desire, enjoy, hate, like, love, prefer, want, etc.**).
Matthew likes the other people in his office.
- other verbs: **agree, be, belong, contain, cost, fit, have, include, keep, need, owe, own, etc.**
It costs me £10 a week to take the train to work.

Grammar Reference

Some of these verbs can be used in continuous tenses, but with a difference in meaning.

PRESENT SIMPLE	PRESENT CONTINUOUS
I think that's Gavin's work colleague. (= believe)	I am thinking of training to be an electrician. (= am considering)
He has a new computer on his desk. (= owns, possesses)	George is having his lunch at his desk. (= am eating) Alex is having a shower now. (= is taking)
Do you see that car over there? (= is it visible?) I see why you would think that. (= understand)	She's seeing her old boss tomorrow. (= is meeting)
The food in the staff canteen tastes awful. (= is has the flavour of)	Maggie is tasting her tea to see if it needs more sugar. (= is trying)
The office smells very strange today. (= has the aroma)	The dog is smelling your shoes. (= is sniffing)
Bill appears to be dedicated to his work. (= seems)	My colleague is appearing in the talent show on Friday. (= is performing)
This chair feels like real leather. (= has the texture of)	She's feeling the material to check the quality. (= is touching)
He is a good-natured person. (= character – permanent state)	He is being very selfish. (= behaviour – temporary state)
This shirt fits me very well. (= is the right size)	They are fitting new desks in my office. (= are putting)
Julie looks worried. (= appears)	The boss is looking at my proposal. (= is taking a look at)

Note: The verb **enjoy** can be used in continuous tenses to express a **specific preference**. I **really enjoy** working in the city. (general preference) **BUT** They're **enjoying** themselves at the office party. (specific preference)

The verbs **look** (when we refer to somebody's appearance), **feel** (when we experience a particular emotion), **hurt** and **ache** can be used in simple or continuous tenses with no difference in meaning.

My head **hurts**. = My head **is hurting**.

Present perfect

Form: have/has + past participle

AFFIRMATIVE	NEGATIVE
I/You/We/They have/ve finished .	I/You/We/They have not/haven't finished .
He/She/It has's finished .	He/She/It has not/hasn't finished .

INTERROGATIVE

Have I/you/we/they finished?
Has he/she/it finished?

SHORT ANSWERS

Yes, I/you/we/they **have**.
No, I/you/we/they **haven't**.
Yes, he/she/it **has**.
No, he/she/it **hasn't**.

Use

We use the **present perfect**:

- for actions which **started in the past** and **continue up to the present** especially with **stative** verbs such as **be, have, like, know**, etc.
Frank **has been** a secretary for seventeen years. (= He started working as a secretary seventeen years ago and he's still doing it.)
- to talk about a **past action** which has a **visible result** in the **present**. Susan **has bought** a new suit for work. She looks very smart.
- for actions which happened at an **unstated time in the past**. The action is more important than the time it happened. They **have written** the report. (When? We don't know; it's not important.)
- with **today, this morning/afternoon/week, so far**, etc when these periods of time are **not finished** at the time of speaking. She **has applied** for two jobs this week. (The time period – this week – is not over yet. She may apply for another job.)
- for **recently completed actions**. They've **just finished** their meeting. (The action is complete. The meeting is now over.)
- for **personal experiences/changes** which have happened. It's the first time he **has attended** an interview.

Time expressions used with the present perfect:

- already** (normally in affirmative sentences)
You don't need to print the report. I **have already** emailed it to the boss.
- yet** (normally in interrogative or negative sentences)
Have you met your new co-worker **yet**?
They **haven't** published the report **yet**.
- just** (normally in affirmative sentences to show that an action finished a few minutes earlier)
I've **just** called the New York office.
- ever** (normally in affirmative and interrogative sentences)
This is the best job I've **ever** had.
Have you **ever** worked in a bank?
- never** (negative meaning)
I have **never** been promoted.
Miranda has **never** written a CV.
- for** (over a period of time)
We haven't had a pay rise **for** years.
- since** (from a starting point in the past)
Nigel has worked as an accountant **since** 2005.
- recently** (normally in affirmative or interrogative sentences) The shop has **recently** put an advert in the newspaper.
- so far** (normally in affirmative sentences)
She's produced some excellent work **so far**.

Grammar Reference

have gone (to)/have been (to)/have been in

- Luke **has gone to** work. (He's on his way to work or he's there now. He hasn't come back yet.)
- Abigail **has been to** London for training. (She went to London but she isn't there now. She's come back.)
- They **have been in** the meeting for three hours. (They are in the meeting now.)

Present perfect continuous

Form: **have/has + been + verb -ing**

AFFIRMATIVE	NEGATIVE
I/You/We/They have/ve been trying.	I/You/We/They have not/haven't been trying.
He/She/It has/s's been trying.	He/She/It has not/hasn't been trying.
INTERROGATIVE	SHORT ANSWERS
Have I/you/we/they been trying?	Yes, I/you/we/they have / No, I/you/we/they haven't.
Has he/she/it been trying?	Yes, he/she/it has / No, he/she/it hasn't.

Use

We use the **present perfect continuous**:

- to place **emphasis on the duration of an action** which started in the past and continues up to the present.
He's **been working** for the same company for years.
- for an action that **started in the past and lasted for some time**. It may still be continuing, or have finished, but it has left a **visible result in the present**.
Beth is annoyed. She's **been waiting** to see her boss since this morning.
- to express **anger, irritation, annoyance or criticism**.
Who **has been moving** things around on my desk? (annoyance)

Time expressions used with the present perfect continuous: since, for, how long (to place emphasis on duration)

Past simple

Form

The **past simple** affirmative of regular verbs is formed by adding **-ed** to the verb. Some verbs have an irregular past form (see list of Irregular Verbs).

AFFIRMATIVE	NEGATIVE
I/You/He/She/It/We/They waited/saw.	I/You/He/She/It/We/They did not/didn't wait/see.
	We/You/They did not/didn't wait/see.
INTERROGATIVE	SHORT ANSWERS
Did I/you/he/she/it/we/they wait/see?	Yes, I/you/he/she/it/we/they did. No, I/you/he/she/it/we/they didn't.

Spelling

- We add **-d** to verbs ending in **-e**. *I like - I liked*
- For verbs ending in **consonant + y**, we drop the **-y** and add **-ied**. *I study - I studied*
- For verbs ending in **vowel + y**, we add **-ed**. *I stay - I stayed*
- For verbs ending in one stressed vowel between two consonants, we double the last consonant and add **-ed**. *I shop - I shopped*

Use

We use the **past simple** for:

- actions which happened at a **specific time** (stated, implied or already known) **in the past**.
They **went to** Australia last year. (When? Last year - time stated)
They **had** a wonderful time. (When? Last year - time implied/already known)
- **past habits**.
She **spent** every holiday in Wales as a child.
- past actions which happened **one immediately after the other**.
Carl **packed** his suitcase, **grabbed** his passport and **drove** to the airport.
- past actions which **won't take place again**.
Edmund Hillary and Tenzing Norgay **climbed** Mount Everest in 1953.

Time expressions used with the past simple: yesterday, yesterday morning/evening etc, last night/week etc, two weeks/a month ago, in 2010, etc.

Present perfect vs Past simple

PRESENT PERFECT	PAST SIMPLE
an action which happened at an unstated time in the past. She has bought a new car. (We don't know when.)	an action which happened at a stated time in the past. Chris went to America last week. (When? Last year. The time is mentioned.)
an action which started in the past and is still continuing in the present. He has lived in Singapore for three years. (He still lives in Singapore.)	an action which started and finished in the past. She stayed at the Hilton Hotel. (She's not staying there now.)

Past continuous

AFFIRMATIVE	NEGATIVE
I/He/She/It was living.	I/He/She/It wasn't living.
We/You/They were living.	We/You/They weren't living.
INTERROGATIVE	SHORT ANSWERS
Was I/he/she/it living?	Yes, I/he/she/it was. No, I/he/she/it wasn't.
Were we/you/they living?	Yes, we/you/they were. No, we/you/they weren't.

Grammar Reference

We use the **past continuous** for:

- an action which was **in progress** at a stated time in the past. We do not know when the action started or finished. They **were shopping** at 3 o'clock yesterday.
- a **past action** which was **in progress** when another action **interrupted** it. We use the past continuous for the action in progress (longer action) and the past simple for the action which interrupted it (shorter action). We **were skiing** down the slope when Oliver **twisted** his ankle.
- two or more actions which were happening at the same time in the past (**simultaneous actions**). While I **was getting** our suitcases from the taxi, William **was checking** into the hotel.
- to give **background information** in a story. We **were waiting** for Dad to fix the car, but it **wasn't looking** hopeful. It **was getting** darker and colder and we **were feeling** more and more worried.

Time expressions used with the past continuous: while, when, as, all day/night/morning, yesterday, etc.

Past simple vs Past continuous

PAST SIMPLE	PAST CONTINUOUS
actions which happened at a stated time in the past. Ben bought a new suit yesterday.	actions in progress at a stated time in the past. This time last week we were standing on a volcano.
actions which happened one after the other in the past. He took the camera and his wallet and went out for a walk.	two or more actions which were happening at the same time in the past. She was talking on her mobile while she was waiting for the aeroplane to take off.

used to - would - Past simple - be/get used to

- We use **used to/past simple** to talk about past habits or actions that happened regularly in the past, but no longer happen. She **used to eat/ate** seafood, but she doesn't do that anymore.)
- We use **would/used to** for repeated actions or routines in the past. We don't use **would** with stative verbs. He **used to go/would go** to Paris every summer. **BUT** She **used to have** a ski lodge in the Alps. (NOT: She **would have** a ski lodge in the Alps.)
- We use the **past simple** for an action that happened at a definite time in the past. He **drove** to Scotland yesterday. (NOT: He **would drive** to Scotland yesterday.)
- We use **be used to + noun/pronoun/-ing form** to talk about habits (to be accustomed to/be in the habit of). She **isn't used to travelling** by aeroplane.
- We use **get used to + noun/pronoun/-ing form** to talk about habits (= become accustomed to). She **will soon get used to driving** on the left-hand side of the road.

Past perfect

Form: subject + **had** + past participle of the main verb.

AFFIRMATIVE	NEGATIVE
I/You/He, etc had taken .	I/You/He, etc had not/hadn't taken .
INTERROGATIVE	SHORT ANSWERS
Had I/you/He, etc. taken?	Yes, I/you/He/etc. had No, I/you/He, etc. hadn't

We use the **past perfect**:

- for an action which **finished before another past action or before a stated time in the past**. The ferry **had already left** by the time we **arrived** at the port. (past perfect: **had left** before another past action: **arrived**). The shops **had closed** by 6.00. (before a stated time in the past: **by 6.00**).
- for an action which **finished in the past and whose result was visible at a later point in the past**. Cathy **was there** because she **had won** the race.

Note: The **past perfect** is the past equivalent of the **present perfect**. The hotel lobby **was** empty - everyone **had gone to bed**. (present perfect: The hotel lobby **is** empty - everyone **has gone to bed**.)

Time expressions used with the past perfect: before, after, already, just, for, since, till/until, by, never, etc.

Past perfect continuous

Form: subject + **had + been +** main verb **-ing**

AFFIRMATIVE	
I/You/He/She/It/We/They had been flying .	
NEGATIVE	
I/You/He/She/It/We/They had not/hadn't been flying .	
INTERROGATIVE	SHORT ANSWERS
Had I/you/He, etc. been flying?	Yes, I/you/He/She/It/we/they had been flying. No, I/you/He/She/It/we/they hadn't.

We use the **past perfect continuous**:

- to put emphasis on the duration of an action which started and finished in the past, before another action or stated time in the past, usually with **for** or **since**. They **had been climbing** the mountain for two hours before they realised they **had left** their mobile phones at the campsite.
- for an action which lasted for some time in the past and whose result was visible in the past. Dylan **had been scuba diving** all afternoon, so he was exhausted.

Note: The **past perfect continuous** is the past equivalent of the **present perfect continuous**. The trip **was** a great success because they **had been planning** for it all year. (present perfect continuous: The trip **is** a great success because they **have been planning** for it all year.)

Time expressions used with the past perfect continuous: for, since, how long, before, until, etc.

Grammar Reference

The passive

Form

We form the **passive** with the verb **to be** in the appropriate tense and the **past participle** of the main verb.

Read the table:

	ACTIVE	PASSIVE
Present Simple	Anna writes a story.	A story is written by Anna.
Present Continuous	Anna is writing a story.	A story is being written by Anna.
Past Simple	Anna wrote a story.	A story was written by Anna.
Past Continuous	Anna was writing a story.	A story was being written by Anna.
Present Perfect Simple	Anna has written a story.	A story has been written by Anna.
Past Perfect Simple	Anna had written a story.	A story had been written by Anna.
Future Simple	Anna will write a story.	A story will be written by Anna.
Infinitive	Anna has to write a story.	A story has to be written by Anna.
Modal Verbs	Anna might write a story.	A story might be written by Anna.

We use the **passive**:

- when the person/people doing the action is/are **unknown, unimportant or obvious from the context**. The album **was released** last week. (We don't know who released it.)
Adam's book **will be published** on Thursday. (Who will publish the book is unimportant.)
A lot of factual mistakes **were made** in the article. (It's obvious that the author made the mistakes.)
- when the **action itself is more important than the person/people** doing it, as in **news headlines, newspaper articles, advertisements, instructions, formal notices, processes, etc.**
The film **will be shown** at 8pm.
- when we want to **avoid taking responsibility** for an action or when we refer to an unpleasant event and we do not want to say who or what is to blame. *Several people **were injured**.*
- to **emphasize the agent**.
The film **was introduced** by the director.
- to make statements **more formal or polite**.
My magazine **has been taken**. (More polite than saying "You took my magazine.")

Changing from the active to the passive:

- The **object** of the active sentence becomes the **subject** in the passive sentence.
- The active verb remains in the same tense but changes into passive form.
- The **subject** of the active sentence becomes the **agent**, and is either introduced with the preposition **by** or is omitted.



Only transitive verbs (verbs that take an object) can be changed into the passive. The song **took place** in Victorian England. (Intransitive verb, **no passive form**.)

Note: Some transitive verbs (for **fit** = be the right size), suit, resemble, etc) cannot be changed into the passive. His style **resembles** that of Picasso. (NOT: *His style is resembled by that of Picasso.*)

- Let** becomes **be allowed to** in the passive. *They **let** us stay late to watch the film. – We **were allowed** to stay late to watch the film.*
- We can **try** the verb **to get** instead of the verb **to be** in everyday speech when we talk about things that happen by accident or unexpectedly.
Your CD **got scratched** when I dropped it.
- By + agent** is used to say who or what carries out an action. **With + instrument/material/ingredient** is used to say what the agent used. *The sketch was made **by** Leonardo. It was drawn **with** charcoal.*
- The agent can be **omitted** when the subject is **they, he, someone/somebody, people, one**, etc. *The song **has been banned**. (= They have banned the song.)*
- The agent is **not omitted** when it is a **specific or important person**, or when it is **essential** to the meaning of the sentence. *This T-shirt was signed **by the band**.*
- With verbs which can take two objects, such as **bring, tell, send, show, teach, promise, sell, read, offer, give, lend**, etc we can form two different passive sentences.
*Jamie **gave** Rachel a DVD. (active) Rachel **was given** a DVD by Jamie. (passive, more common) A DVD **was given** to Rachel by Jamie. (passive, less common)*
- In passive questions with **who, whom** or **which** we do not omit **by**. *Who **composed** this piece of music? Who **was** this piece of music **composed by**?*
- The verbs **hear, help, see** and **make** are followed by a bare infinitive in the active, but a to-infinitive in the passive. *Kate **made me** learn the poem by heart. (active) I **was made to learn** the poem by heart by Kate. (passive)*

Impersonal/Personal passive constructions

- The verbs **believe, consider, expect, know, report, say, think**, etc have both personal and impersonal constructions in the passive.

active: People **expect** that Adele **will sing** the song.

passive: It **is expected** that Adele **will sing** the song. (impersonal construction)

Adele is expected to sing the song. (personal construction)

active: They **say** he **was** a brilliant musician.

passive: It **is said** that he **was** a brilliant musician. (impersonal construction)

He is said to have been a brilliant musician. (personal construction)

Grammar Reference

Reported Speech

Reported speech is the exact meaning of what someone said, but not the exact words. We do not use quotation marks. The word **that** can either be used or omitted after the introductory verb (say, tell, suggest, etc.).

She said **(that)** she would call him back in five minutes.

Say - Tell

- **say + no personal object** - He said he was exhausted.
 - **say + to + personal object** - He said to us he was exhausted.
 - **tell + personal object** - He told us he was exhausted.
- Note:** We cannot use **say about**. We can use **tell sb/speak/talk about** instead.
- She told us/spoke/talked about her childhood frequently.

Expressions used with **say, tell and ask**

SAY	hello, good morning/afternoon etc., something/nothing, so, a prayer, a few words, no more, for certain/sure, etc.
TELL	the truth, a lie, a story, a secret, a joke, the time, the difference, one from another, someone's fortune, etc.
ASK	a question, a favour, the price, after somebody, the time, around, for something/someone, etc.

Reported statements

- In reported speech, **personal/possessive pronouns** and **possessive adjectives** change according to the meaning of the sentence.
Maria said, "I'm going to study abroad."
Maria said (that) **she** was going to study abroad.
- We can report someone's words either a long time after they were said (out-of-date reporting), or a short time after they were said (up-to-date reporting).

Up-to-date reporting

The tenses can either change or remain the same in reported speech.

Direct speech: Tom said, "I haven't checked the report yet."

Reported speech: Tom said (that) he **hasn't/hadn't checked** the report yet.

Out-of-date reporting

The introductory verb is in the past simple, and the tenses change as follows:

DIRECT SPEECH	REPORTED SPEECH
Present simple → Past simple	
"I am excited."	He said (that) he was excited.
Present continuous → Past continuous	
"I am watching a film now."	He said (that) he was watching a film at that moment.
Present perfect → Past perfect	
"I have read this book."	He said (that) he had read that book.
Past simple → Past simple or Past perfect	
"They bought a new car."	They said (that) they (had) bought a new car.

Past continuous → Past continuous or Past Perfect continuous

"I was washing the dishes at 9 pm last night."	She said that she was washing/had been washing the dishes at 9 pm the previous night.
Will → Would	
"I will go shopping tomorrow."	She said (that) she would go shopping the following day.

- Certain words and time expressions change according to the meaning, as follows:

now	→ then, immediately, at that moment
today	→ that day
yesterday	→ the day before, the previous day
tomorrow	→ the following day
this week	→ that week
last week	→ the week before, the previous week
next week	→ the week after, the following week
ago	→ before
here	→ there
come	→ go
bring	→ take

- The verb tenses remain the same in reported speech when the introductory verb is in the present, future or present perfect.

Chloe **says**, "I'm happy."

Chloe **says** (that) she is happy.

- The verb tenses can either change or remain the same in reported speech when reporting a general truth or law of nature. Our teacher said, "Cuba is an island."
Our teacher said (that) Cuba **is/was** an island.

Note: The verb tenses remain the same in reported speech when:

- the verb of the sentence is in the **unreal past**.
She said, "I would rather you **called** me a bit later."
She said (that) she would rather I **called** her a bit later.
They said, "It's time we **left**."
They said (that) it was time they **left**.
- the following verbs/verb phrases are used: **had better, could, would, used to, needn't have, should, might and ought to**.
"We **should** visit Paris someday."
They said (that) they **should** visit Paris someday.
He said, "I **had better** get Mum a souvenir."
He said (that) he **had better** get Mum a souvenir.
- there is a **past simple** or a **past continuous** in a time clause.
She said, "When I **was sleeping**, I **had** a strange dream."
She said (that) when she **was sleeping**, she **had** a strange dream.
- the time of the information being reported is not over yet.
She said, "I **will** call you tomorrow." She said (that) she **will** call me tomorrow. (It's still the same day).

Reported questions

- Reported questions are usually introduced with the verbs **ask, inquire, wonder** or the expression **want to know**.
- When the direct question begins with a question word (**who, where, how, when, what**, etc), then the reported question is introduced with the same question word.

Grammar Reference

"What time is it?" he asked her. (direct question)

He asked her what time it was. (reported question)

- When the direct question begins with an auxiliary verb (**be, do, have**), or a modal verb (**can, may**, etc), then the reported question is introduced with **if** or **whether**.

"Do you play hockey on Saturdays?" (direct question)

He asked me if I played hockey on Saturdays. (reported question)

- Yes/No short answers** are expressed in reported speech with **subject + appropriate auxiliary verb** OR **subject + appropriate introductory verb**.

"Will you tell me?" she said. "No," he said. → She asked him if he would tell her, but he said **he wouldn't**. OR She asked him if he would tell her but **he refused**.

- Question tags** are omitted in reported speech. However, we can use the verb **remind** as a suitable introductory verb, in order to retain their effect.

"This isn't the first time he has made this mistake, is it?" she said. She **reminded** me (that) it wasn't the first time he had made that mistake.

- In reported questions, the verb is in the **affirmative**. The **question mark** and words/expressions such as **please, well, oh**, etc are omitted. The **verb tenses, pronouns and time expressions change as in statements**.

"Can I have a glass of water, please?" (direct question)

He asked me if he could have a glass of water. (reported question)

Indirect questions

- Indirect questions** are used to ask for **advice or information**. They are introduced with: **Could you tell me ... ? Do you know ... ? I wonder ... I want to know ... I doubt ...**, etc, and the verb is in the **affirmative**. If the indirect question starts with **I want to know ...**, **I wonder ...** or **I doubt ...**, the question mark is omitted.

"Where is John?" she asked me. (direct question)

"Do you know where John is?" she asked me. (indirect question)

"Did she tell you the truth?" she asked me. (direct question)

"Could you tell me if she told you the truth?" she asked me. (indirect question)

Question words (**what, where, who**, etc) or **whether, BUT NOT why**, can be followed by an **infinitive** in reported speech if the subject of the question is the speaker.

"Where can I leave it?" she asked me. → She wanted to know **where to leave it**.

Reported commands, requests, suggestions, etc.

To report **commands, requests, suggestions, instructions**, etc., we use a special introductory verb followed by a **to-infinitive**—**ing** form or **that-clause**, depending on the introductory verb.

In order to report orders, we use the introductory verbs **order** or **tell + sb + (not) to-infinitive**.

"Get out of the car!" (direct order)

The policeman **ordered** him to get out of the car. (reported order)

"Stop talking." (direct order)

The doctor **told** me to stop talking. (reported order)

Modal verbs in reported speech

The following modal verbs change in reported speech when the reported sentence is out-of-date.

will	would could (present reference)
can	would be able to (future reference)
may	might/could should (asking for advice)
shall	would (asking for information) offer (expressing offers)
must	must (expressing possibility or assumption) had to (expressing obligation)
needn't	didn't need to (present reference) didn't have to (present reference) wouldn't have to (future reference)

DIRECT SPEECH	REPORTED SPEECH
He said, "I will always do my best to help."	He said (that) he would always do his best to help.
He said, "I can't visit the National Park."	He said (that) he couldn't visit the National Park. (present reference)
He said, "You can feed the animals later."	He said (that) we would be able to feed the animals later. (future reference)
He said, "The ice may melt overnight."	He said (that) the ice might/could melt overnight.
He said, "I shall book a skiing trip?"	He said (me) if he should book a skiing trip. (advice)
He said, "When shall we go on holiday?"	He asked when we would go on holiday. (information)
He said, "I shall make you coffee?"	He offered to make me coffee. (offer)
He said, "They must have got delayed."	He said (that) they must have got delayed. (assumption)
He said, "You must respect nature."	He said (that) I had to respect nature. (obligation)
He said, "You needn't worry."	He said (that) I didn't need to/didn't have to worry. (present reference)
He said, "You needn't buy a tourist guide."	He said (that) I wouldn't have to buy a tourist guide. (future reference)

Subjunctive

The **subjunctive** (the bare infinitive form used for all persons: I go, you go, he/she/it go, etc) is used after certain verbs and expressions in formal speech. These are: **advise, ask, demand, insist, propose, recommend, request, suggest, it is essential, it is imperative, it is important, it is necessary, it is vital**, followed by (**that +**) **subject**. In British English, we normally use "**should + bare infinitive**" instead of the subjunctive.

It is **vital** (that) he deliver the parcel today. (less usual)

It is **vital** that you should deliver the parcel today. (more usual)

Grammar Reference

SPECIAL INTRODUCTORY VERBS		
Introductory verb	Direct speech	Reported speech
+ to-inf agree • claim • demand offer • promise refuse • threaten	"You're right! We should stay in tonight!" "This is the truth and I know it!" "I want a refund!" "I can help you with the housework." "I will bring your laptop back in two hours." "I won't forgive you!" "Leave or I'll call the police."	→ He agreed to stay in that night. → She claimed to know the truth. → He demanded to get a refund. → She offered to help me with the housework. → She promised to bring my laptop back in two hours. → She refused to forgive him. → He threatened to call the police if I didn't leave.
+ sb + to-inf advise allow ask beg command encourage forbid invite order • remind • warn	"If I were you, I would call him back." "You may go to the party as long as you don't come back late." "I need you to work late tonight." "Please don't leave!" "Report to the main deck!" "I think you should begin playing the piano." "You mustn't leave the school grounds." "Would you like to come to my party?" "Stay right here!" "Don't forget to buy some milk." "Be careful! The floor is slippery!"	→ She advised her to call him back. → They allowed her to go to the party as long as she didn't come back late. → He asked me to work late that night. → He begged her not to leave . → The Admiral commanded them to report to the main deck. → My dad encouraged me to begin playing the piano. → The principal forbade us to leave the school grounds. → She invited us to go to her party. → The police officer ordered him to stay right there. → He reminded me to buy some milk. → Our mother warned us to be careful because the floor was slippery.
-ing form accuse sb of • admit (to) apologise for boast about complain (to sb) about • deny insist on • suggest	"I know you stole my wallet!" "To be honest, I was a little bit scared." "I'm sorry I lost my temper." "My son is a genius!" "You never take my side!" "I didn't take your laptop without your permission." "I'm sure I'm right!" "Why don't we eat out tonight?"	→ He accused her of stealing his wallet. → She admitted (to) being a little bit scared. → She apologised for losing/having lost her temper. → She boasted about her son being a genius. → He complained (to me) about my never taking his side. → She denied taking her laptop without her permission. → Mark insisted on being right. → He suggested eating out that night.
+ that-clause think inform sb	"It was a difficult film to make." "Your application has been rejected."	→ The director thought that it had been a difficult film to make. → They informed me that my application had been rejected.
explain to sb how + to-infinitive/ clause	"That's how you should answer the question."	→ He explained to me how to answer the question. / He explained to me how I should answer the question.
wonder where/ what/why/how + clause	"Why is he late?" she asked herself.	→ She wondered why he was late.
wonder where/ what/how + to-infinitive (when the subject of the infinitive is the same as the subject of the verb)	"What shall I get her for her birthday?" he asked himself.	→ He wondered what to get her for her birthday.

* For the words with the asterisk, see GR10

Grammar Reference

- The verbs marked with an asterisk (*) can also be followed by a **that-clause** in reported speech.

Keith admitted *that he had felt hurt by what I had said.*

Note: In order to report negative commands and requests, we usually use **not + to-infinitive**.

Direct speech: The teacher said, "Don't make so much noise!"

Reported speech: The teacher told us not to make so much noise.

- In conversation, we use a mixture of statements, commands and questions. When we turn them into reported speech, we use **and, as, adding that, and he/she added that, because, but, since, etc.** Words/Expressions such as **oh!, oh dear, well, etc.**, are omitted in reported speech.

Direct speech: "Oh dear! I won't be able to finish the project on time!" Maria said to him. "You see, I only have two days left before the deadline."

Reported speech: Maria said that she wouldn't be able to finish the project on time **because** she only had two days left before the deadline.

Impersonal sentences

Impersonal sentences are sentences where there is no natural subject. We usually have the word **There** or **it** in the subject position.

We use:

- There + be** to say that someone/something exists.
There is a cinema next to the park.
- It + be** for identification. There's someone at the door for you. **It's** Mr Smith.
- It + be** for distance (**It's** a ten-minute walk from my house to the school), temperature (**It's** very hot in summer here), time (**It's** half past five), weather (**It's** snowing today) and in expressions such as: **it seems/appears that, it looks like, it doesn't matter, etc.** (**It** looks like John is going to be late.)

Also study the examples below.

We use:

- You/One** (more formal) to refer to people in general (anyone), not someone particular. **You** must have special permission to access the job. (= One must have ...)
- They** followed by the verbs **say, believe, etc** to refer to people in general. **They** say a dog is a man's best friend.
- They** to refer to a group of people (e.g. an organisation, people in authority etc). **They** are using the most advanced equipment in the company. (= not everyone, only the people who work in this company.)

Cleft sentences

Cleft sentences can be used to put emphasis on what we are saying.

- It is/was (not) + noun/noun phrase/pronoun + relative clause**
It wasn't John **who** saw an opera last night.
It is you **who** is right.

- What + subject + verb + is/was**
What Jen **loves** most **is** going to the park.

Module 3

Clauses of concession

Clauses of concession are used to express contrast. They are introduced with the following words/phrases:

- but** Fiona was ill **but** she still went to work.
- although/even though/though** **clause**
Even though is more emphatic than **although**.
Though is informal and is often used in everyday speech. It can also be put at the end of a sentence.
Although/Even though/Though it was raining, the concert took place.
The concert took place **although/even though/though** it was raining.
It was raining, **the concert took place, though**
- however/nevertheless** – A comma is always used after **however/nevertheless**.
She doesn't like classical music. **However/Nevertheless**, she goes to the concert.
- yet** (formal) **still** – When **yet** joins the main clause and the clause of concession, it is preceded by a comma. When **yet** is at the beginning of a sentence, it is followed by a comma. **The interview went very well, yet I don't know if I'll get the job.**
My course at university was difficult. Yet/Still, I'm proud that I did it.
- while/whereas** Mark is a writer **while/whereas** his brother is a famous pianist.
While he has talent, he can't find a job as an actor.
- in spite of/Despite + noun/-ing form/the fact that + clause**
In spite of/Despite the heavy rain, the concert hall was packed.
In spite of/Despite arriving early, we could not get a seat.
In spite of/Despite the fact that it was cold, there were many people at the play in the park.
- however/no matter how + adjective/adverb + subject + may + verb**
No matter how well she may know the music, the pianist is always afraid she will forget it.
However experienced he may be, the actor still gets stagefright.
- whatever/no matter what + clause**
No matter what happens, the show must go on.
- on the other hand + clause**
I would like to study science. **On the other hand**, I'm quite interested in languages, too.
- We use **having + past participle** to show that the action happened before the result.
Maria Reiche didn't solve the mystery behind the Nazca Lines, **in spite of/despite** **having spent** many decades studying them.

Grammar Reference

Modals

Can/could, may/might, must/have to, ought to, shall/should, will/would:

- don't take -s, -ing or -ed suffixes.
- are followed by the **bare infinitive** (infinitive without to).
- come **before the subject** in questions and are followed by **not** in negations.
- don't have tenses in the normal sense. When followed by a **present bare infinitive**, they refer to an **incomplete action or state** (i.e. present or future). You **should tell** them the truth. When followed by a **perfect bare infinitive**, they refer to a complete action or state. You **should have told** them the truth.

Note how the forms of the infinitive are formed:

Present: (to) go

Present continuous: (to) be going

Perfect: (to) have gone

Perfect continuous: (to) have been going

Obligation/Duty/Necessity (must, have to, should/ought to)

- **Must** expresses **duty/strong obligation** to do sth, and shows that sth is essential. We generally use **must** when the speaker has decided that sth is necessary (i.e. subjective). If you witness an accident, you **must report** it to the police. You **must apologise** to her for being so rude. (It is your duty./You are obliged to do sth.)
- **Have to** expresses **strong necessity/obligation**. We usually use **have to** when somebody other than the speaker has decided that sth is necessary (i.e. objective). Mum says that we **have to walk the dog every day**. (It's necessary.)
- **Had to** is the past form of both **must** and **have to**.
- **Should/Ought to** express **duty, weak obligation**. You **should help** your little brother with his homework. (It's your duty. - less emphatic than **must**)

Absence of necessity (don't have to/don't need to, needn't)

- **Don't have to/Don't need to/Needn't:** It isn't necessary to do sth in the present/future. She **doesn't have to work** late today. She **doesn't need to dress formally** for the party. He **needn't water the garden** today.
- **Didn't need to/Didn't have to:** It wasn't necessary to do sth. We **didn't need to** go if it was done or not. They **didn't have to** confirm their reservation. (We don't know if they confirmed it.)

Permission/Prohibition (can, may, mustn't, can't)

- **Can/May** are used to **ask for/give permission**. May is more formal than can. **Can/May I ask you something?** Yes, you **can/may**. Is it OK if ...?
- **Mustn't/Can't:** It is forbidden to do sth, it is against the rule/law; you are not allowed to do sth. You **mustn't/can't** smoke when wearing your seat belt.

Possibility (can, could)

- **Can + present infinitive:** General/theoretical possibility. Not usually used for a specific situation. Our teacher **can**

be quite strict. (general possibility - it is theoretically possible)

- **Could/May/Might + present infinitive:** Possibility in a specific situation. We **might go out** in the afternoon, so come in the morning. (It is possible/It is likely./Perhaps.)
- **Note:** We can use **can/could/might** in questions but **not may**. Who **could I ask** for professional advice?
- **Could/Might/Would + perfect infinitive** refer to sth in the past that was possible but didn't happen. I **would have gone** to the beach with them, but I was too busy.

Ability/inability (can, could, was able to)

- **Can('t)** expresses (in)ability in the present/future. She **can run** very fast. (She is able to ...)
- **Could** expresses general repeated ability in the past. He **could work very long hours** before he retired. (He was able to ...)
- **Was(n't) able to** expresses (in)ability on a specific occasion in the past. He **was(n't) able to fix** his computer. (He **didn't** manage to ...)
- **Couldn't** may be used to express any kind of inability in the past, repeated or specific. Emma **couldn't cook** when she was a teen. (past repeated action) Emma **couldn't/wasn't able to cook** yesterday, because her stove wasn't working. (past single action)

Offers/Suggestions (can, would, shall, could)

- **Can:** Can I help you with something? (Would you like me to ...?)
- **Would:** Would you like to sit down? (Do you want to ...?)
- **Shall:** Shall I return these books to the library for you? (Would you like me to ...?) Do you want me to ...?
- **Can/Could:** We can go mountain climbing. You could take out a loan. (Let's ...)

Probability (will, should/ought to)

- **Will:** He will get a promotion. (100% certain)
- **Should/Ought to:** They should/ought to replace your faulty MP3 player. (90% certain; future only; it's probable)

Advice (should, ought to, shall)

- **Should:** general advice You should take up a hobby. (It's my advice./I advise you to ...)
- **Ought to:** general advice You ought to be on time for work. (It's a good idea/thing to do.)
- **Shall:** asking for advice Shall I cut my hair short? (Do you think it's a good idea to ...?)

Logical Assumptions/Deductions (must, may/might, can't)

- **Must** = almost certain that this is/was true. This diamond ring **must** be very expensive. Jim **isn't** home, he **must** have left for football practice. (I'm sure/certain that sth is true.)
- **Can't/Couldn't** = almost certain that this is/was impossible. This **can't** be Joe's car; he sold his a month ago. She **couldn't** have made this delicious cake; she's hopeless at baking. (I'm sure that sth isn't true, real, etc.)

Grammar Reference

Summary of Functions of Modal Verbs

USE	PRESENT / FUTURE	PAST
ability/lack of ability	He can drive a car. She's able to use a PC. He can't play the piano.	When she was five, she could/was able to ride a bike. (past repeated action – ability in the past) After trying for years, he was able to break the secret code. (managed to do – past single action) She couldn't/wasn't able to write last when she was five. (past repeated action) She couldn't/wasn't able to reach him on the phone. (past single action)
possibility	She could be late. (50% certain; it's possible she is late) Steve may be working (50% certain; it's possible that he is working) She might be a little late. (40% certain; perhaps she will be late) It is likely that they will come with us. (90% certain) His new book is bound to be a best-seller. (it is very possible) David is likely to fly to Rome. (90% certain)	We could have been injured. (luckily we weren't) Mary may have fallen asleep. (perhaps she has) Lucy might have tried to contact us. (perhaps she has tried to) It was likely that she had missed the last bus. She was likely to have missed the last bus.
probability	He will be home soon. (100% certain; prediction) He should pass the test. (90% certain; future only; it's probable) They ought to be home by now. (90% certain; they will probably be home)	— She should have called by now. (She has probably called.) He ought to have gone to bed by now. (He has probably gone to bed.)
logical assumptions	She must be tired. (90% certain – positive; I'm sure she's tired) They can't be rich! (negative; I'm sure they aren't rich) He couldn't be at work. (negative; I don't think he's at work)	She must have completed the race. (positive; I'm sure she has completed the race.) She can't have lost her keys again. (negative; I'm sure she didn't lose her keys.) They couldn't have been here. (negative; I don't think they were here.)
permission	You can/are allowed to go out tonight. (giving permission; informal) You can't have friends over tonight. (refusing permission) Could I go out? (polite; asking for permission) You may go out. (formal; giving permission) Might I use your laptop? (more formal; asking for permission) I'm afraid you can't/mustn't use it. (formal; refusing permission) Children under 12 may not enter without an adult. (formal; refusing permission – written notice)	I could/was allowed to go out alone when I was 18. (general permission) I was allowed to go out alone last night. (permission for one particular action) I wasn't allowed to/couldn't use my dad's car. (no difference in meaning) — — — —
necessity	I must tidy my room. (I say so) He had to find a new flat. (necessity coming from outside the speaker) I've got to buy a new car. (informal) The cat needs feeding. OR The cat needs to be fed. (it's necessary) He doesn't have to/doesn't need to/needn't type the letter now. (it isn't necessary – absence of necessity) We ought to respect the elderly. (it's necessary)	I had to be home by 11:00. (I was obliged to) She had to find a new flat after she was evicted. They had to sell their car. The cat needed feeding. OR The cat needed to be fed. (it was necessary) She didn't have to/didn't need to buy any bread. (it wasn't necessary for her to buy any bread and she didn't – absence of necessity) She needn't have gone shopping. (it wasn't necessary for her to go shopping but she did) —

Grammar Reference

Summary of Functions of Modal Verbs

USE	PRESENT / FUTURE	PAST
advice	You should avoid fatty food. (general advice; I advise you) You ought to drive carefully. (I advise you; most people believe this) You had better not keep him waiting. (It's not a good idea; advice on a specific situation) I shall apply for the job? (asking for advice)	You should have been more careful. (but you weren't) He ought to have booked tickets. (but he didn't) It would have been better if you hadn't lied to her. (but you did) —
criticism	He could at least be more polite. They should tell us. You ought to be more careful.	He could at least have been more polite. They should have told us. (but they didn't) You ought to have been more careful. (It was the right thing to do, but you didn't do it.)
obligation	I must drink more water. (I need to; I say so) I have to drink more water. (I am obliged to; my doctor said so) We ought to help the poor. (It's the right thing to do, but we don't always do it.)	I had to drink more water because I was dehydrated. (I needed to) We ought to have helped the poor. (It was the right thing to do, but we didn't do it.)
requests	Can I use your dictionary? (informal) Could I use your dictionary? (polite) May I have some water? (formal) Might I borrow your dictionary? (very formal) Will you give me your pen? (very friendly) Would you mind coming with me? (polite)	— — — — — —
offers	Can I/we get you something? (informal) Shall I/we help you with that? (informal) Would you like me to do the cleaning? (polite)	— — —
suggestions	Shall we have a snack? I/We can always order a takeaway. We could go to the cinema. Why don't you take up a sport?	— — She could have told me. —
prohibition	You can't enter the lab. (you aren't allowed to) You mustn't talk in class. (it's forbidden) You may not use the list. (formal)	They couldn't enter the lab. (they weren't allowed to) — —
duty	We must attend the meeting. People ought to respect each other. (It's the right thing to do, but people don't do it.) He is supposed to be shopping today. (It is his responsibility)	We had to attend the meeting. She ought to have told me the truth. (It was the right thing to do, but she didn't always do it.) You were supposed to call Mr Jones.

Conditional Clauses

Other phrases/expressions used in place of *if* are the following: on condition that, provided (that), providing (that), as long as, even if, only if, unless (= if not), assuming (that), say (that) (= let's suppose that), suppose (that), supposing (that), what if, otherwise, or else, in case + present tense (for the present), in case + past tense (for the past).

Study the examples:

If Mr Evans attends our meeting, we'll discuss his new project. (He may attend or he may not.)

Provided (that)/Providing (that)/As long as Mr Evans attends our meeting, we'll discuss his new project. (We'll only discuss his new project if he attends.)

Even if Mr Evans doesn't attend our meeting, we'll discuss his new project. (Whether he attends or not doesn't affect the result.)

Only if Mr Evans attends our meeting, will we discuss his new project. (We'll only discuss his new project if he attends.)

Unless Mr Evans attends our meeting, we won't discuss his new project. (We'll only discuss his new project if he attends.)

Assuming (that) Mr Evans attends our meeting, we'll discuss his new project. (We expect him to attend, and we'll talk about his new project.)

Say/Suppose/Supposing (that) Mr Evans attends our meeting, shall we discuss his new project? (It is unlikely that he will attend but, if he does, would you like us to discuss his new project?)

Grammar Reference

What if we discussed Mr Evans' new project? (I suggest that we discuss his new project.)

Mr Evans had better attend our meeting, **otherwise** we won't discuss his new project. (If Mr Evans doesn't attend, we won't discuss his new project.)

Mr Evans needs to attend our meeting, **or else** we won't discuss his new project. (If he doesn't attend, we won't discuss his new project.)

When Mr Evans attends our meeting, we'll discuss his new project. (He will definitely attend.)

In case Mr Evans attends our meeting, we'll be ready to discuss his new project. (It is rather unlikely that he will attend, but we'd better be prepared.)

Mr Evans attended the meeting **in case** we discussed his new project. (He attended because he was afraid we might discuss his new project without him.)

Module 4

Impersonal sentences

Impersonal sentences are sentences where there is no natural subject. We usually have the word **There** or **It** in the subject position.

We use:

- **There + be** to say that someone/something exists.
There is a clock in the village square.
- **It + be** for identification. *There's someone on the phone for you. It's Mr Karimov.*
- **It + be** for **distance** (*It's a three-kilometre walk from the station to the university*), **temperature** (*It's very cold in winter here*), **time** (*It's four o'clock*), **weather** (*It's raining today*) and in **expressions** such as: *It seems/appears that, it looks like, it doesn't matter, etc* (*It looks like your watch is slow*.)

Also study the examples below.

We use:

- **You/One** (more formal) to refer to people in general (anyone), not someone in particular. *You should appear confident during your presentation. One must appear ...*
- **They** followed by the verbs **say, believe, etc.**, to refer to people in general. *They say there is no time like the present.*
- **They** to refer to a group of people (e.g. an organisation, people in authority, etc). *They are discussing the company's new work schedule (= not everyone, only the people who work in this company).*

Cleft sentences

Cleft sentences can be used to put emphasis on what we are saying.

- **It is/was (not) + noun/noun phrase/pronoun + relative clause**
*It wasn't the Romans who invented sundials.
It is Ulan who is right.*
- **It was it + noun/noun phrase/pronoun + relative clause...?**
*Was it a merkhut that they saw in the museum?
Was it your brother who saw the water clock?*

- **What + subject + verb + is/was**
What Berik loves most is ancient history.
- **The place where/The day when/The reason why/The person/people who + clause + is/was**
The place where you can see the Royal Observatory is London.
- **The (only/first) thing that + clause + is/was**
The first thing that we did was set our watches to local time.
- **All (that) + clause + is/was**
All (that) Jon does is (to) scroll through social media.

Module 5

Verb Complementation

Verb complements follow the verb in a sentence and give necessary information about the verb. There is a variety of structures that can follow various verbs. Study the examples below.

- **transitive verbs (+ indirect object) + direct object (noun/noun phrase/pronoun)**
(Transitive verbs take an object that receives an action. They answer the questions 'what' or 'whom'.)
Ben bought a car (direct object). (What did Ben buy? A car.)
Ben lent his brother/him (indirect object: his brother (noun phrase)/him (object pronoun)) *his new smartwatch* (direct object). (What did Ben lend? His new smartwatch. To whom? His brother.)
 - **intransitive verbs (no object)**
(Intransitive verbs do not take an object.)
The era of the electric car has finally arrived.
- BUT**
- **intransitive verbs + prepositional phrase (no object)**
They disagreed with him (the prepositional phrase 'with him' acts as a complement)
 - **verbs that are both transitive and intransitive**
transitive: *The students close their books* (direct object)
intransitive: *Shops close at 9 pm.* (no object)

Study also the complementation patterns below.

- **transitive/intransitive verbs (+ direct object) + adverb/adverbial phrase (manner/place/time)**
James ate his dinner quickly (manner) *and then he had a stomach ache.* (transitive)
He sat quietly (manner) *on the sofa* (place) *all evening* (time). (intransitive)
- **transitive verbs + -ing phrase**
They love designing new websites.
- **transitive verbs + (indirect object) + infinitive/infinitive phrase**
The girls wanted to dance. (infinitive)
They consider him (indirect object) *to be an expert in hydroponics.* (infinitive phrase)
- **transitive verb + that/wh- clause**
She thought that the slide projector was faulty.
He wondered where he had left his car keys.
- **linking verbs (be, feel, seem, taste, appear, sound, etc.) + subject complements** (noun or adjective that refers to the subject of the verb)

Grammar Reference

Mr Jameson **is my teacher**. (subject complement: my teacher – noun phrase)

This coke **tastes delicious**. (subject complement: delicious – adjective)

Pre- and Post-modifying noun structures

Nouns can have a variety of **pre-modifiers**:

- one or more nouns together a **biology professor**, a **University Science Course**
- a noun to show what material something is made of a **stone building**
- a noun ending in **-ing** my **reading glasses**
- a measurement of weight, distance, age, duration or value a **ten-kilogram piece of equipment**, a **five-kilometre race**, a **six-month-old baby**, a **fifty-minute interview**, a **hundred-euro pay rise**

Nouns can also have **post-modifiers**:

- a prepositional phrase the **CV with two pages**
- a relative clause the **meeting room which has an interactive whiteboard**

Module 6

Future Simple

Form: subject + will + main verb

AFFIRMATIVE	NEGATIVE
I/You/He/She/It/We/They will/I'll tell	I/You/He/She/It/We/They will not/won't tell
INTERROGATIVE	SHORT ANSWERS
Will I/you/he/she/it/we/they tell?	Yes, I/you/he/she/it/we/they will No, I/you/he/she/it/we/they won't

Use

We use the **future simple**:

- for **on-the-spot decisions**.
It's cold. I'll turn on the heating.
- for **future predictions based on what we believe or imagine will happen** (usually with the verbs: **hope, think, believe, expect, imagine**, etc.) and the expressions: I'm sure, I'm afraid, etc. with the adverbs: **probably, perhaps**, etc).
I expect Tom will enjoy being retired. I'm afraid Kelly will lose her job.
- for **promises** (usually with the verbs **promise, swear**, etc.) I promise we'll go on holiday next year, **threats** if you're late for work again, I'll tell your manager, **warnings** you should reach that report today or the boss will be angry, **hopes** he hopes his manager will approve his leave, **offers** we'll give you a pay rise.
- for actions/events/situations which will **definitely happen** in the future and which we cannot control. She will be back next month.

Time expressions used with the future simple: tomorrow, the day after tomorrow, next week/month/year, tonight, soon, in a week/month/year, etc.

be going to

Form: subject + verb to be (am/is/are) + going to + base infinitive of the main verb

AFFIRMATIVE	I am/I'm He/She/It is/Is We/You/They are/Are	going to leave.
NEGATIVE	I am not/I'm not He/She/It is not/isn't We/You/They are not/aren't	going to leave.
INTERROGATIVE	Am Is he/she/it Are we/you/they	going to leave?
SHORT ANSWERS	Yes, I am./No, I'm not. Yes, he/she/it is./No, he/she/it isn't. Yes, we/you/they are./ No, we/you/they aren't.	

Use

We use **be going to**:

- to talk about **future plans and intentions**. He's going to study to be a lawyer. (He's planning to ...)
- to make **predictions based on what we see or know**. Look at it! You're going to slip on the ice.
- to talk about **things we are sure about or we have already decided to do** in the near future. We are going to employ seven new members of staff this year. (We have already decided to do it.)

Present simple/Present continuous (future meaning)

- We can use the **present simple** to talk about **schedules or timetables**. Reception opens at 8.00 am.
- We use the **present continuous** for **fixed arrangements** in the near future. I am going to an interview tomorrow. They just phoned me.
- We use the **present continuous** for changing or gradually developing situations. More and more people are becoming unemployed.

Future continuous

Form: subject + will + be + verb -ing

AFFIRMATIVE	NEGATIVE
I/You/He/She/It/We/They will/I'll be meeting	I/You/He/She/It/We/They will not/won't be meeting
INTERROGATIVE	SHORT ANSWERS
Will I/you/he/she/it/we/they be meeting?	Yes, I/you/he/she/it/we/they will No, I/you/he/she/it/we/they won't

We use the **future continuous** for:

- actions which will be in progress at a **stated future time**. This time next week, I'll be working as a tour guide.
- actions which will **definitely happen** in the future as a result of a **routine or arrangement**. I'll be seeing the manager for a meeting on Tuesday.
- when we ask politely about someone's plans for the near future (to see if they can do sth for us or because we want to offer to do sth for them) Will you be using the computer for long? I need to type up my CV.

Grammar Reference

Future perfect

Form: **will + have + past participle** of the main verb

AFFIRMATIVE	NEGATIVE
I/You/He/She/It/We/They will have arrived .	I/You/He/She/It/We/They will not have arrived .
INTERROGATIVE	SHORT ANSWERS
Will I/you/he/she/it/we/they have arrived ?	Yes , I/you/he/she/it/we/they will . No , I/you/he/she/it/we/they won't .

We use the **future perfect** for actions that **will have finished** before a stated time in the future.

She **will have finished** her interview by 3 o'clock.

Future perfect continuous

Form: **will + have been + main verb + -ing**

AFFIRMATIVE	NEGATIVE
I/You/He/She/It/We/They will have been watching .	I/You/He/She/It/We/They will not/won't have been watching .
INTERROGATIVE	SHORT ANSWERS
Will I/you/he/she/it/we/they have been watching ?	Yes , I/you/he/she/it/we/they will . No , I/you/he/she/it/we/they won't .

We use the **future perfect continuous** to emphasise the duration of an action up to a certain time in the future. The **future perfect continuous** is often used with **by** or **for**.
By the time he finishes, he **will have been working** for sixteen hours.

Time expressions used with the future perfect and the future perfect continuous: before, by, by then, by the time, until/till, etc.

Note: **by** or **not ... until/till** are used with **future perfect**. **Until/till** are normally used with **future perfect** only in negative sentences.

Clauses of time

- **Clauses of time** are introduced by **after, as, as long as, as soon as, before, by the time** (before, not later than), **every time, immediately, just as, once, the moment** (that), **until/till** (= up to the time when), **when, while**, etc. You should hand in your application **before** the deadline.
- **Clauses of time** follow the rule of the sequence of tenses.

MAIN CLAUSE	TIME CLAUSE
present/future form	present form
We'll leave the office as soon as the meeting finishes. (NOT: will finish)	
MAIN CLAUSE	TIME CLAUSE
past form	past form
We felt after he had finished his job.	

- When the time clause precedes the main clause, a comma is used. When the time clause follows, no comma is used.
Every time I'm late for work, my boss gets angry.
BUT My boss gets angry every time I'm late for work.

Module 8

Verb Complementation

Verb complements follow the verb in a sentence and give necessary information about the verb. There is a variety of structures that can follow various verbs. Study the examples below.

- **transitive verbs (+ indirect object) + direct object (noun/noun phrase/pronoun)**
(Transitive verbs take an object that receives an action. They answer the questions 'what' or 'whom'.)
Ben **downloaded a software** (direct object). (What did Ben download? A software.)
Jon **gave his brother** (indirect object) **his brother** (noun phrase/the object pronoun) **his old wireless headset** (direct object). (What did Jon give? His old wireless headset. To whom? His brother.)
- **intransitive verbs (no object)**
(Intransitive verbs do not take an object.)
Quantum computers **have only existed** for a short time.
BUT
intransitive verbs + prepositional phrase (no object)
Nowadays, most people **communicate over the Internet**. (The prepositional phrase 'over the Internet' acts as a complement.)
- **verbs that are both transitive and intransitive**
transitive: Michael **is reading an e-book**. (direct object)
intransitive: Michael **is reading** right now. (no object)

Study also the complementation patterns below.

- **transitive/intransitive verbs (+ direct object) + adverb/adverbial phrase (manner/place/time)**
James **bought a 3D printer** (direct object) **immediately** (manner) after they were released. (transitive)
He **has been typing noisily** (manner) **in his office** (place) **all morning** (time). (intransitive)
- **transitive verbs + -ing phrase**
She **enjoys writing code and designing new software**.
- **transitive verbs + (indirect object) + infinitive/infinitive phrase**
The teacher **expects her students** (indirect object) **to use their phones responsibly** (infinitive phrase)
This company **wants its staff** (indirect object) **to achieve** their goals. (infinitive)
- **transitive verb + that/wh- clause**
We **didn't believe that machine learning was possible**.
He **guessed that the problem was due to a coding error**.
They **forgot which app they have been using**.
- **linking verbs (be, feel, seem, taste, appear, sound, etc.) + subject complements (noun or adjective that refers to the subject of the verb)**
The taxi app **is my favourite app**. (subject complement: my favourite app – noun phrase)
Machine learning **seems futuristic**. (subject complement: futuristic – adjective)
- **see, regard, describe, accept, identify etc. + sb/sth + as + object complement**
His colleagues **regard him as an authority on AI**.
Experts **have identified machine learning as the most promising development of the decade**.

Grammar Reference

Module 9

Adverbs

- **Adverbs** describe verbs, past participles, adjectives or other adverbs. Susan was **extremely** pleased with her exam results.
- An **adverb** can be one word (She described the process **explicitly**), two words (an adverbial phrase) (She described the process **this morning**) or a prepositional phrase which functions as an adverb in a sentence (She described the process **at the meeting**). Adverbs can express manner (**how**), place (**where**), time (**when**), frequency (**how often**), degree (**to what extent**), etc.
- **Adverbs** can also function as linking words, especially at the beginning of sentences e.g. **firstly**, **secondly**, **moreover**, etc.

Formation of adverbs

- We usually form an adverb by adding **-ly** to the adjective. **effectively**
- Adjectives ending in **-le** drop the **-e** and take **-y**. **reasonably**
- Adjectives ending in a consonant + **-y** drop the **-y** and take **-ily**. **noisily**
- Adjectives ending in **-l** take **-ly**. **locally**
- Adjectives ending in **-ic** usually take **-ally**. **dramatic** – **dramatically** **BUT** **public** – **publicly**
- The adjectives ending in **-ly** (**deadly**, **friendly**, **likely**, **lovely**, **lonely**, **lovely**, **silly**, **ugly**, etc.) form their adverbs with the phrase **in a ... way/manner/fashion**.
She speaks to all employees **in a friendly manner**.
- There are certain adverbs which have the same form as their adjectives: **best**, **better**, **big**, **cheap**, **clean**, **clear**, **close**, **cold**, **daily**, **dead**, **dear**, **dirty**, **early**, **extra**, **far**, **fast**, **fine**, **further**, **hourly**, **inside**, **kindly**, **long**, **loud**, **low**, **monthly**, **past**, **quick**, **quiet**, **right**, **slow**, **straight**, **sure**, **thin**, **thick**, **tight**, **weekly**, **well**, **yearly**, etc.
She was an **early** riser. She woke up **early**. The adverb with the asterisk (*) can also occur with the **-ly** suffix without a difference in meaning, but then they are more formal.
I bought it **cheap** (informal) / I bought it **cheaply** (formal)

The adverbs below have two forms, each with a different meaning:

- **deep** = a long way down She **dived deep** into the sea.
- **deeply** = greatly She **deeply** regretted keeping her secret to him.
- **direct** = by the shortest route The plane flies **direct** to New York.
- **directly** = immediately The meeting starts **directly** after school.
- **easy** = gently and slowly After the accident, Mike took it **easy** for a while.
- **easily** = without difficulty He will **easily** find a job with all his experience.
- **free** = without cost At this restaurant children under seven can eat **free**.
- **freely** = without restriction The witness spoke **freely** about the accident.
- **full** = definitely, very He knew **full** well what had happened but didn't say anything.
- **fully** = completely He **fully** explained the problem to us.
- **hard** = with much effort/force He fell **hard** onto the ground.
- **hardly** = scarcely He **hardly** spoke to anyone because he was so upset.
- **high** = at/to a high level The boxes were stacked **high** to the ceiling.
- **highly** = very much Mr Keller is **highly** skilled.

- **last** = after all others He finished **last** in the race.
- **lastly** = finally **Lastly**, we spoke about how to improve sales.
- **late** = not early We arrived **late** at the opera.
- **lately** = recently We have had some problems **lately** with our computer.
- **near** = close I always walk to work as it's quite **near**.
- **nearly** = almost I **nearly** missed the bus.
- **short** = without reaching sth The plane came down **short** of the runway, landing on the grass first.
- **shortly** = soon The presentation will start **shortly**.
- **pretty** = fairly I'm **pretty** sure that I turned off the lights when I left, but I'm not certain.
- **prettily** = in a pretty way Everyone noticed the **prettily** dressed woman across the road.
- **wide** = off-target The footballer's shot went **wide** and missed the goal.
- **widely** = to a large extent It is **widely** known that the economy is in trouble.
- **wrong** = incorrectly He tied the knot **wrong** and was asked to redo it.
- **wrongly** = unjustly (before verbs and past participles) He was **wrongly** accused of the crime.

Order of adverbs

Adverbs can be placed at the front, in the middle or at the end of a sentence (or clause).

When they are placed in the middle of the sentence:

- they go between the subject and the main verb. They **frequently attend** meetings. Do they **frequently attend** meetings?
- But when the main verb is 'be', the adverb is placed after it (except in cases of emphasis). Our manager is **frequently** in meetings. (Our manager **frequently is** in meetings.)
- If there is more than one verb, adverbs go after the first auxiliary or modal verb. We **don't frequently attend** meetings. We **must frequently be informed** of progress.

Adverbs of frequency (*occasionally*, *rarely*, *scarcely*, *never*, *always*, *hardly ever*, etc.) are usually (but not always) placed in the middle of the sentence. He **rarely** argues.

Adverbs of manner (*carefully*, *quickly*, *impatiently*, etc.), **place** (*down*, *inside*, *there*, *in the park*, etc.) and **time** (*now*, *then*, *today*, *this month*, etc.) are usually (but not always) placed after the object (if there is one) or at the end of a sentence or clause. Sometimes they are placed in the middle if the object is very long, or at the beginning for emphasis. The teacher spoke to the children **firmly**.

The teacher spoke to the children **firmly** even though she was not angry.

The teacher **firmly** spoke to the children who had broken the window.

She argued with her brother **yesterday**. **Yesterday**, she argued with her brother.

Note: If an adverb is modifying an adjective or other adverb, it is placed in front of the word it is modifying.

When there are two or more adverbs in the same sentence,

- they usually go in the following order: manner – place – time. The children waited **impatiently** at the bus stop **after school**.
- if there is a verb of movement, such as **go**, **come** and **leave**, in the sentence, the adverbs usually go in the following order: place – manner – time. I went there **quickly** **this morning**.

Style

Informal vs Formal speech

Informal speech

Informal speech is used when the speaker is speaking in an intimate, personal way, without preparation; for example, in an everyday conversation in real life (in the canteen, in the street, etc.) or over the phone. The speaker sounds friendly and casual.

Informal speech is characterised by:

- everyday phrases or slang vocabulary.
Here you are, I did my best, Thanks!, Sorry!
- short verb forms.
I'm from York.
- short simple sentences with simple grammatical structures.
I really love pizza.
- delaying expressions.
Well, Oh!
- informal phrasal verbs.
What's up?
- omission of words.
Seen John? instead of Have you seen John?

Formal speech

Formal speech is used when the speaker has prepared beforehand what he or she is saying; for example, when making a presentation or delivering an official speech. The speaker sounds polite and official.

Formal speech is characterised by:

- more advanced vocabulary.
Therefore, it is our responsibility to ...
- full verb forms.
We are considering ...
- longer sentences
I would like to thank you for inviting me tonight to ...
- no use of phrasal verbs.
*The meeting was cancelled instead of
The meeting was called off*
- the passive voice.
It has been reported ...

Informal vs Formal writing

Informal writing takes a personal emotional tone. Authors often use the first person point of view (I, we), or they can address the reader using the second person (you, your). This style is mainly used in postcards, notes, emails/letters to a friend, stories, blogs, forums, text messages, jokes and diary entries.

Informal style is characterised by:

- everyday language with figures of speech (metaphors, similes, etc.) and omitted words. Informal writing takes a personal tone, as if speaking directly to an audience (the reader).
- short sentences. *I can't wait to go.*
- contractions (I'm) and abbreviations (TV, photos) whenever possible.
- imperatives. *Remember to call Joan.*
- the active voice. *They report that ...*
- extra punctuation. *It a!!!!!!!*

Formal writing takes an impersonal objective tone. Authors often use the third person point of view (They, it). This style is mainly used in business letters, professional emails/reports, memos, essays, news articles, official speeches, biographies, job adverts, brochures, scientific books and in letters to an editor or person in authority.

Formal style is characterised by:

- longer, more complex sentences without using emotive punctuation, e.g. exclamation marks. Each main point needs to be introduced, elaborated and concluded
- full words.
It is possible rather than It's possible
- no imperatives.
Please refer to ...
- the passive voice.
It is reported ...

Types of texts

Descriptive texts deal with factual information about people, places or scenes. Technical descriptions are impersonal and contain specific information, without mentioning the writer's feelings or moods.

Narrative texts tell a story. They are characterised by time sequence signals e.g. *first, after that, then, a few minutes later* etc. Narrative texts deal mainly with changes in time, i.e. with actions and events. They are found in short stories, novels, biographies, anecdotes, diaries, news, stories and reports.

Expository texts explain facts and information. They are characterised by headings, words in bold, charts, graphs and captions.

Argumentative texts present arguments for or against a problem. Arguments need to be objective and linked with appropriate linkers.

Instructive texts tell readers what to do. They are characterised by the use of the imperative and a sequence of actions. They can be directions, regulations, rules, etc.

Persuasive texts try to convince readers to take a certain opinion or perform a certain action. They will use emotive words in order to have an effect on the reader.

Phrasal Verbs

be

be about to = (int) be on the point of *He was about to leave when the phone rang.*

be after = (tr) chase *The police were after the thief.*

be down with = (tr) be ill with; **go down with** *John is down with the flu.*

be for = (tr) be in favour of (opp: **be against**) *They are (all) for the proposal to build a leisure centre.*

be in for = (tr) expect sth, usu bad *We are in for bad weather.*

be off = (tr) be absent from school/work *John isn't in his office. He's off for two days.*

be on = (tr) be shown on TV, at the cinema/theatre etc.

There's a good film on at the Metro.

be out = **1** (int) be unfashionable *Long skirts are out this season.* **2** (int) (of light/fire) have stopped burning. *The fire is out – that's why it's cold in here.*

be over = (int) have come to an end *The film starts at 8.00 and will be over at 10.00.*

be up to = **1** (tr) be capable of *Let's take the train – I don't think I'm up to driving so far.* **2** (tr) feel like doing sth usu sth wrong *The children must be up to something – they're very quiet.*

break

break down = **1** (int) (of machinery) stop working *The car broke down so we missed the ferry.* **2** (int) (of a person) lose control of feelings. *She broke down when she was told her father was in an accident.* **3** (int) fail (talks/negotiations etc) *Negotiations broke down so the two leaders had to meet again.* **4** (tr) separate under headings *He broke the list down into categories.*

break in = **1** (int) enter by force or illegally *Burglars broke in and stole my jewellery.* **2** (tr) interrupt *He broke into their conversation to ask a question.*

break into = (tr) enter by force *He broke into the shop and stole some money.*

break through = (tr) advance (in spite of opposition) *The soldiers broke through the enemy lines.*

break to = (tr) tell (usu bad news) to sb in a kind way *He had to break the bad news to John.*

break up = (int) stop for holidays (school etc) *Schools break up in mid-July for the summer holidays.*

bring

bring about = (tr) cause to happen *The end of the war brought about great change.*

bring back = (tr) cause to recall *This smell brings back childhood memories.*

bring down = (tr) cause to fall *The measures brought down the government.*

bring forward = (tr) move sth to an earlier date or time *The exam date was brought forward by a week.*

bring in = (tr) create profit/money *His plan brought in lots of money.*

bring on = (tr) cause, usu sth unpleasant *The damp weather brought on his cold.*

bring out = (tr) put on the market *The new shampoo will be brought out next March.*

bring round = **1** (tr) cause to regain consciousness; **bring to** *They poured cold water on his face to bring him round.*

2 (tr) persuade; **bring round (to)** *He tried to bring him round to his point of view.*

bring up = **1** (tr) raise a child *She was brought up by her grandmother as her parents were abroad.* **2** (tr) mention/introduce a subject *You shouldn't have brought that matter up in front of everyone.*

call

call for = (tr) need *The situation calls for immediate action.*

call in = (int) visit briefly *She called in last Monday to see our new house.*

call off = (tr) cancel *The match was called off due to bad weather.*

call on sb = (tr) visit formally *Our representative will call on your company next Tuesday.*

call out = (tr) order to come to sb's help *All fire-fighters were called out to save the burning building.*

carry

be carried away = be very excited *They were all carried away by his performance.*

carry off = (tr) handle a difficult situation successfully *She carried her speech off well.*

carry on (with) = (tr) continue with *Carry on with your work while I am out.*

carry out = (tr) conduct an experiment *They carried out some tests to see the effects of the new drug.*

carry through = complete successfully *I don't think anyone but Matt can carry this project through.*

come

come across = (tr) find/meet by chance *I came across this ring in an antique shop.*

come by = (tr) obtain *Everybody wonders how he came by so much money.*

come down to = (int) be passed on to sb by inheritance *This house came down to me after my aunt died.*

come down with = (tr) become ill; **go down with** *I'm sure I'm coming down with the flu.*

come into = (tr) inherit *He came into a large sum of money after his grandfather died.*

come off = (int) succeed *Despite all his planning the deal didn't come off.*

come out = **1** (int) (of flowers) begin to blossom *Roses come out in summer.* **2** (int) be published *When does her new book come out?* **3** (int) (of stains) be able to be removed *This oil stain will come out if you let it soak in warm water.*

come round = **1** (int) visit casually *Come round any time for coffee.* **2** (int) recover consciousness *To the doctors' surprise the patient came round quickly.*

come to = (tr) amount to a total *The bill came to £50.*

come up = **1** (int) be mentioned *Your name came up in the conversation.* **2** (tr) arise, occur *Such an opportunity comes up once in a lifetime.*

come up to = **1** (tr) approach *A strange man came up to me and asked me for money.* **2** (tr) equal, be up to (expectations) *He failed to come up to his parents' expectations.*

come up with = (tr) find (an answer, solution etc) *He came up with a brilliant plan to save the company.*

Appendix 1

cut

cut across = (tr) take a shorter way *Cut across this field if you're in a hurry.*

cut back (on) = (tr) reduce (expenses, production); **cut down on** *We must cut back on eating out; we just can't afford it.*

cut in = 1) (int) move suddenly in front of another car *A car cut in and forced us to slow down.* 2) (int) interrupt *Would you mind not cutting in until I've finished speaking?*

cut into = (tr) divide *She put the pizza on a large flat dish and cut it into eight pieces.*

cut off = 1) (tr) disconnect *Our electricity was cut off as we didn't pay the bill on time.* 2) (tr) isolate (usu places) *The flood cut off the village for a week.*

cut out = (tr) omit *Your article is fine provided you cut out the third paragraph.*

be cut out for/to be = be suited for (a profession) *I don't think I'm cut out for teaching/to be a teacher - I haven't got enough patience.*

cut up = (tr) cut into small pieces *Cut up the meat for Johnny - otherwise he won't be able to eat it.*

do

do away with = (tr) stop using *The use of computers has enabled us to do away with a lot of paperwork.*

do down = (tr) speak badly of sb *Nobody likes him because he is always doing people down.*

do in = (tr) kill *He threatened to do her in if she didn't cooperate.*

do up = (tr) fasten; tie *Do up your jacket; it's cold.*

do with = (tr) want I could do with a cup of tea.

do without = (tr) live or continue without having sth/sb *There's no cola left - we'll have to do without it!*

draw

draw back = (int) move away *On seeing the snake she drew back in terror.*

draw into = (tr) make sb become involved in sth *The professor was drawn into the debate on global warming.*

draw out = 1) (tr) encourage sb to be less shy *He's very shy; someone should draw him out.* 2) (tr) take money out of a bank account *He drew out some money to pay his rent.*

draw up = 1) (tr) pull *He drew up the chair to the desk and started working on his computer.* 2) (tr) write out (will, list, contract etc) *My grandfather had a solicitor draw up his will last year.*

fall

fall apart = (int) come to pieces *This book is so old that it's falling apart.*

fall back on = turn to (sb/sth) for help when other plans have failed *Keep some money in the bank to fall back on in case something goes wrong.*

fall behind = (int) fail to keep up with *The company cancelled my credit card when I fell behind with my payments.*

fall for = (tr) be deceived *Everybody fell for the con man's lies.*

fall in = (tr) collapse *I'm afraid the roof will fall in if an earthquake hits the area.*

fall in with = (tr) agree with *All members of the committee fell in with his suggestion to build a new hospital.*

fall into = 1) (tr) belong to; be part of (categories) *This novel falls into the category of historical adventure.* 2) (tr) begin; enter a state *I fell into conversation with an interesting man on the train.*

fall on = 1) (tr) attack *The rider fell on the policeman.* 2) (tr) eat hungrily *The children fell on the cake and ate all of it.*

fall out (with) = quarrel *She fell out with Peter because he came home late.*

fall through = (int) fail to be completed *Our plans fell through due to lack of money.*

get

get across = (tr) successfully communicate ideas *The teacher got his message across by using diagrams and photographs.*

get along = (int) continue despite difficulties *She is getting along fine despite all her problems.*

get along with = (tr) be on friendly terms; **get on with** *They get along with each other despite their differences.*

get at = (int) mean I don't know what you're getting at by saying such things.

get away with = (tr) escape punishment for a wrongful, illegal act *He got away with a fine of only 5.*

get back = (tr) recover possession of *She managed to get back the package had lost two months before.*

get down = 1) (tr) swallow although difficult *I can't get this book down - it's very tough.* 2) (tr) depress *The rainy weather gets me down.*

get down to = (tr) start doing sth seriously *It's time you got down to looking for a better job.*

get on = 1) (tr) enter (bus, train, etc) *We must have got on the school bus.* 2) (int) make progress *He's getting on well at school.*

get on with = (tr) be on good terms with *She gets on well with her friend Lucy.*

get out = (int) (of news) become known *How did the news of his promotion get out?*

get over = (tr) recover from *He's trying hard to get over the loss of his job.*

get round = (tr) persuade; bring round *We eventually got him round to our point of view.*

get round to = (tr) = find time to do sth *I haven't got round to writing that letter yet.*

get through = 1) (tr) finish (a piece of work) *I've got to get through this chapter before I go out.* 2) (int) go on living through difficult times *How can old people get through the cold winters?*

get through to = (tr) reach by phone *Did you get through to your dentist or will you call him later?*

get up = (int) rise from bed *What time did you get up today?*

give

give away = 1) (tr) reveal *Promise not to give away my secret.* 2) (tr) give sth free of charge *She gave away most of her clothes to the poor.*

give back = (tr) return *Give me back the money or I'll sue you.*

give in = (int) surrender; yield *He finally gave in and admitted he was wrong.*

give off = (tr) emit (smells, heat, fumes etc) *The radiators give off lots of heat.*

give up = 1) (int) come to an end *Their supplies gave out halfway through the climb.* 2) (tr) distribute *They were giving out free samples of the new shampoo at the supermarket.*

give up = 1) (tr) abandon an attempt/habit *He gave up eating meat. He eats nothing but vegetables, fruits and tofu.*

2) (tr) surrender *The thieves gave themselves up to the police.*

Appendix 1

go

go after = (tr) pursue The policeman **went after** the thief and caught him.

go ahead = (int) be allowed to happen Although several members were absent, the board meeting **went ahead** as planned.

go away = (int) (of a problem, feeling, etc) disappear; cease if you take an aspirin, your headache will **go away**.

go back on = (tr) break a promise/agreement Although he had promised to help us, he **went back on** his word.

go by = (tr) base my ideas on You shouldn't **go by** what he says – he always exaggerates.

go down with = (tr) become ill John has **gone down with** the flu.

go for = (tr) apply for (a job) Why don't you **go for** this marketing job? You may get it.

go in for = (tr) take part in (a competition) She **went in for** the boxing competition and won first prize.

go off = 1) (int) explode (bomb) The bomb **went off**, but fortunately no one was injured. 2) ring (alarm) When the alarm **went off** she woke up and got out of bed.

3) (int) (of food) spoil The milk has **gone off**, it smells terrible.

go on = 1) (int) continue, carry on Go on, finish what you were saying. 2) (int) happen A large crowd gathered to see what was **going on**.

go out = (int) stop burning Put some coal on the fire before it **goes out**.

go over = 1) (tr) examine details; go through The police **went over/through** the evidence many times trying to come up with something. 2) (tr) repeat Go **over** the details again please. I wasn't following you.

go round = 1) (tr) be enough for everyone to have a share There's enough food to **go round**. 2) (int) (news/disease) spread; circulate; get round The news **went round** very quickly.

go through = 1) (tr) experience She **went through** a difficult time when she moved. 2) (int) (of a deal/arrangement) be completed with success Has the sale of your car **gone through** yet? 3) (tr) discuss in detail They **went through** his suggestions again before making a decision.

go up = (int) rise (price) The price of petrol **went up** again yesterday.

go with = (tr) match This jumper really **goes with** your skirt.

go without = (tr) endure the lack of sth, do without Since they had run out of lemonade, they had to **go without**.

hold

hold back = 1) (tr) control (tears, laughter) She tried to **hold back** her tears and not cry in front of her mum. 2) (int) hesitate Don't **hold back**, take the opportunity while it's there.

hold in = (tr) restrain He **held** his anger in and didn't shout at the boy.

hold off = (int) not do sth immediately; delay sth They decided to **hold off** buying a house until next year.

hold on = (int) wait (esp on the phone) Please **hold on**; Mr Matthews is on the other line.

hold out = 1) (int) last The food supplies won't **hold out** until Monday so we'll have to find some food before then.

2) (int) persist The miners **held out** for 18 months before they called off the strike.

hold on to = (tr) (of an idea, belief, etc) continue to believe Whatever you say, I'll **hold on to** my opinion.

hold up = 1) (tr) delay Sorry we're late, we were **held up** in traffic.

2) (tr) use violence in order to rob The robbers **held up** the train and stole 22,000.

keep

keep away (from) = (tr) stay away She had to be **kept away** from school as she had measles.

keep back = (tr) not tell I think she's **keeping** something back.

keep down = (tr) cause to remain at a lower level The government is trying to **keep prices down**.

keep in = (tr) make sb stay (as a punishment) The teacher **kept us in** for misbehaving in class.

keep off = (tr) stay away from; avoid **Keep off** the benches. The paint is wet.

keep on = (int) continue despite difficulties Although he failed his test, he **kept on** studying and retook it in May.

keep out = (tr) stop sb from going into a place He locked the gate to **keep out** unwanted visitors.

keep up (with) = 1) (tr) stay at the same level as sb/sth Despite being ill he **kept up with** his work and passed the exam.

2) (tr) continue to be informed He reads a newspaper every day to **keep up with** the news.

let

let down = 1) (tr) (of clothes) lengthen (opp. **take up**) I need to **let down** my skirt; it's too short. 2) (tr) disappoint He **let me down** by lying to me.

let in (to) = allow sb to enter a place They **let us into** the room after we had showed them our invitation card.

let off = (tr) not to punish The policeman **let him off** without arresting him.

let on = (int) reveal a secret He **let on** that she had stolen the money.

let out = 1) (tr) release He was **let out of** prison after 10 years.

2) (tr) (of clothes) make larger (opp. **take in**) I have to have my trousers **let out**; I've gained several kilos.

let up = (int) become less strong The boots won't sail until the strong winds **let up**.

look

look after = (tr) take care of My mother **looks after** my son when I'm working.

look back (on) = (tr) consider the past My grandfather **looks back on** his army days with pleasure.

look down on = (tr) despise (opp. **look up to**) She **looks down on** John because he isn't rich.

look forward to = (tr) anticipate with pleasure I'm really **looking forward to** my brother's wedding.

look in on sb = (tr) pay a short visit to I'll **look in on** my mother on my way home.

look into = (tr) investigate The police are **looking into** the case of the smuggled diamonds.

look on = (int) observe He was just **looking on** while the other two were playing.

look out = (int) be careful **Look out!** There's a car coming.

look out for = (tr) be alert in order to see/find sb/sth When you're clearing the flat, please **look out for** my silver earring. I lost it somewhere.

look over = (tr) examine quickly without paying attention to detail Do you have a few minutes to **look over** my work?

Appendix 1

look round = (tr) visit a place and look at the different parts in it. She spent a few hours **looking round** the shops.

look through = (tr) examine a group of things in order to choose one. **Look through** these books and see if you want any of them.

look up = (tr) look for sth in an appropriate book/list. Get the telephone directory and **look up** the number of the shop.

make

be made for = suit exactly. Buy this dress – it's simply **made for** you.

make for = (tr) go towards. It's late. Let's **make for** home as quickly as possible.

make out = 1) (tr) distinguish. I can't **make out** what the name on the bill is. 2) (tr) write out; fill in. Please **make** the cheque **out** to Norman Brothers Ltd.

make over = (tr) give possession of sth to sb else. Before their uncle died he **made over** his whole estate to them.

make up = 1) (tr) invent. That is not true; she **made** the whole thing up. 2) (tr) put cosmetics on. She **made herself up** before going out. 3) (int) reconcile. Thank goodness they've **made up** after their quarrel.

make up for = compensate. The good summer weather is **making up for** the bad winter.

make up one's mind = decide. She can't **make up her mind** whether to go to Turkey or India.

pass

pass away = (int) die. I'm sorry to tell you your aunt **passed away** last night.

pass off as = (tr) pretend to be sth/sb else successfully. She **passed herself off as** a police officer in order to get into the building.

pass out = (int) lose consciousness. He **passed out** from the fumes, and it took them some time to bring him back.

pay

pay back = 1) (tr) return money owed. I promise to **pay you back** as soon as I get paid. 2) (tr) take revenge on sb. I'll **pay you back** one day for what you did to my family.

pay down = (tr) pay part of the price for sth and the rest over a period of time. We **paid down** a £100 deposit and the rest over a period of 6 months.

pay for = (tr) receive punishment. All criminals should **pay for** their crimes.

pay off = (tr) pay sb to leave employment. They **paid off** all their senior management in an attempt to restructure the company.

pay up = (tr) pay (a debt) in full. As I hadn't **paid my** monthly instalments the receptionist requested me to **pay up** the balance.

pull

pull down = (tr) demolish. They **pulled down** the old building as it was dangerous.

pull in = (tr) (of trains) arrive (opp: **pull out**). The train from Dublin **pulls in** at 5.30 pm.

pull oneself together = bring one's feelings under control. Although she was very sad, she **pulled herself together** and continued working.

pull through = (int) succeed despite difficulties. If all employees work harder, the company will definitely **pull through**.

pull up = stop. The jockey **pulled** the horse **up** as it had an injured leg.

put

put aside/by = (tr) save. He **puts aside** 50 a month for his summer holidays.

put across = (tr) communicate successfully. Get **across/over** the lecturer managed to **put** his ideas **across** to his audience.

put away = 1) (tr) store. Put the toys **away** in the cupboard. We're expecting guests tonight. 2) (tr) put sb into prison/mental hospital. The murderer was **put away** for 10 years.

put down = 1) (tr) write down; **take down**. Make sure you **put down** everything said at the meeting. 2) (tr) suppress forcibly. The police try to **put down** rioting at football matches.

put down to = (tr) attribute. She **puts** her recent success **down to** hard work and dedication.

put forward = (tr) propose. He **put forward** a new plan to help decrease unemployment.

put off = (tr) postpone. The meeting was **put off** due to the president's illness.

put on = 1) (tr) dress oneself in. **Put on** your coat and come with me. 2) (tr) increase (in weight). He has **put on** weight since he stopped working out. 3) (tr) cause to take place (show/performance). They are **putting on** 'My Fair Lady' on 8th May next month.

put out = 1) (tr) extinguish (fire etc). The firefighters **put out** the fire quickly. 2) cause trouble. I hope I'm not **putting you out** by asking you to do this.

be put out = be annoyed. She was **put out** by his bad behaviour.

put through = (tr) connect by phone. Can you **put me through** to Mr Jones, please?

put up = 1) (tr) erect; build. They've **put up** a statue in the square. 2) (tr) offer hospitality. When you are in town, I'll **put you up** in my flat. 3) (tr) show in a public place. The WWF has **put up** posters all round the city.

put up with = (tr) tolerate. I won't **put up with** such rude behaviour any longer.

run

run across/into = (tr) meet/find by chance. She **ran across** an old friend while on holiday.

run after = (tr) chase. The dog **ran after** the cat.

run away with = (tr) steal. The thieves **ran away with** £15,000,000 from the bank.

run down = 1) (tr) knock down (with a vehicle); **run over**. The old man was **run down/over** by a bus. 2) (tr) speak badly of sb. You shouldn't **run down** your sister; you've got no reason to criticise her.

run in = (tr) bring a new car engine into full use (by driving it slowly for a set period). I can't go any faster; I'm **running** the car in.

run off = (tr) make prints/copies. Can you please **run off** 100 copies for me?

run out of = (tr) no longer have a supply. We've **run out of** coffee. Could you buy some when you go out?

run through = 1) (tr) use up. It's unbelievable; he has **run through** all his money already. 2) (tr) rehearse, check or revise quickly. Let's **run through** the last scene once more.

run up = (tr) accumulate. He **ran up** a huge debt on his credit card which he couldn't pay off.

run up against = (tr) encounter (difficulties/opposition). He **ran up against** difficulties when he tried to enter the country without a visa.

see

see about = (tr) deal with; **see to** / **see about** the food if you get the table ready.

see off = (tr) accompany a traveller to his/her plane, train etc. When she left for Berlin her parents **saw her off** at the station.

see out = (tr) accompany sb to the door/exit of a house/building. Don't bother to **see me out**, I can find my own way.

see over = (tr) inspect a place; look round. She decided to **see the flat over** before buying it.

see through = (tr) not be deceived. He was such a poor liar that they **saw through** him at once.

set

set about = (tr) begin to do. He **set about** fixing the door while she cleaned the house.

set aside = 1) (tr) save for a special purpose. She **sets aside** £20 a week to buy a car. 2) (tr) stop sth for some time; **set by**. She had to **set the report aside** until she had dealt with the correspondence.

set back = 1) move the hands of a clock/watch to show an earlier time. We usually **set the clocks back** one hour at the beginning of autumn. 2) (tr) delay. The opening of the new leisure centre was **set back** by a few weeks.

set in = (int) (of weather) start and seem likely to continue. The rain seems to have **set in**.

set off/out = (int) start a journey. We'll **set off/out** for the airport at 6 am.

set on = (tr) (cause to) attack. He threatened to **set the dogs on** us if we didn't leave.

set to = (int) begin working hard. Get the driver and **set to**. There's lots of work to do before our visitors arrive.

set up = (tr) start a business. He left his job to **set up** his own business.

set sb up = (tr) cause sb to receive blame. Although **he** threw someone **had set him up**, he couldn't prove it.

stand

stand by = 1) (tr) support sb, esp in difficulties. / **Stand by** you, whatever happens. 2) (int) be ready for action. The army was **standing by** in case war broke out.

stand for = 1) (tr) represent. Do you know what UFO **stands for**? 2) (tr) tolerate; put up with. We won't **stand for** his rude behaviour any longer.

stand in for = (tr) replace sb temporarily. Since John is ill I'll **stand in for** him tonight at work.

stand out = (int) be noticeable. She really **stands out** wearing that pink suit.

stand up = 1) (int) rise to one's feet. **Stand up** and come over here. 2) (tr) fail to meet. We were supposed to meet at 11.00 but he **stood me up**.

stand up for = (tr) defend. You ought to **stand up for** your friends when people choose them.

stand up to = (tr) resist. The building has been reinforced to **stand up to** earthquakes.

take

take after = (tr) resemble. She **takes after** her mother. She looks like her, just like her.

take away = (tr) remove. May I **take away** the dirty dishes now?

take back = (tr) retract. He **took back** his remarks about her speaking because she was obviously upset.

take for = (tr) identify wrongly. Sorry, I **took you for** your brother. I always mix you up.

take in = 1) (tr) give accommodation. Seaside villagers often **take in** tourists as paying guests. 2) (tr) make clothes narrower (opp: **let out**). Now that I've lost weight I should **take my clothes in**. 3) (tr) fully understand. Did you **take in** what I said or should I repeat it?

take off = 1) (tr) remove clothes (opp: **put on**). **Take off** this dirty dress and I'll wash it for you. 2) (tr) (of planes) leave the ground (opp: **come down**). We **took the plane take off** and disappear into the clouds. 3) (tr) (informal) He's good at **taking off** famous people. 4) (tr) (of time) take time as a holiday. He **took three days off** work to go and see his parents.

take on = 1) (tr) undertake with responsibility. He **took on** an extra class as the previous teacher had quit. 2) (tr) employ. They decided to **take on** two new assistants during the holiday rush.

take out = 1) (tr) remove. The dentist **took out** my bad tooth. 2) (tr) clean (mud, dirt). Use this spray to **take out** the stain.

take over = (tr) gain control of sth. She'll **take over** the company when her father retires.

take to = 1) (tr) begin a habit. I don't know why she's **taken to** biting her nails. 2) (tr) like. She has really **taken to** her nephew and always buys him expensive presents.

take up = 1) (tr) begin a hobby, sport, job. When he retired, he **took up** sailing as a hobby. 2) (tr) fill time, space. This sofa **takes up** most of the living room.

be taken aback = be strongly surprised. We were **taken aback** when they said they were getting married. No one expected it.

be taken in = (tr) be deceived. She was **taken in** by the con man and bought a fake insurance policy.

turn

turn away = (tr) refuse admittance. They tried to enter the pub but they were **turned away** at the door.

turn down = 1) (tr) refuse an offer. He proposed to her but she **turned him down**. 2) (tr) reduce loudness (opp: **turn up**). Could you **turn down** the radio a little? I can't hear him on the phone.

turn in = 1) (int) go to bed. It's late and I'm tired. I'd better **turn in**.

2) (tr) give to the police. They **turned the fugitive in** to the police.

turn off = (tr) switch off (opp: **turn on**). **Turn off** the oven before you leave.

turn out = 1) (tr) produce. Our factory **turns out** 100 cars a day.

2) (int) prove to be. He **turned out** to be the one who had stolen the money.

turn over = (int) turn to a new page; change the TV channel. Now children, **turn over** to the next page.

turn to = 1) (tr) go to sb for help/advice. When I'm in trouble I always **turn to** my brother. 2) (tr) begin (a way of life or doing sth). I will never understand the reasons why people **turn to** crime.

turn up = 1) (int) arrive or appear (unexpectedly). He finally **turned up** at the meeting an hour late. 2) (int) (of an opportunity) arise. When a better job **turned up** she seized the chance and applied for it.

wear

wear away = (tr) (of wood/stone) reduce gradually. We couldn't make out the names on the gravestone because the letters had been completely **worn away**.

Appendix 1

wear down = (tr) reduce opposition gradually *At first she refused to buy her son the phone, but he eventually wore her down.*

wear off = (int) stop gradually *Your nervousness will wear off when the exams are over.*

wear out = 1) (tr) exhaust *I've worked so hard today, I'm worn out.* 2) (int) use until no longer serviceable *We'll have to replace this plug – it is completely worn out.*

work

work on = (tr) have an effect on *We have to check this new drug to see how it works on animals.*

work out = 1) (tr) find a solution to a problem by reasoning or calculation *I'm sure we can work out our problems if we talk about them.* 2) (int) develop successfully *I hope things will work out well for you in your new job.*

work up = (tr) develop *I've been walking a lot so I've worked up a really good appetite.*

Appendix 2

Verbs, Adjectives, Nouns with Prepositions

A

abide by (v)
absent from (adj)
abstain from (v)
accompanied by (adj)
according to (prep)
account for (v)
accuse sb of (v)
accustomed to (adj)
acquainted with (adj)
addicted to (adj)
adequate for (adj)
adjacent to (adj)
advantage of (n) (but: there's an **advantage in** – (have) an **advantage over** sb)
advice on/against (n)
afraid of (adj)
agree about sth (v)
agree to/on sth (v)
agree with sb (v)
ahead of (prep)
aim at (v)
allergic to (adj)
amazed at/by (adj)
amount to (v)
amused at/with (adj)
angry at what sb does (adj)
angry with sb about sth (adj)
angry with sb for doing sth (adj)
annoyed with sb about sth (adj)
(in) answer to (n)
anxious about sth (adj)
at/on/against for sth to happen (adj)
apologise to sb for sth (v)
(make an) appeal to sb for sth (n)

appeal to/against (v)
apply in writing (v)
apply to sb for sth (v)
approve of (v)
argue with sb about sth (v)
arrange for sb to do sth (v)
arrest sb for sth (v)
arrive at (a small place) (v)
arrive in (a town) (v)
ashamed of (adj)
ask about/for (v) (but: **ask sb a question**)
assure (sb) of (v)
astounded at/by (adj)
attached to (adj)
attack on (v)
attack sb for sth (v)
attend to (v)
(un)literate of (adj)

B

bad at (adj) (but: He was very **bad to** me.)
ban sb from sth (v)
base on (v)
basis for (n)
beg for (v)
begin by/with (v)
believe in (v)
belong to (v)
benefit from (v)
bet on (v)
beware of (v)
(put the) blame on sb (n)
blame sb for sth (v)
blame sth on sb (v)
boast about/of (v)
bored with (adj)
borrow sth from sb (v)
brilliant at (adj)

bump into (v)
busy with (adj)

C

call sb (phr v)
campaign against/for (v)
capable of (adj)
care about (v)
care for sb (v) (= like)
(take) care of (n)
care for sth (v) (= like to do sth)
careful about/of/with (adj)
careless about/with (adj)
cause of (n)
certain of (adj)
change into (v)
characteristic of (n/adj)
change for (v)
change sb with (v)
check for (v)
choice between/of (n)
clever at (adj) (but: It was very **clever** of you to buy it.)
close to (adj)
coax sb into (v)
coincide with (v)
collaborate with (v)
collide with (v)
comment on (v)
communicate with (v)
compare with (v) (how people and things are alike and how they are different)
compare to (v) (show the likeness between sb/sth and sb/sth else)
comparison between (n)
compete against/for/with (v)
complain of (v) (= suffer from)
complain to sb about sth (v) (= be annoyed at)
compliment sb on (v)
comply with (v)
conceal sth from sb (v)
concentrate on (v)
(have) confidence in sb (n)
confine to (v)
confused about/by (adj)
confusion over (n)
congratulate sb on sth (v)
connection between (n) (but: in connection with)
conscious of (adj)
connect to/with (v)
consider sb for sth (v)
consist of (v)
contact between (n) (but: in contact with)
content with (adj)
contrary to (adj)
contrast with (v)
contribute to (v)
convert to/into (v)
cope with (v)
correspond to/with (v)
count against (v)
count on sb (phr v)
cover in/with (v)
covered in/with (adj)
crash into (v)
(have) a craving for sth (n)
crazy about (adj)
crowded with (adj)
cruel to (adj)
cruelty towards/to (n)
cure for (n)
curious about (adj)

D

damage to (n)
 date back to (v)
 date from (v)
 deal with (v)
 dear to (adj)
 decide on/against (v)
 decrease in (n)
 dedicate to (v)
 deficient in (adj)
 definition of (n)
 delay in (n)
 (take) delight in doing sth (n)
 delighted with (adj)
 demand for (n)
 demand from (v)
 depart from (v)
 departure from (n)
 depend on/upon (v)
 dependent on (adj)
 deputise for (v)
 descended from (adj)
 describe as (v)
 describe sb/sth to sb else (v)
 description of (n)
 differ from (v)
 (have) difference between/of (n)
 different from (adj)
 difficulty in/with (n)
 disadvantage of (n) (but: there's a **disadvantage** in doing sth)
 disagree with (v)
 disappointed with/about/by (adj)
 disapprove of (v)
 discharge sb from (v)
 discouraged from (adj)
 discussion about/on (n)
 disgusted by/at (adj)
 dismiss from (v)
 dispose of (v)
 disqualified from (adj)
 dissatisfied with (adj)
 distinguish between (v)
 divide between/among (v)
 divide into/by (v)
 do sth about (v)
 doubtful about (adj)
 dream about (v)
 dream of (v) (= imagine)
 dressed in (adj)

E

eager for (adj)
 economical on (v)
 efficient at (adj)
 (put) effort into sth (n)
 emphasis on (n)

enthusiastic about (adj)
 enquire about sth (v)
 envious of (adj)
 equal to (adj)
 escape from/to (v)
 example of (n)
 excellent at (adj)
 exception to (n) (**make an exception of sth/sb** = treat sth/sb as a special case – **take exception to sth** = object to sth)
 exchange sth for sth else (v)
 excited about (adj)
 exclaim at (v)
 excuse for (n)
 excuse sb for (v)
 exempt from (adj)
 expel from (v)
 experienced in/at (adj)
 experiment on/with (v)
 expert at/in (sth/doing sth) (n) (= person good at)
 expert at/in/on (sth/doing sth) (adj) (= done with skill or involving great knowledge)
 expert with sth (n) (= good at using sth)
 expert on (n) (= person knowledgeable about a subject)

F

face up to (phr v)
 fail in an attempt (v)
 fail to do sth (v)
 failure in (an example)
 failure to do sth (n)
 faithful to (adj)
 fall in (n)
 familiar to sb (adj) (= known to sb)
 familiar with (adj) (= have knowledge of)
 famous for (adj)
 fed up with (adj)
 fill sth with sth else (v)
 finish with (v)
 fire at (v)
 flee from (v)
 fond of (adj)
 forget about (v)
 forgive sb for (v)
 fortunate in (adj)
 free from/off (adj)
 friendly with/to (adj)
 frightened of (adj)
 full of (adj)
 furious with sb about/at sth (adj)

G

generosity to/towards (n)
 genius at (n)
 glance at (v)
 glare at (v)
 good at (adj) (but: He was very good to me.)
 grateful to sb for sth (adj)
 grudge against (n)
 guess at (v)
 guilty of (adj) (but: he felt guilty about his crime)

H

happen to (v)
 happy about/with/for (adj)
 harmful to (adj)
 hear about (v) (= be told)
 hear from (v) (= receive a letter)
 hear of (v) (= learn that sth or sb exists)
 heir to (n)
 hinder from (v)
 hint to sb about sth (v) (but: **hint at sth**)
 hope for (v)
 hope to do sth (v)
 lose hope of (n)
 hopeless at (adj)

I

idea of (n)
 identical to (adj)
 ignorant of/about (adj)
 ill with (adj)
 impact on (n)
 impressed by/with (adj)
 (make an) impression on sb (n)
 improvement in/on (n)
 incapable of (adj)
 include in (v)
 increase in (n)
 independent of/from (adj)
 indifferent to (adj)
 indulge in (v)
 inferior to (adj)
 information about/on (n)
 (be) informed about (adj)
 inject sth into sb/sth (v)
 inoculate against (v)
 insist on (v)
 instead of (prep)
 insure against (v)
 intelligent at (adj)
 intent on (adj)
 (have no) intention of (n)
 interest in (n)
 interested in (adj)

interfere with/in (v)
 invasion of (n)
 invest in (v)
 invitation to (n)
 invite sb to (v)
 involve in (v)
 irritated by/at (adj)

J

jealous of (adj)
 join in (v)
 joke about (v)

K

knock at/on (v)
 know about/of (v)
 keep on sth (adj)
 keen to do sth (adj)
 kind to (adj)
 key to (n)
 knowledge of (n)

L

lack in (v)
 lack of (n)
 laugh about (v)
 laugh at (v)
 lead to (v)
 lean on/against (v)
 learn about/by (v)
 leave for (v) (= head for)
 lend sth to sb (v)
 listen to (v)
 live on (v)
 long for (v)
 look at (v)
 look for (v) (= search for)
 look forward to (v)

M

married to (adj)
 marvel at (v)
 mean to (adj)
 mention to (v)
 mistake sb for (v)
 mix with (v)

N

name after (v)
 necessary for (adj)
 need for (n)
 neglect of (n)
 nervous about (adj)
 new to (adj)
 nice to (adj)
 nominate sb (for/as sth) (v)
 (take) (no) notice of (n)
 notorious for doing sth (adj)

Appendix 2

O

obedient to (adj)
object to (v)
objection to (n)
obliged to sb for sth (adj)
obvious to (adj)
occur to (v)
offence against (n)
operate on (v)
opinion of/on (n)
opposite of/to (n)

P

part with (v)
patient with (adj)
pay by (cheque) (x)
pay for (v) (but: **pay a bill**)
pay in (cash) (v)
peculiar to (adj)
persist in (v) (but: **insist on**)
(take a) photograph of (n)
picture of (n)
pity for (n)
take pity on sb (exp)
pleasant to (adj)
pleased about sth (adj)
pleased with (adj)
(take) pleasure in (n)
(have the) pleasure of (n)
point at/to (v)
(im)polite to (adj)
popular with (adj)
praise sb for (v)
pray for sth/sb (v)
prefer sth to sth else (v)
(have a) preference for (n)
prepare for (v)
present sb with (v)
prevent sb/sth from (v)
(take) pride in (n)
pride oneself on sth/on doing sth (v)
profit from (v)
prohibit sb from doing sth (v)
prone to (adj)
protect against/from (v)
protection from (n)
protest about/at (n)
proud of (adj)
provide sb with (v)
punish sb for (v)
puzzled about/by (adj)

Q

quarrel about sth/with sb (vb)
quarrel with (v)
qualified for (adj)
quick at (adj)
quotation from (n)

R

rave about (v)
react to (v)
reaction to (n)
ready for (adj)
reason for (n)
reason with (v)
rebel against (v)
receive from (v)
(keep) a record of (n)
recover from (v)
reduction in (n)
refer to (v)
(in)with reference to (n)
refrain from (v)
regard as (v)
regardless of (prep)
related to (adj)
relationship between (n)
relevant to (adj)
rely on (v)
remind sb of/about (v)
remove from (v)
replace sth with sth else (v)
reply to (n/v)
report on (n/v)
reputation for/of (n)
research on/into (n)
respect for (n)
respected for (adj)
respond to (v)
responsibility for (n)
responsible for (adj)
result from (v) (also: the consequence of)
result in (v) (= cause)
result of (n)
resulting from (adj)
rhyme with (v)
rich in (adj)
(with) of (phr)
ride in (n)
(make) room for (n)
rude to (adj)

S

safe from (adj)
same as (adj)
satisfied with/by (adj)
save sb from (v)
save sth for sb (v)
scared of (adj)
scared to (v)
search for (v/n)
(be) in search of (n)
sensible of sth (adj) (= aware of sth)
sensitive to (adj)
sentence sb to (v)

separate from (v)
serious about (adj)
settle for/on (v)
share in/of sth (n)
shelter from (v)
shocked at/by (adj)
shoot at (v)
short of/on (adj)
shout at (v)
shy of (adj)
sick of (adj)
silly to do sth (adj) (but: it was **silly of him**)
similar to (adj)
skilled at (adj)
skilled at/in (adj)
slow in/about doing sth/to sth (adj)
smell of (n/v)
smile at (v)
solution to (n)
sorry about (adj) (= feel sorry for sb) (but: I'm **sorry for** doing sth)
speak to/with sb about (v)
specialise in (v)
specialist in (n)
spend money on sth (v)
spend time in/doing sth (v)
split into/in (v)
spy on (v)
stare at (v)
strain on (n)
study for (v)
subject to (adj/v)
submit to (v) (but: **submit sth for publication**)
subscribe to (v)
succeed in (v)
suffer from (v)
sufficient for sth/sb (adj)
suitable for (adj)
superior to (adj)
sure of/about (adj)
surprised at/by (adj)
surrender to (v)
surrounded by (adj)
suspect sb of (v)
suspicious of (adj)
sympathetic to/towards (adj)
sympathise with (v)

T

take sth to sb/sth (v)
talent for sth (n)
talk to sb about sth (v)
(have) taste in (n)
taste of (v)
terrible at (adj)

terrified of (adj)
thank sb for (v)
thankful for (adj)
think about (v)
threat to sb/sth/of sth (n)
threaten sb with sth (v)
throw at (v) (in order to hit)
throw to (v) (in order to catch)
tire of (v)
tired of (adj) (= fed up with)
transfer from ... into (v)
tread on (v)
trip over (v)
trouble with (n)
typical of (adj)

U

unaware of (adj)
understanding of (n)
uneasy about (adj)
upset about/over sth (adj)
(make) use of (n)
used to (adj)
useful for/to (adj)

V

valid for (length of time) (adj)
valid in (places) (adj)
value sth at (v)
vote against/for (v)
vouch for (v)

W

wait for (v)
warn sb against/about/of (v)
waste (time/money) on (v)
waste in/at (adj)
wink at (v)
wonder about (v)
work as/in/at sth (v)
worry about (v)
worthy of (adj)
write about (v)
write to sb (v)
wrong about (adj)

Prepositional Phrases

above

above the line

against

against the law

aheadahead of schedule
ahead of one's time**at**at an advantage
at the age of
at the airport
at auction
at the beginning of
(when sth started)
(but: in the
beginning =
originally)at one's best
at breakfast/lunch etc
at the bottom of
at the bus stop
at collegeat the connection the
cornerat all costs
at the crossroads
at dawn
at a disadvantageat one's desk
at the door

at ease

at the end (= when
sth is finished)
(but: in the end =
finally)at your expense
at faultat first
at first handat first sight
at a glanceat hand
at heartat home
at/in a hotel

at ... miles per hour

at large
at lastat the latest
at leastat the very least
at lengthat liberty
at a loss

at the match

at midnight
at the moment

at most

at night

at noon

at once

at peace

at a place

at present

at a profit

at the prospect

at random

at any rate

at one's request

at the same time

at school

at sea

at short notice

at (high/full) speed

at/in the station

at sunset

at the table

at the time

at times

at the top of (but: on
top of)at the weekend
(British English)

at work

at 230 Mills St.

before

before long

behind

behind schedule

behind the times

below

below the line

by

by oneself

by/from all accounts

by appointment

by the arm/hand

by auction

by birth

by bus/train/plane/
ship/helicopter/
taxi/boat/sea/air/
car etc (but: on
a/the bus/plane/
train/ship/boat -
in a taxi/car/plane/
helicopter)

by chance

by cheque

by correspondence

by daylight

by degrees

by the dozen

by eye

by far

by force

by hand

by heart

by invitation

by land/sea/air

by law

by luck

by means of

by mistake

by nature

by now

by oneself

by order of

by post

by phone

by mistake

by profession

by request

by (the) one's side

by sight

by skill

by surprise

by the time

by the way

by oneself

for

for ages

for breakfast/lunch/
dinner

for certain

for a change

for ever

for fear (of)

for fun (= for
amusement)

for good

for granted

for hire

for a holiday

for keeps

for instance

for luck

for life

for love

for nothing

for once

for the rest of

for safe keeping

for one's sake

for the sake of

for sale (= to be sold)

for short

for the time being

for a walk

for a while

from

from time to time

from now on

from experience

from memory

from scratch

in

in accordance with

in action

in addition to (= -ing
form)

in advance (of)

in agreement (with/
-on/about)

in aid of

in all (= all in all)

in an attempt

in answer to

in an armchair

in bed

in the beginning (=

originally)

in blossom

in a book

in brief

in business

in any case

in cash

in the centre of

in charge (of)

in cities

in code

in colour

in comfort

in common

in comparison with

in conclusion (to)

in (good/bad)
condition

in confidence

in control (of)

in the corner

in the country

in danger (of)

in the dark

in debt

in demand

in detail

(be) in difficulty

in the direction of

in doubt

in dollars

in a ... dress

in due course

in the end (= finally)

in exchange for

in evidence

in fact

in fashion

in favour of

in flames

in the flesh

in focus

in one's free time

in full swing

in fun

in the future

in gear

in general

in good time

in half

in hand

in haste

in good/bad health

in hiding

in honour of

in hopes of

in the hospital

in a hotel

in a hurry

in ink/pencil/pen

in sb's interest

in length/width etc

in all sb's life

in the limelight

in a line

in the long run

in luxury

in the meantime

in a mess

in the middle of

in a mirror

in moderation

in a moment

in a good/bad mood

in the mood

in the morning

in name only (= not in
reality)

in need of

in the news

in a newspaper

in the name of (= on
behalf of)

in the nick of time

in the north/south

in a nutshell

in the open

Appendix 3

in one's opinion
in orbit
in order of/to
in other words
in pain
in pairs
in the park
in particular
in the past
in person
in pieces
in place of
in politics
in practice/theory
in principle
in private/public
in all probability
in progress
in question
in reality
in respect to/of
in return
in the right/wrong
in a row/lows
in ruins
in safety
in season
in secret
in self-defense
in the shape of
in short
in sight (of)
in the sky
in silence
in some respects
in stock
in style
in the streets
in succession
in the suburbs
in the sun/shade
in good/bad taste
in tears
in a temper
in theory
in time
in no time
in touch
in town
in tune (with)
in turn
in two/half
in uniform
in use

in vain
in view of
in a loud/low voice
in a way (= in a manner)
in the way
in writing
in a word
in the world

into

into pieces

on

on account of
on a ... afternoon/
evening
on the agenda
on the air
on approval
on arrival
on average
on bail
on balance
on the beach
on behalf of
on one's birthday
on board
on the border
on the bottom
on business
on call
on a campsite (at a campsite)
on the ceiling
on the coast
on condition
on the contrary
on credit
on a cruise/excursion/
trip
on (a) duty
on demand
on a diet
on duty
on earth
on edge
on an expedition
on a farm (but: in a field)
on fire
on the (4th) floor (of)
on the floor
on foot

on the ground
on holiday
on the one hand
on the other hand
on the weekend
(American English)
on vacation
on horseback
on impulse
on the Internet
on an island (but: in the mountains)
on a journey
on one's knees
on leave
on the left
on loan
on the market (= available to the public)
on one's mind
on one's mobile
on that morning
on the move
on New Year's Day
on the news
on that occasion
on order
on the outskirts
on one's own
on one's ...
on parade
on the pavement
on the phone
on a platform
on principle
on purpose
on the radio/TV
on the right
on the Missouri River
on sale (= sold at reduced price) (but: for sale = to be sold)
on schedule
on the screen
on second thought(s)
on the side
on sight
on the sofa
on this street/on the street(s)
on strike
on good/bad terms

on time
on top of
on the trail of
on a trip
on the way (to) (= as I was going)
on the whole

out of

out of breath
out of character
out of condition
out of control
out of danger
out of date
out of debt
out of difficulties
out of fashion
out of focus
out of hand
out of luck
out of order
out of the ordinary
out of place
out of practice
out of print
out of the question
out of reach
out of season
out of sight
out of step
out of stock
out of tune
out of turn
out of use
out of work

off

off the air
off colour
off duty
off limits
off the map
off the peg
off the point
off the record
off the road
off school/work

to

to one's astonishment
to one's surprise
to this day
to some extent

under

under age
under arrest
under one's breath
under control
under the control of
under discussion
under the impression
under orders
under pressure
under repair
under the weather

with

with regard to
with respect to
with a view to (+ -ing form)

within

within minutes

without

without delay
without fail
without success
without warning

Prefixes

Prefixes are syllables which we add before certain words to form new words. The meaning of the new word depends on the prefix that has been used.

anti-	= against (anti social)
bi-	= two (bi nocular)
co-	= with (co -driver)
counter-	= in the opposite direction (counter act)
inter-	= between (inter national)
mis-	= done wrongly or badly (mis judge)
mono-	= one (mono logue)
multi-	= many (multi cultural)
non-	= not (non -employees)
out-	= more, better (out grow)
over-	= (done) to a great extent (over confident)
post-	= after (post graduate)
pre-	= before (pre historic)
pro-	= in favour of (pro active)
re-	= again (re consider)
semi-	= half (semi -final)
sub-	= under, less (sub zero)
super-	= big, more (super star)
trans-	= (travel) from one side, group etc to another (trans atlantic)
tri-	= three (tri athlon)
under-	= not enough (under cooked)
uni-	= one (uni cycle)

The prefixes below are used to express opposite meanings.

de-	deactivate, de hydration
dis-	disability, dis agree
in-	inactive, in existent BUT in- (before l) illegible
im-	(before b, m, p) imbalance, im moral, im probable
ir-	(before r) irregular BUT ir realistic, ir responsible
non-	non-employees, non -stop
un-	unemployed, un lucky

Some prefixes are added to words to form verbs.

en-	circle – en circle
	BUT em- (before b, m, p)
	body – em body, power – em power

Suffixes

Suffixes are syllables which we add to the end of certain words to form new words.

Nouns referring to people

- **verb + -er/-or/-ar** (manage – manager, invent – inventor, **buggle** – **buggler**)
- **noun/verb + -ive + -ist** (science – scientist, **pacify** – **pacifier**, **active** – **activist**)
- **verb + -ant/-ent** (assist – assistant, correspond – correspondent)
- **noun + -an/-ion** (republic – republican, diet – dietician)
- **verb + -ee** (train – trainee)

Nouns formed from verbs

-age	pack – package
-al	arrive – arrival
-ance	accept – acceptance
-ation	alter – alteration
-ence	reside – residence
-ion	edit – edition
-ment	base – basement
-sion	conclude – conclusion
-sis	analyse – analysis
-sion	recognise – recognition
-ure	depart – departure
-y	unite – unity

Nouns formed from adjectives

-ance	arrogant – arrogance
-cy	fluent – fluency
-ence	convenient – convenience
-ion	affect – affection
-iness	happy – happiness
-ness	conscious – consciousness
-ity	major – majority
-ty	cruel – cruelty
-y	honest – honesty

Adjectives formed from nouns

-ous	danger – dangerous
-al	environment – environmental
-ic	enthusiast – enthusiastic
-ical	autobiography – autobiographical
-ish	child – childish
-ive	effect – effective
-ful	care – careful
-less	breath – breathless
-ant	dominance – dominant
-able	comfort – comfortable
-y	rock – rocky
-ly	week – weekly

Adjectives formed from verbs

-able	believe – believable
-ible	access – accessible
-ive	exhaust – exhaustive
-ate	consider – considerate
-ent	depend – dependent
-ing	frighten – frightening (describes what someone or something is)
-ed	interest – interested (describes how someone feels)

Verbs formed from adjectives

-en	short – shorten
-ise	modern – modernise

Verbs formed from nouns

-en	length – lengthen
------------	-------------------

Word List

Abbreviations	(adj)	adjective	(n)	noun	(pl n)	plural noun	(prep phr)	prepositional phrase	(sth)	something
	(adv)	adverb	(phr)	phrase	(pp)	past participle	(sb)	somebody	(v)	verb
	(idm)	idiom	(phr v)	phrasal verb						

English	Kazakh	Russian
Module 1 – Making Connections in Biology		
clone /kloʊn/ (n) crystallography /kristallografi/ (n) domain /doʊmən/ (n) evolution /iːvəluʃən/ (n) fertilisation /fɜːtɪlaɪzən/ (n) Genome /dʒɛnəʊm/ (n) helix /hɛlɪks/ (n) inheritance /ɪnherɪtəns/ (n) pasteurisation /pɑːstʃəraɪzən/ (n) structure /strʌktʃə/ (n) taxonomy /tæksonəmi/ (n) transfusion /trænzfjuːʒən/ (n)	клоныдау кристаллография домен, нелік, атау эволюция, даму ұрыстану, тозаңдау, томырақты тыңайту геном шпираль мұрагерлік / тұқымқуалаушылық пастерлеу құрылым, құрылыс таксономия, жүйелеу қан құю	клон, клонировать кристаллография домен, владение, имение эволюция, развитие оплодотворение, омыление, удобрение почвы геном спираль наследственность пастеризация структура, конструкция, устройство таксономия, систематика переливание крови
Ta axial /æksɪəl/ (adj) constricted /kɒnstriktɪd/ (adj) gamete /ɡæmət/ (n) genotype /dʒenəʊtaɪp/ (n) heredity /hɪrədɪti/ (n) heterozygous /hɪtəroʊzɪɡəs/ (adj) homozygous /hɒməzɪɡəs/ (adj) phenotype /fɪnəʊtaɪp/ (n) pod /pɒd/ (n) primary model system (phr) seed /siːd/ (n) segregation /seɡrɪɡeɪʃən/ (n) selective breeding (phr) stem /stem/ (n) terminal /tɜːmɪnəl/ (adj) variance /vərɪəns/ (n) variation /vəəriəʃən/ (n)	осьтік тарылған, сымылған гамета, жымыс жасушасы генотип тұқымқуалаушылық гетерозиготалы гомозиготалы фенотип капсула, қыбық жүйенің негізгі моделі ұрық, дәні сегрегация, болініс іріктелуші көбею сабақ қорытынды мақсатсушылық, сайкессіздік айырмашылық, алуынтуралық	осевой суженный, сжатый гамета, половая клетка генотип наследственность гетерозиготный гомозиготный фенотип капсула основная модель системы семя, зерно сегрегация, разделение селективное размножение стебель конечный, заключительный расхождение, несоответствие различие, разновидность
1b attribute /ətrɪbjʊt/ (n) binomial /bɪnəʊmɪəl/ (adj) classify /klastɪfaɪ/ (v) equate (to) /ɪkwet/ (v) genus /dʒɛnəs/ (n) harbour /hɑːbər/ (v) invalid /ɪvəlɪd/ (adj) invertebrate /ɪnvɜːtəbrət/ (n) optical lens (phr) taxonomist /tæksonəməst/ (n) vertebrate /vɜːtəbrət/ (n)	белгі, ерекшелік биномдық, екі аты бар жіктеу теңестіру жымыс, түр жасыру, баспана беру жарамсыз омыртқасыздар оптикалық линза таксономист омыртқалытар	атрибут, признак биноминальный, имеющий два названия классифицировать приравнивать род укрыть, дать убежище укрыть, дать убежище беспозвоночные оптическая линза таксономист позвоночные
1c antibody /æntɪbɒdi/ (n) antigen /æntɪdʒɪn/ (n) blood transfusion /blʊd trænzfjuːʒən/ (n) clot /klɒt/ (v) clump /klʌmp/ (v) immunology /ɪmjʊnɒlədʒi/ (n) paternity test (phr)	антидене антиген қан құю қоюлану топтап отырғызу иммунология әкелікті анықтайтын тест	антитело антиген переливание крови сгущаться сажать группами иммунология тест на отцовство

English	Kazakh	Russian
Pathological Anatomy (phr)	патологиялық анатомия	патологическая анатомия
plasma /ˈplæzmə/ (n)	плазма	плазма
platelet /ˈpleɪtli/ (n)	тромбоцит	тромбоцит
1e		
archaea /ˈɑːkiə/ (n, pl)	архей	архей
bacteria /bækˈtɪəriə/ (n, sing.: bacterium)	бактерия	бактерия
biophysicist /ˌbaɪəʊfɪzɪkəsɪst/ (n)	биофизик	биофизик
DNA /diː en ˈtiː/ (n)	ДНҚ	ДНК
fungi /ˈfʌŋɡi/ (n, sing.: fungus)	саңырауқұлақтар, зең	грибок, плесень
genetic makeup (phr)	генетикалық құрамы	генетический состав
nucleus /ˈnjuːkliəs/ (n)	ядро	ядро
RNA /ɛz en ˈtiː/ (n)	рибонуклеин қышқылы (РНҚ)	рибонуклеиновая кислота (РНҚ)
ribosome /ˈrɪbəʊsəʊm/ (n)	рибосома	рибосома
1f		
defect /dɪˈfɛkt/ (n)	ақау, кемшілік	дефект, недостаток
plant tissue culture (phr)	өсімдік тіндері	растительная ткань
tissue /ˈtɪʃuː/ (n)	мата, қабат, қыртыс	ткань, слой
Language in Use 1		
catch on /kætʃ ɒn/ (phr v)	түсіну, ұғыну	уловить смысл, понять
get on /ɡet ɒn/ (phr v)	тіл табысу	ладить
hold on /həʊld ɒn/ (phr v)	ұстау	держаться
look on /lʊk ɒn/ (phr v)	бақылау, қарау	наблюдать
pass sth on /pɑːs stʌ ɒn/ (phr v)	беріп жіберу	передать
put on /pʊt ɒn/ (phr v)	кию	надевать
Module 2 - The Animal World		
area /ˈeəriə/ (n)	облыс, алаң	область, площадь
cover /ˈkʌvə/ (v)	жабу	покрытие, покрывать
drop /drɒp/ (n)	төмендеу, құлау	падение, понижение
insect /ˈɪnsɛkt/ (n)	жәндік	насекомое
lack /læk/ (n)	жоқ болу	отсутствие
provide /prəˈvaɪd/ (v)	қамтамасыз ету	обеспечивать
shelter /ˈʃɛltə/ (n)	баспана	приток
2a		
bird of prey (phr)	жыртқыш құс	хищная птица
breed /brɪd/ (v)	көбейту	размножаться
breeding season (phr)	көбейту маусымы	сезон размножения
carnivore /ˈkɑːnɪvə/ (n)	еткоректі жануар	плотоядное животное
incubation season (phr)	інкубациялық маусым	инкубационный период
nest /nest/ (v)	ұя салу	гнездиться
plumage /ˈplʌmɪdʒ/ (n)	қауырсын	оперение
prey /preɪ/ (n)	олқа	добыча
prey on /preɪ ɒn/ (phr v)	аң аулау	охотиться на ...
retina /rɪˈtɪnə/ (n)	көз торы, көздің ішкі тор қабығы	сетчатка
rodent /rəʊdnt/ (n)	кеміргіш	грызун
subspecies /ˌsʊbˈspɪʃiəs/ (n)	шыңдан тек	родословная
talon /ˈtælən/ (n)	тырнақ	коготь
2b		
bounce off /baʊns ɒf/ (v)	ыршып түсу	отскокивать
determine /dɪˈtɜːmɪn/ (v)	анықтау	определять
gravity /ˈɡrævəti/ (n)	бүкіләлемдік тартылыс	гравитация
high-pitched /haɪ ˈpɪtʃt/ (adj)	жоғары	высокой
pest control (phr)	зиянкестермен күрес	борьба с вредителями
pollinate /pəˈlɪneɪt/ (v)	тозаңдандыру	опылить
tendon /ˈtendən/ (n)	сіңір	сухожилие

Word List

English	Kazakh	Russian
2c affection /əfɪkʃən/ (n) blowhole /bləʊhəʊl/ (n) classified /ˌklæsɪfaɪd/ (pp) (be classified as) dorsal fin (phr) feed /fi:d/ (v) flake /flaɪk/ (n) gill /gɪl/ (n) in captivity (prep phr) melon /ˈmeɪləʊ/ (n) motion /ˈmoʊʃən/ (n) pectoral fins (phr) peduncle /ˈpedʒŋkəl/ (n) play-fight /ˈpleɪ faɪt/ (v) propel /prəˈpel/ (v) protection /prəˈtekʃən/ (n) rewarding /rɪˈwɔ:dn̩/ (adj) rostrum /ˈrɒstrəm/ (n) steer /stɪə/ (v) technique /tekˈni:k/ (n)	үйреніп қалу демгесіс ... жігітеу арқа жұбеқанаты тамақландыру палтус желбезек тұтқында аузын қозғалыс кеуде жұбеқанаты жеміс сабағы ойнап тобелесу ынталандыру, жедедету қорғау, күзету пайдалы, марапаттау мінбе басқару әдіс, тәсіл	привязанность дыққало классифицироваться так... спинной плавник кормить палтус жабыр в плену дына движение грудной плавник плодородка драться (в шутку) стимулировать, ускорить защита, охрана полезный, награждение арбуна управлять метод, способ
2e biodiversity /ˌbaɪəʊdɪˈvɜ:sn̩/ (n) endemic /ɪnˈdemɪk/ (adj) fragile /ˈfrædʒəl/ (adj) jagged /ˈdʒædʒd/ (adj) temperate /ˈtemprət/ (adj) wilderness /ˈwɪldrənəs/ (n)	биоауантуралік осы жерге тан назік, мангілік емес тегіс емес, тісті орташа климат жабайы табиғат	биоразнообразие свойственный данной местности хрупкий, недолговечный переный, зубчатый умеренный климат дикая природа
2f fertilise /ˈfɜ:tləɪz/ (v) hive /haɪv/ (n) larva /ˈlɑ:və/ (n) lifespan /ˈlaɪfspɑ:n/ (n) pollen /ˈpɒlən/ (n) pupa /ˈpju:pə/ (n) royal jelly (phr)	тыңайту желім дерінісі өмір сүру ұзақтығы тозаң құрт-құмырсқа дерінісі аналық ара сүті	удобрить клей личинка продолжительность жизни пыльца куколка пчелиное маточное молочко
Language in Use 2 act up /ækt ʌp/ (phr v) add up /əd ʌp/ (phr v) come up /kʌm ʌp/ (phr v) make up /meɪk ʌp/ (phr v) spring up /sprɪŋ ʌp/ (phr v) steam up /sti:m ʌp/ (phr v)	қыңырлық қорсету, жаңжал шығару қосу, қабаттау келу, көтерілу жасау пайда болу ашуландыру, мезаландыру	капризничать, скандалить суммировать, складывать подойти, подниматься составлять появляться разлить
Module 3 – The Human Brain		
amygdala /ˈæmɪɡdələ/ (n) brainstem /ˈbreɪnstem/ (n) cerebellum /ˌserəˈbeɪləm/ (n) cerebrum /ˈserəbrəm/ (n) hippocampus /ˌhɪpəˈkæmpəs/ (n) hypothalamus /ˌhaɪpəˈθæləməs/ (n) pituitary gland (phr)	қомекей без ми бағана мишық бас миы гиппокамп гипоталамус гипофиз	миндалина мозговой ствол мозжечок головной мозг гиппокамп гипоталамус гипофиз
3a brain disorder (phr) brain technology (phr) computer interface (phr) enhance /ɪnˈhɑ:ns/ (v) fire /faɪə/ (v)	мидың бұзылтым ми технологиясы компьютер интерфейсі еселеу; күшейту оқ жаудыру	нарушение головного мозга технология мозга компьютерный интерфейс усилить, повышать вести огонь

English	Kazakh	Russian
generate /dʒenəreɪt/ (v) harness /hɑːsnɪs/ (v) implant /ɪmˈplɑːnt/ (n) infrared switch (phr) nerve impulse (phr) neural dust (phr) prosthetic limb (phr) speech recognition (phr) stem cell (phr) stimulate /stɪˈmjuːlət/ (v)	тураландыру жегу, қосу қондырдым инфрақызыл сәндірісші жүйкелік импульс нейрондық шаң аяқ-қол протезі сөз тану бағаналық жасуша мығалаандыру	генерировать запрягать имплант инфракрасный выключатель нервный импульс нейронная пыль протез конечности распознавание речи стволовая клетка стимулировать
3b active gene (phr) cell body (phr) cognitive ability (phr) dendrite /dendraɪt/ (n) densely-packed /densli ˈpækt/ (adj) dysfunction /dɪsˈfʌŋkʃən/ (n) electrical signal (phr) inhibitory neurone (phr) nucleus /njuːkleɪs/ (n) regulate /ˈregjuleɪt/ (v)	белсенді ген жасуша денесі танымдық қабілет дендрит (жүйке жасушасының бөлігі) тығыз оралған әрекетсіздік; дисфункция электрік сигнал тежеуші жүйке жасушалары ядро жонге салу, реттеп отыру, реттеу	активный ген тело клетки познавательная способность дендрит плотно упакованный дисфункция электрический сигнал тормозной нейрон ядро регулировать
3c absorb information (phr) acid /æsɪd/ (n pl) antioxidant /æntɪˈɒksɪdənt/ (n) attention /əˈtenʃən/ (n) beneficial /benɪˈfiʃəl/ (adj) blood flow (phr) boost concentration (phr) decline /dɪˈklaɪn/ (n) enhanced /ɪnˈhɑːns/ (adj) function /fʌŋkʃən/ (n) fundamental /fʌndəˈmentl/ (adj) identify /aɪˈdentɪfaɪ/ (v) loss /lɒs/ (n) memory capability (phr) physical capability (phr) radical /ˈrædɪkəl/ (n) skill set (phr) visualisation /vɪʒʊəlaɪzən/ (n)	ақыратты меңгеру қышқыл антиоксидант назар аудару тиімді қан ағым; қан ағысы концентрацияны күшейту төмендеуі жоғары қызмет іргелі анықтау жоғалту есте сақтау қабілеті физикалық мүмкіндік радикал дағды жиынтығы визуалдау; кобен шолу	осваивать информацию кислота антиоксидант внимание выгодный кровоток повысить концентрацию снижение повышенный функция фундаментальный идентифицировать потеря способность памяти физические возможности радикал набор навыков визуализация
3e memory palace (phr) popular culture (phr) principle /ˈprɪnsəpl/ (n)	естелік сарайы танымал мәдениет ереже, принцип	дворец воспоминаний популярная культура правила, принцип
3f consolidate /kənˈsɒlɪdeɪt/ (v) encode /ɪnˈkəʊd/ (v) memory retention (phr) neocortex /niːəˈkɔːks/ (n) pre-frontal cortex (phr) synapse /ˈsɪnəps/ (n)	шығайту шифрлау; код бойынша шифрлау жадыны сақтау неокортекс маңдай бөлігі түйіспе	консолидировать шифровать; зашифровать по коду сохранение памяти неокортекс префронтальная кора синапс

Word List

English	Kazakh	Russian
Language in Use 3 fall out /fɔ:l 'aʊt/ (phr v) fill out /fɪl 'aʊt/ (phr v) find out /faɪnd 'aʊt/ (phr v) pass out /pɑ:s 'aʊt/ (phr v) point out /pɔɪnt 'aʊt/ (phr v) work out /wɜ:k 'aʊt/ (phr v)	ұрмысу, араздасу толығу табу, анықтау тарату жол сілтеу оңдау, жетілдіру	соррится заполнить, пополнить высчитать, узнать раздавать указывать разработать
Module 4 – Timekeeping Devices		
burn /bɜ:n/ (v) cast /kɑ:st/ (v) divide /dɪ'vaɪd/ (v) existence /ɪg'zɪstəns/ (n) fill /fɪl/ (v) flow /fləʊ/ (n) lit /lɪt/ (pp v.: light) obelisk /'əʊbəlɪsk/ (n) oil-lamp (phr) passing /'pɑ:sɪŋ/ (n) practice /'præktɪs/ (n) shadow /'ʃædəʊ/ (n) stick /stɪk/ (n) sundial /'sʌndiəl/ (n) water clock /'wɔ:tə klɒk/ (n)	жаңдыру, өртеу лақтыру болу бар болу толығу ағын жағу (жарықты) ескерткіш майшам рұқсатнама тәжірибе көлдене таық күн сағаты су сағаты	жечь бросать разделять существование наполнять, заполняться поток зажигать (свет) обелиск масляная лампа пропуск практика тень палка солнечные часы водные часы
4a accomplish /ə'kɒmplɪʃ/ (v) alignment /ə'lɪnmənt/ (n) carve /kɑ:v/ (v) civilisation /sɪvɪlaɪzəʃən/ (n) depict /dɪ'pɪkt/ (v) equal /ɪ'ki:əl/ (adj) excavate /ɪk'skævət/ (v) imaginary /ɪ'mædʒɪnəri/ (adj) keep track of (phr) meridian /mɪ'reɪdiən/ (n) overcome /'ɒvərkəʊm/ (v) plumb line (phr) precisely /preɪ'sɪsli/ (adv) preserve /preɪ'veɪz/ (v)	орындау, жету тегістеу қиын алу өркениет бейнелеу тең жер, жұмыстарын жүргізу, қазу қиялдану бақығалау меридиан жеңу, еңсеру үлкісеуіш дәл сақтау	выполнять, достигать выравнивание вырезать цивилизация изображать равный производить земляные работы, копать воображаемый отслеживать меридиан преодолевать отвес точно сохранять
4b bicentennial /baɪ'sentɪniəl/ (n) biennial /baɪ'ɛniəl/ (adj) body /bɒdi/ (n) counterpart /kaʊntə'pɑ:t/ (n) decennial /di'sentʃiəl/ (adj) (be) derived from (phr) eon /i:ən/ (n) epoch /'epɒk/ (n) era /ɪərə/ (n) evolve /ɪ'vɒlv/ (v) fortnight /'fɔ:tnaɪt/ (n) leap second (phr) leap year (phr) June month (phr) millennia /'mɪləniə/ (n sing.: millennium) movement /'mu:vmənt/ (n)	екі жүзжылдық екіжылдық дене көшірме онжылдық (бір ырысден) алынған мәңгілік дәуір заман даму екі апта екінші әрекет кібісе жыл толған ай мыңжылдық қозғалыс	двухсотлетие двухлетний тело копия десятилетний (быть) полученным из вечность эпоха эра развиваться две недели вторая попытка високосный год лунный месяц тысячелетие движение

English	Kazakh	Russian
origin /'ɒrɪdʒɪn/ (n)	шығу тегі	происхождение
phase /feɪz/ (n)	фаза, саты, кезең	фаза
respectively /rɪspek'tɪvli/ (adv)	сәйкес	соответственно
ritual /rɪ'tʃuəl/ (n)	рәсім	ритуал
Waning Half (phr)	айдың төмендеуі, аяқталуы	убывающая (луна)
Waxing Half (phr)	айдың толуы	растущая (луна)
4c		
check /tʃek/ (v)	тексеру	проверить
complement /kəm'plɪmənt/ (v)	толықтыру	дополнить
convey /kən'veɪ/ (v)	тапсыру	передавать
create /kri'eɪt/ (v)	құру	создавать
decipher /dɪ'saɪfə/ (v)	шену	расшифровывать
display /dɪ'spleɪ/ (v)	көрсету	показывать, демонстрировать
distract /dɪ'strækt/ (v)	алаңдату	отвлечь
embellishment /ɪm'bɛljə'mənt/ (n)	әшекейлеу	приукрашивание
emerge (from) /ɪ'mɜ:dʒ/ (v)	бірнәрседен пайда болу	появляться (из)
facilitate /fə'sɪlɪteɪt/ (v)	жеңілдету, жардамдесту	облегчать, способствовать, содействовать
generate /dʒenə'reɪt/ (v)	өңдеу, құру, қалыптастыру, өңдіру	генерировать, производить, вырабатывать, создавать, формировать
incorporate /ɪnkə'pɔ:reɪt/ (v)	қосу (өзіне), ұстау (өзіне), біріктіру	включать (в себя), содержать (в себе), объединять, соединять
overuse /'əʊvə'ju:z/ (v)	теріс пайдалану	злоупотребление
present /'prezənt/ (v)	ұсыну, тарту, тапсыру, тапсытыру	представлять, презентовать, предъявлять, преподносить, дарить, вручать
reinforce /rɪ'nfɔ:s/ (v)	ыңғайту	укрепить
select /sɪ'lekt/ (v)	таңдау	выбирать
stand /stænd/ (v)	тұру	стоять
stick /stɪk/ (v)	ұстану, ұстандырғысы, орнату	придерживаться, держаться, привлекать, втягивать, вставлять
stimulate /stɪ'mjʊleɪt/ (v)	ынталандыру	стимулировать
type /taɪp/ (v)	басып шығару	печатать
well-executed /wel'ekʊtɪd/ (adj)	жақсы орындалған	хорошо выполненный
4e		
boast /bəʊst/ (v)	мақтану	хвастаться
brilliant /brɪ'lɪənt/ (adj)	ғамаша, керемет	замечательный, великолепный
calculate /kæ'lɪkjʊleɪt/ (v)	сөйтіптеу	вычислять
hemisphere /'hemɪsfeɪ/ (n)	жарты шар	полушарие
navigate /næ'vɪgeɪt/ (v)	басқару	управлять
observatory /əb'sɜ:vətɔ:ri/ (n)	расытхана	обсерватория
pinpoint /'pɪnpɔɪnt/ (v)	назар аудару	заострить внимание, акцентировать
refracting /rɪ'fræktɪŋ/ (adj)	сыну	преломление
tricky /'trɪki/ (adj)	қу	злтрый
4f		
increment /ɪnkrɪ'mənt/ (n)	осім	прирост
longitude /lɒn'dʒɪtʊd/ (n)	ұзақтығым	долгота
spherical /sfeɪ'ɪkəl/ (adj)	сфералық	сферический
Language Use 4		
call off /kɔ:l ɒf/ (phr v)	боддырғыз, тостату	отменить, прекращать
drop off /drɒp ɒf/ (phr v)	ала кету, жеткізу	подбросить, доставить
pay off /peɪ ɒf/ (phr v)	төлеу	расплатиться, рассчитаться
put off /pʊt ɒf/ (phr v)	кейінге шегеру	откладывать
show off /ʃəʊ ɒf/ (phr v)	мақтану	хвастаться
take off /teɪk ɒf/ (phr v)	шену, ұшу	снимать, взлететь

Word List

English	Kazakh	Russian
Module 5 - Work & Inventions		
adaptor /ɪdæptə/ (n) delegate /deleɪɡeɪt/ (n) multitasker /mʌltɪ'tɑːskə/ (n) procrastinator /prə'kræstɪneɪtə/ (n)	жалғастырып тетік таратағыш көптапсырмамалымдық прокрастинатор, істі кейінге қалдыратын адам	переходник распределитель многозадачность прокрастинатор; человек, откладывающий дела на потом трудоголик подпевала
workaholic /wɜːkə'hɒlɪk/ (n) yes-man /jes'mæn/ (n)	еңбекқор соғып сөйлейтін адам	трудоголик подпевала
5a add up /əd'ʌp/ (phr v) aspiring /ə'spaɪərɪŋ/ (adj) assorted /ə'sɔːtəd/ (adj) branch out (into) sth /brænz/ 'aʊt/ (phr v) brick-and-mortar store (phr) carbon-neutral /kɑːbən 'njuːtrəl/ (adj) conversion /kən'veɪʃən/ (n) dissertation /dɪ'sɜːtəʃən/ (n) entrepreneurship /ɪn'treɪnəprəʊzɪp/ (n) fleet /fliːt/ (n) fiveer /'faɪvə/ (n) hydroponics /haɪ'drəpənɪks/ (n) joint venture (phr) jumble /dʒʌmbl/ (n) ludicrous /luː'dɪkjəs/ (adj) naively /naɪvli/ (adv) philanthropist /fɪ'læntroʊpɪst/ (n) scholar /'skɒlə/ (n) sign up /saɪn 'ʌp/ (phr v)	жинақтау атаққұмар, мақтаншақ ассорти тармақталу құрылыс материалдары дүкені көміртегісіз-бейтарап түрлендіру диссертация кәсіпкерлік флот бесік гидропоника біріккен кәсіпорын ретсіздік, тәртіпсіздік құжып аңғарт филантроп ғалым тіркелу	суммировать честолюбивый ассорти расширение магазин стройматериалов углеродно-нейтральный преобразование диссертация предпринимательство флот пятерка гидропоника совместное предприятие беспорядок смешно наивно филантроп учёный зарегистрироваться
5b be apprenticed to (phr) concept /kənsept/ (n) define /dɪ'faɪn/ (v) dissection /dɪ'sekʃən/ (n) embody /ɪm'bɒdi/ (v) invent /ɪn'vent/ (v) mastery /'mæstəri/ (n) proportion /prə'pɔːʃən/ (n) sketch /sketʃ/ (v)	шәкірт болу тұжырымдама анықтау айыру, кесу оқып асыру ойлап табу, ойдан шығару шеберлік пропорция, арақатынас набай	быть учеником концепция определять расчленение воплощать выдумывать, изобретать мастерство пропорция, соотношение эскиз
5c decode /di'kəʊd/ (v) hammer /'hæmə/ (n) nanoparticle /'nænə'pɑːtɪkl/ (n) portable /'pɔːtəbəl/ (adj) potential /pə'tenʃənl/ (n) promising /'prɒmɪʃɪŋ/ (adj) sanitise /'sænɪtaɪz/ (n) scrap material (phr) stunned /stʌnd/ (adj) tissue /'tɪʒuː/ (n) tumour /'tʃʊmə/ (n)	кодсыздандыру балға нанобөлшек портативті әлеует перспективалық санитариялау металл сынқыстары таңқаларлық, қатты таңдалған мата ісік	декодировать молоток наночастица портативный потенциал перспективный санитировать металлолом ошеломлённый, потрясённый ткань опухоль

English	Kazakh	Russian
Se composite /kəm'pəʊzɪt/ (adj) dispend cash (phr) fund /fʌnd/ (v) obscure /əb'skjʊə/ (v)	композициялық қолма-қол ақша беру қор жасыру, қараңғылау	композитный выдача наличных фонд скрывать, затемнять
Sf branding /brændɪŋ/ (n) clichéd /klɪ'ʃeɪd/ (adj) elusive /ɪ'ljuːsɪv/ (n) jargon /dʒɑːrɡən/ (n) perseverance /pɜːsɪ'veɪəns/ (n) tailor /teɪlə/ (n) trawl /trɔːl/ (v)	брендінг клишееленген ұстатпайтын, жалтақ, комескі, енушты жаргон табындылық тігіші трамлен аулау	брендирование клишированный неуловимый, ускользающий, распылчатый жаргон настойчивость портной трава
Language in Use 5 blow over /bləʊ 'əʊvə/ (phr v) carry over /kæri 'əʊvə/ (phr v) get over /ɡet 'əʊvə/ (phr v) go over /ɡəʊ 'əʊvə/ (phr v) sign over /saɪn 'əʊvə/ (phr v) win over /wɪn 'əʊvə/ (phr v)	өту, соқпай өту тасымалдау өтсеру, бастан кешіру өту қол қою қоңдыру, сендіру	проходить, миновать переносить преодолевать, пережить переходить подписать уговаривать, убеждать
Module 6 – STEM		
advisor /əd'vaɪsə/ (n) developer /dɪ'veləpə/ (n) engineer /endʒɪ'nɪə/ (n) network /'netwɜːk/ (n) science /saɪəns/ (n)	кеңесші жасаушы инженер желі, күйе ғылым	советник разработчик инженер сеть , система наука
6a capacity /kə'pæsəti/ (n) decarbonisation /dɪ:kərbənaɪz(ə)ʃən/ (n) decentralisation /dɪ'sentrəlaɪz(ə)ʃən/ (n) demand /dɪ'mənd/ (n) fluctuate /flʌktʃu'eɪt/ (v) generate /dʒenə'reɪt/ (v) grid /ɡrɪd/ (n) intermittent /ɪntə'mɪtənt/ (adj) offshore wind /ɔ:fʃə'waɪnd/ (n) outweigh /aʊtweɪg/ (v) overheating /'əʊvə'hiːtɪŋ/ (n)	мүмкіндік ыстан тазарту орталық деңгейдегі децентрализация сұраныс, талап тербелу жасау, өндіру, шығару қуырғатын тұтқалы таба қуақсыз жағалаудан соққан жел қайта ілу ысығып жіберу, қыздырып жіберу	возможность очищение от копоти децентрализация спрос, требование колебаться производить жарония неустойчивый ветер с берега перевешивать overheating, перегрев
reliable /rɪ'laɪəbəl/ (adj) reservoir /rezə'vɔɪə/ (n) supply /sə'plaɪ/ (n)	сенімді суақойма жеткізілім	надёжный водохранилище поставка
6b capacity /kə'pæsəti/ (n) concrete block (phr) crane /kreɪn/ (n) hydrogen /'haɪdrədʒɪn/ (n) kinetic energy (phr) off the grid (adj) pressurised /pre'sʃəzəd/ (adj) surplus /sə'plʌs/ (n) tower /taʊə/ (n)	мүмкіндік бетон блогы көтергіш қран сутегі кинетикалық энергия ыңғайсыз, қолайсыз герметикалық артық мұнара	возможность бетонный блок подъемный кран водород кинетическая энергия без всяких удобств герметичный излишек башня

Word List

English	Kazakh	Russian
6c infection /ɪnˈfekʃən/ (n) inflammation /ɪnˈflæməʃən/ (n) joint /dʒɔɪnt/ (n) objective /əbˈdʒektɪv/ (adj) subjective /səbˈdʒektɪv/ (adj)	инфекция, жұқта жабылу буын объективті субъективті	инфекция, заражение воспаление сустав объективный субъективный
6c detect /dɪˈtekt/ (v) diagnose /ˈdaɪəɡnoʊz/ (v) field work (phr) gene editing (phr) research facility (phr)	табу диагноз қою далалық жұмыстар гендік инженерия тәжірибелік қондырғы	обнаруживать диагностировать полемие работы генная инженерия экспериментальная установка
6f gravitational /ˌɡrævɪteɪʃənəl/ (adj) magnetic /mæɡˈnetɪk/ (adj) matter /ˈmætər/ (n) mechanical /mekəˈni:kəl/ (adj) molecule /ˈmɒlek.jʊl/ (n) particle /ˈpɑːtɪkəl/ (n) photon /ˈfɒtɒn/ (n) thermal /ˈθɜːrml/ (adj) vacuum /ˈvæk.ju.əm/ (n)	гравитациялық магниттік мәселе механикалық молекула бөлшек фотон жылу беретін, жылу вакуум	гравитационный магнитный вопрос механический молекула частица фотон тепловой вакуум
Language in Use 6 check in /tʃek ɪn/ (phr v) fall in /fɔːl ɪn/ (phr v) fit in /fɪt ɪn/ (phr v) pitch in /pɪtʃ ɪn/ (phr v) settle in /setl ɪn/ (phr v) turn in /tɜːn ɪn/ (phr v)	тіркеу құрату, құлау жәлсіу іске кірісу қоныстану, таралмау қайтару	регистралироват обрушыватся согласынат братсы за дело локализоватся, поселытсы возвращат
Module 7 - Reading for pleasure		
(p. 93) convulsive /kənˈvʌlsɪv/ (adj) delineate /dɪˈleɪneɪt/ (v) glimmer /ˈɡlɪmər/ (n) inanimate /ɪnˈænɪmət/ (adj) lassitude /læsɪˈtjuːd/ (n) lustrous /ˈlʌstrəs/ (adj) shriveled /ˈʃrɪvəld/ (adj) tumult /ˈtʌməlt/ (n)	судамалы суретш қою жәйттыдау жансыз еңсарлық жылтырақ тырқынған абігер	судорожный очертить мерцание неодушевленный апатия блестящий сморщенный суматоха
(p. 96) appal /əˈpæl/ (v) book-keeping (phr) deplorably /dɪˈplɔːrəbəl/ (adv) extravagant /ɪkˈstrævəɡənt/ (adj) fatigue /fəˈtɪɡ/ (v) forcible /ˈfɔːsəbəl/ (adj) hyperbolic /ˌhaɪpərˈbɒlɪk/ (adj) merit /ˈmerɪt/ (n) object /ˈɒdʒɪkt/ (n) requisite /ˈrekwɪzɪt/ (n) revolt /rɪˈvɒlt/ (v) slender /ˈsleɪndər/ (adj) thus /ðʌs/ (adv)	тауқалдыру бухгалтерлік есеп анышты экстравагантты, әдеттегіден тыс шаршау күштеп гиперболалық еңбегі нысан, пән реквизит көтеріліс шығару, көтерілу сымбатты осылайша, сонмен	потрясать бухгалтерский учёт плачевно экстравагантный уставать насиловственный гиперболический заслуга объект, предмет революция восстать стройный таким образом

English	Kazakh	Russian
Module 8 - Recent advances in technology		
algorithm /alˈɡɒrɪðəm/ (n) application /æplɪˈkeɪʃən/ (n) assessment /əˈseɪsmənt/ (n) assistant /əˈsɪstənt/ (n) currency /ˈkʌrənsi/ (n) manufacturing /ˌmænɪfæktʃərɪŋ/ (n) mechanics /mekəˈnɪks/ (n) network /ˈnetwɜːk/ (n) object /ˈɒbdʒɪkt/ (n) power /paʊə/ (n) spreadsheet /ˈspredʃiːt/ (n) transaction /trænzækʃən/ (n)	алгоритм қолданыс баға көмекші валюта өндіріс механика желі нысан қуат электронды кесте транзакция	алгоритм применённые оценка помощник валюта производство механика сеть объект мощность электронная таблица транзакция
8a aid /eɪd/ (n) app /æp/ (n) cloud /klaʊd/ (n) confine /kənˈfaɪn/ (v) counselling /ˌkaʊnslɪŋ/ (n) course /kɔːrs/ (n) detract (from) /dɪˈtrækt/ (v) distance /dɪˈstəns/ (n) education /ˌedʒəˈkeɪʃən/ (n) (be) integrated (into) (phr) resource /ˈriːsɔːs/ (n) worksheet /ˈwɜːksɦiːt/ (n)	көмек қосымша, қолданба бұлт (бұлтты сақтау) шектеу кеңес беру курс алынды қашықтық білім біріктірілген сілтеме жасау ресурс жұмыс параграфы	помощь приложение облако (облачное хранилище) ограничивать консультирование курс отвлекать (от) расстояние образование интегрированный (во что-либо) ресурсы рабочие листы
8b brainstorming /ˈbreɪnstɔːmɪŋ/ (n) encrypted /ɪnˈkɹɪptəd/ (adj) e-reader /iːˈriːdər/ (n) gesture detection (phr) keyboard /ˈkiːbɔːrd/ (n) nutrition /njuːˈtrɪʃən/ (n) track /træk/ (v) vault /vɔːlt/ (n)	ой-талқы шифрланған электрондық кітап ишараларды анықтау пернетақта тамақтану қалыптау анықтам	мозговой штурм зашифрованный электронная книга определение жестов клавиатура питание отслеживать свод
8c active /ˈæktɪv/ (adj) adblocker /ˌædbləkər/ (n) classified /ˌklæsɪfaɪd/ (adj) content /ˈkɒntent/ (n) conventional /kənˈvɛnʃənəl/ (adj) corporation /ˌkɔːpəˈreɪʃən/ (n) digital native (phr) engaged /ɪnˈɡeɪdʒd/ (adj) media /ˈmiːdiə/ (n pl) presence /ˈprezns/ (n) primary /ˈpraɪməri/ (adj) post /pəʊst/ (n) recommendation /ˌrekəməndeɪʃən/ (n) recruit /rɪˈkrʊt/ (n) tech savvy tek ˈsævi/ (n)	белсенді жарнама бұғаттаушы жіктелген мазмұн қалыпты, стандартты корпорация сандық азамат қызығушылық танытқан бұқаралық ақпарат құралдары болу, қолға бастапқы, негізгі хабарлама ұсыныс, ұсыным толықтыру, нығайту техникалық сауатты	активный блокировщик рекламы классифицированный содержание обычный, стандартный корпорация цифровой мир вовлечённый средства массовой информации наличие, общество первоначальный, основной сообщение рекомендация пополнять, укреплять технически грамотный

Word List

English	Kazakh	Russian
8e deter /di:tə/ (v) founder /faʊndə/ (n) open-source /ə'pən sɔ:z/ (adj)	шоһығту, ұстау қалаушы, құрушы ашық ақпарат қоздырғы	отпугивать, удерживать основатель открытые источники информации освобождение, облегчение сместить акцент
8f catwalk /kætwɜ:k/ (n) conference /kən'fərəns/ (n) coverage /kʌvərɪdʒ/ (n) glimpse /glɪmp/ (n) presidential election (phr)	подиум, көпір конференция жариялама, репортаж қозқарас, отызыс әсер президенттік сайлау	подиум, мәжілік конференция репортаж кідіріс, мәжбүрлік впечатление президентские выборы
Language in Use 8 hold down /həʊld daʊn/ (phr v) mark down /mɑ:k daʊn/ (phr v) narrow down /naɪəʊ daʊn/ (phr v) play down /pleɪ daʊn/ (phr v) step down /step daʊn/ (phr v) water down /wɔ:tə daʊn/ (phr v)	ұстау төмендету қысқарту азайту, кішірейту төмен түсу сұйылту	удерживать связать сократить преуменьшить спускаться разбавить
Module 9 - The Chemistry of Clothes		
absorb /əb'sɜ:b/ (v) compound /kəm'paʊnd/ (n) extinguish /ɪk'stɪŋɡwɪʃ/ (v) growth /grəʊθ/ (n) mould /maʊld/ (n) property /prə'pɜ:ti/ (n) repel /rɪ'pel/ (v) resistant /rɪ'zɪstənt/ (adj) substance /sʌb'stəns/ (n) wrinkle /'rɪŋkl/ (v)	сіңіру құрамы өшіру өсу лең, көгеру қасиеті итеру тұрақты, берік зат мықылдан қалу	впитывать состав тушить рост плесень свойство отталкивать стойкий, прочный вещество сминаться
9a brain /breɪn/ (n) heart /hɑ:t/ (n) level /'levl/ (n) nerve /nɜ:v/ (n) pressure /preʃə/ (n) production /prə'dʌkʃən/ (n) posture /'pɔ:stə/ (n) sensor /sensə/ (n) technique /tek'nɪk/ (n) temperature /tem'perətʃə/ (n) water-soluble chemical (phr)	мозг жүрек денісөй жүйке арысым өнім, өндіріс дене кейісі сенсор техника, тәсіл температура суда еритін химикат	мозг сердце уровень нерв давление продукт, производство поза, осанка сенсор техника, способ температура водорастворимый химикат
9b circulation /sɜ:kjʉleɪʃən/ (n) dexterity /dek'strəti/ (n) electrical current (phr) engineer /endʒɪ'niə/ (v) evoke /ɪ'vəʊk/ (v) intricate /ɪn'treɪkət/ (adj) melancholy /melə'nkɒli/ (n) persistence /pə'sɪstəns/ (n) pioneer /piə'nɪə/ (v) provoke /prə'vəʊk/ (v) response /rɪ'spəʊns/ (n) scan /skɑ:n/ (v)	айналым ептілік электр тогы жобалау тудыру шағасын меланхолия табындылық жүрегісі, бастамашылық араңдату жауап сканерлеу	циркуляция ловкость электрический ток проектировать вызывать запутанный меланхолия настойчивость вести, инициировать провоцировать ответ сканировать

English	Kazakh	Russian
steadfastness /stedɪfəstns/ (n)	турақтылық	стойкость
suppression /sʌpə'sju:z/ (n)	басу	подавление
tolerance /tə'lərəns/ (n)	төзімділік	толерантность
withstand /wɪð'stænd/ (v)	шыдау, тозу	выдерживать
9c		
adorned /ədɔ:nd/ (adj)	ашекейленген	украшенный
appeal /ə'pi:l/ (n)	апелляция	апелляция
embroidered /emb'reɪdɪd/ (adj)	кестеленген	вышитый
forward-thinking /'fɔ:wəd'θɪŋkɪŋ/ (adj)	көреген	дальновидный
infuse (with) /ɪn'fju:z/ (v)	қуя, араластыру	вливать, смешивать
potential /pə'tenʃəl/ (n)	шампа	потенциал
raw material (phr)	шығалат	сырьё
sequin /'si:kɪn/ (n)	жылтырақ	блесток
soar /sɔ:z/ (v)	булау	парить
9e		
ambition /æm'bɪʃən/ (n)	мақсат	цель
apron /ə'prɒn/ (n)	алжаққыш	фартук
breaches /breɪʃəs/ (n pl)	бриджи	бриджи
compile /kəm'paɪl/ (v)	құрастыру, құрау, мәлімет жинау	составлять, собирать материал (факты)
engineer /endʒɪniə/ (v)	жобалау	проектировать
fulfil /fʊl'fɪl/ (v)	орындау	выполнить
gown /gaʊn/ (n)	көйлек	платье
heritage /'herɪtɪdʒ/ (n)	мұра	наследие
invent /ɪn'vent/ (v)	ойлап табу	изобретать
preservation /prezə'veɪʃən/ (n)	сақтау	сохранение
shawl /ʃɔ:l/ (n)	орамал	платок
spark /spɑ:k/ (v)	ұшық	искра
9f		
bleach /bli:tʃ/ (v)	ағарту	отбеливать
dye /daɪ/ (v)	бою	красить
gin /dʒɪn/ (n)	жып	джин
harvest /'hɑ:vəst/ (v)	етін жинау	собирать урожай
raw /rɔ:z/ (adj)	шығ	сырой
spin /spɪn/ (v)	айғақтыру	врандаться
weave /wi:v/ (v)	тоғу	плести
Language in Use 9		
break into /breɪk'ɪntə/ (phr v)	бәра көкстен кіру	вламываться
bump into /bʌmp'ɪntə/ (phr v)	... соқтығысу	врезаться в ...
come into /kʌm'ɪntə/ (phr v)	... кіру, мұраға қалдыру	войти в ..., получить в наследство
get into /get'ɪntə/ (phr v)	кіру	входить
run into /rʌn'ɪntə/ (phr v)	... қақтығысу	столкнуться с ...
talk into /tɔ:k'ɪntə/ (phr v)	сендіру, көндіру	уговорить, убедить

Rules for Punctuation

Capital Letters

A capital letter is used:

- to begin a sentence.
Here we are.
- for days of the week, months and public holidays.
Friday, August, New Year
- for names of people and places.
My teacher's name is Sally and she's from Chester, Vermont.
- for people's titles.
Mr and Mrs Parke; Dr Mortimer; Professor Riggs; etc.
- for nationalities and languages.
They are Chilean.
He's fluent in Italian and Spanish.
Note: The personal pronoun *I* is always a capital letter. *Gus and I are going on holiday together.*

Full stop (.)

A full stop is used:

- to end a sentence that is not a question or an exclamation.
We're having a great time. You can never get bored here in Rio.
- after abbreviations. *Mr Jones is a great teacher.*

Comma (,)

A comma is used:

- to separate words in a list.
We need sugar, milk, tomatoes and apple juice.
- to separate a non-essential relative clause (i.e. a clause giving extra information which is not essential to the meaning of the main clause) from the main clause.
Tony, who is a doctor, lives in Africa.
- after certain joining words/transitional phrases (e.g. in addition to this, moreover, for example, however, in conclusion, etc).
Moreover, Jenny is very patient with children.
- when *if*-clauses or other dependent clauses begin with compound or complex sentences.
If you have any questions, don't hesitate to ask.
Note: No comma is used, however, when they follow the main clause.
- to separate tag questions from the rest of the sentence.
Mr Stevens is your maths teacher, isn't he?
- before the words *asked, said, etc* when followed by direct speech.
"Turn down the music," said Sarah.

Question Mark (?)

A question mark is used: to end a direct question.
Where are the children?

Exclamation Mark (!)

An exclamation point is used: to end an exclamatory sentence (i.e. a sentence showing admiration, surprise, joy, anger, etc).
That's a lie!
What awful weather!

Quotation Marks (" ")

- Single quotes are used: when you are quoting someone in direct speech (nested quotes).
"Then Helen said, "Are you sure this is the right address?"
- Double quotes are used: in direct speech to report the exact words someone said.
"What's your name?" she asked him.

Colon (:

A colon is used: to introduce a list. *There were three of us on the boat: my brother, my cousin Lyn and me.*

Brackets []

Brackets are used: to separate extra information from the rest of the sentence.
The most popular newspapers (i.e. The New York Times, The Observer, etc) can be found almost anywhere in the world.

Apostrophe (')

An apostrophe is used:

- in short forms to show that one or more letters or numbers have been left out.
I'm (= I am) writing to complain about ...
She left for Italy in the winter of '98. (=1998)
- before or after the possessive *'s* to show ownership or the relationship between people.
Tom's car, my friend's husband (singular noun + 's)
my parents' friends (plural noun + ')
women's dresses (irregular plural + 's)

American English – British English Guide

American English	British English	American English	British English
A account airplane anyplace/anywhere apartment	bill/account aeroplane anywhere flat	P pants/trousers pantyhose/nylons parking lot pavement pedestrian crossing (grates) chips public school purse	trousers tights car park road surface zebra crossing crisps state school handbag
B bathrobe bathtub bill busy (phone)	dressing gown bath banknote engaged (phone)	R railroad rest room	railway toilet/cloakroom
C call/phone can candy check closet connect (telephone) cookie corn crazy	ring up/phone tin sweets bill (restaurant) wardrobe put through biscuit sweetcorn, maize mad	S sales clerk/sales girl schedule shorts (underwear) sidewalk stand in line store, shop subway	shop assistant groetable pants pavement queue shop underground
D desk clerk dessert downtown drapes drugstore/pharmacy duplex	receptionist pudding/dessert/sweet (city) centre curtains chemist's (shop) semi-detached	T truck two weeks	lorry, van fortnight/two weeks
E eggplant elevator	aubergine lift	V vacation vacuum (n) vacuum cleaner vest	holiday(s) hoover hoover waistcoat
F fall faucet first floor, second floor, etc flashlight French fries front desk (hotel)	autumn tap ground floor, first floor, etc torch chips reception	W with/without (milk/cream in coffee)	black or white
G garbage/trash garbage can gas gas station grade	rubbish dustbin/bin petrol petrol station/garage class/year	Y yard	garden
I intermission intersection	interval crossroads	Z (pronounced, "zee") zero zip code	(pronounced, "zed") naught postcode
J janitor	caretaker/porter	Grammar	
K kerosene	paraffin	He <u>just</u> went out. He <u>has just</u> gone out.	He <u>has just</u> gone out.
L lawyer/attorney line lost and found	solicitor queue lost property	Hello, is <u>this</u> Steve?	Hello, is <u>that</u> Steve?
M mail make a reservation motorcycle movie movie house/theater	post book motorbike/motorcycle cinema	Do you <u>have</u> a car? Have you <u>got</u> a car?	Have you <u>got</u> a car?
N newsstand	newsagent	Spelling	
O office (doctor/dentist's) one-way (ticket) overalls	surgery single (ticket) dungarees	aluminum analyze center check color honor jewelry practice(n,x) program realize line travel(ler)	aluminium analyse centre cheque colour honour jewellery practice(s) practise(s) programme realise tyre traveller
		Expressions with prepositions and particles	
		different <u>from</u> /than live <u>in</u> X street <u>on</u> a team <u>on</u> the weekend Monday <u>through</u> Friday	different <u>from</u> / live <u>in</u> X street <u>in</u> a team <u>at</u> the weekend Monday <u>to</u> Friday

Pronunciation

Vowels

a	/eɪ/	care, rare, scare, dare, fare, share
	/eɪ/	name, face, table, lake, take, day, age, ache, late, snake, make
	/æ/	apple, bag, hat, man, flat, lamp, fat, hand, black, cap, fan, cat, actor, factor, manner
	/ɔ:/	ball, wall, call, tail, small, hall, warn, walk, also, chalk
	/ɒ/	want, wash, watch, what, wasp
	/ə/	alarm, away, America
	/ʌ/	arms, dark, bar, star, car, ask, last, fast, glass, far, mask
e	/eɪ/	egg, end, hen, men, ten, bed, leg, tell, penny, pet, bell, pen, tent
i	/ɪ/	in, ill, ink, it, is, hill, city, sixty, fifty, lip, lift, silly, chilly
	/ɪ/	girl, sir, skirt, shirt, bird
	/aɪ/	ice, kite, white, shine, bite, high, kind
o	/əʊ/	home, hope, bone, joke, note, rope, nose, tone, blow, know, no, cold
	/ɒ/	on, ox, hot, top, chop, clock, soft, often, box, sock, wrong, fax
	/aʊ/	owl, town, clown, how, brown, now, cow
oo	/u:/	book, look, foot
	/u:/	room, spoon, too, tooth, food, moon, boot
	/ʊ/	blood, flood
	/dɔ:/	floor, door
u	/u:/	turn, fur, urge, hurl, burn, burst
	/ʌ/	up, uncle, ugly, much, such, run, jump, duck, jungle, hut, mud, luck
	/ʊ/	pull, push, full, cushion
	/jʊ/	unique, union
y	/aɪ/	sky, fly, fry, try, shy, cry, by

Consonants

b	/b/	box, butter, baby, ball, bank, black
c	/k/	cat, coal, call, calm, cold
	/s/	cell, city, pencil, circle
d	/d/	down, duck, dim, double, dream, drive, drink
f	/f/	fat, fan, first, food, lift, fifth
g	/g/	grass, goat, go, gold, big, dog, glue, get, give
	/dʒ/	gem, gin, giant
h	/h/	heat, hit, hen, hand, perhaps BUT hour, honest, dishonest, heir
j	/dʒ/	jam, just, job, joke, jump
k	/k/	keep, king, kick
l	/l/	lift, let, look, lid, clever, please, plot, black, blue, slim, silly

m	/m/	map, man, meat, move, mouse, market, some, small, smell, smile
n	/n/	next, not, tenth, month, kind, snake, snip, noon, run
p	/p/	pay, pea, pen, poor, pink, pencil, plane, please
q	/kw/	quack, quarter, queen, question, quiet
r	/r/	rat, rich, roof, road, ready, cry, grass, bring, fry, carry, red, read
s	/s/	sit, set, seat, soup, snow, smell, glass, dress, goose
	/tʃ/	houses, cousin, husband
t	/t/	two, ten, tooth, team, turn, tent, tool, trip, train, tree
v	/v/	veal, vet, vacuum, vote, arrive, live, leave, view
w	/w/	water, war, wish, word, world
y	/j/	youth, young, yes, yacht, year
z	/z/	zoo, zebra, buzz, crazy

Diphthongs

ea, ee	/eɪ/	ear, near, fear, hear, clear, year, dear, beer, cheer, deer
	/eɪ/	eat, each, heat, leave, clean, seat, neat, tea, keep, feed, free, tree, three, bee
ei	/eɪ/	eight, freight, weight, vein
	/aɪ/	height
ai	/eɪ/	pain, sail, tail, main, bait, fail, mail
ea	/eɪ/	pear, wear, bear
	/ɪə/	earth, pearl, learn, search
ie	/aɪ/	die, tie, lie
ou	/aʊ/	tough, touch, enough, couple, cousin, trouble
	/aʊ/	mouse, house, round, trout, shout, doubt
oi	/ɔɪ/	oil, boil, toil, soil, coin, choice, voice, join
oy	/ɔɪ/	boy, joy, toy, annoy, employ
ou	/aʊ/	court, bought, brought
au	/aʊ/	naughty, caught, taught

Double letters

sh	/ʃ/	shell, ship, shark, sheep, shrimp, shower
ch	/tʃ/	cheese, chicken, cherry, chips, chocolate
ph	/f/	photo, dolphin, phone, elephant
th	/θ/	thief, throne, three, bath, cloth, earth, tooth
	/ð/	the, this, father, mother, brother, feather
ng	/ŋ/	thing, king, song, sing
nk	/ŋk/	think, tank, bank

Action

for Kazakhstan

Science Schools
GRADE 11



Action for Kazakhstan Science Schools Grade 11 is a challenging course for today's learners of English at CEFR Level High B2.

The course provides a variety of stimulating topics and rich texts presented in themed modules which follow the order of the English language Curriculum in Kazakhstan. It is accompanied by a wide range of fully interactive digital components and rich video material which broadens learners' understanding and deepens their engagement with the topic.



For the Student



Student's Book



Workbook &
Grammar Book



DVD Activity Book

e-Book software
(offline-Windows,
MacOSX)



DVD Video
(PAL)

For the Teacher



Teacher's Book



Workbook &
Grammar Book



DVD Activity Book



DVD Activity Book
Key



Class CDs



Teacher's Resource
Pack & Tests CD-ROM



IWB



Express Publishing

ISBN 978-1-4715-6442-8



9 781471 584428