



4

Natural Sciences and Technology

ASSESSMENT HANDBOOK



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Oxford Successful Natural Sciences and Technology Grade 4 Assessment Handbook



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Published in South Africa by
Oxford University Press Southern Africa (Pty) Limited
Vasco Boulevard, Goodwood, N1 City, P O Box 12119, Cape Town,
South Africa

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First published 2019

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**Oxford Successful Natural Sciences and Technology Grade 4 Assessment
Handbook**

ISBN (print) PROM190756796

First impression 2019

Printed on [insert paper quality e.g. acid-free paper]

Acknowledgements

Author/Compiler: Tania Kliphuis

Publisher: Janine Wilson

Editor: Janine Versfeld

Proofreader: Alison Paulin

Design by: Electric Book Works

Cover designer: Judith Cross

DTP Illustrators: Alex Flemming; Mindi Flemming; Jennifer Jacobs

Produced by: Electric Book Works

Printed and bound by:

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Living and non-living things

1. Match the life process in the first column with the correct description in the second column.

- 1.1 reproducing
- 1.2 feeding
- 1.3 excreting
- 1.4 moving
- 1.5 sensing
- 1.6 growing
- 1.7 breathing

- A. When a living thing gets rid of waste.
- B. Living things do not stay still.
- C. When a living thing makes its own young.
- D. Getting bigger or older.
- E. Eating food to move, grow and reproduce.
- F. Animals need oxygen from their air.
- G. When living things can tell what is going on in their environment.

[7]

2. Is this sentence true or false?

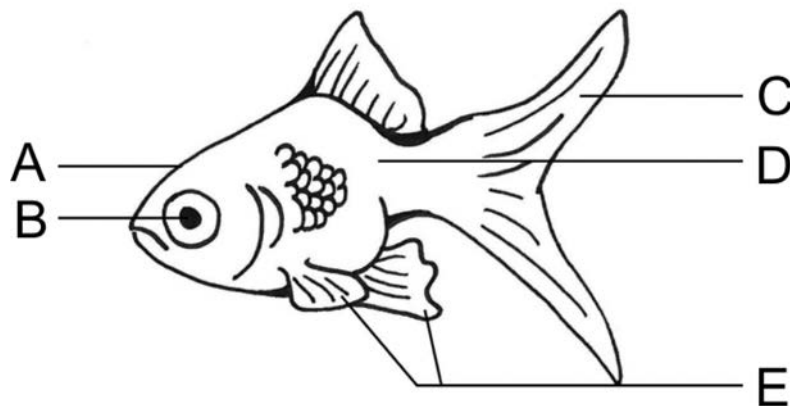
A seed is a living thing.

[1]

Total: 8

Structures of plants and animals

3. Label this drawing of a fish.



[5]

4. Look at these photos. These three animals have different types of limbs.



zebra



millipede



spider

Write a paragraph to compare the animals' limbs. Your paragraph should include the following information:

- three sentences to describe the animals' limbs (one sentence for each animal)
- two or three sentences to compare how the animals use their limbs.

[5]

Total: 10

What plants need to grow

5. Define the term germination.

[2]

6. What does a plant need to grow? Choose the correct answer.

- A. water, soil, and air
- B. light and water
- C. light, water, and air
- D. water and air

[2]

Total: 4

Habitats of animals

7. Describe a grassland habitat.

[3]

8. Give an example of an animal that lives in a grassland habitat.

[1]

9. Describe a forest habitat.

[3]

10. Give an example of an animal that lives in a forest habitat.

[1]

Total: 8

Structures for animal shelters

11. Classify the following animal shelters into two categories: natural and human-made:

kennel; nest; burrow; bird cage; ant hill; stable; cave; tree hollow

[4]

12. Describe a shell structure.

[2]

13. Give two examples of animal shelters that are shell structures.

[2]

14. Give two examples of animal shelters that are frame structures.

[2]

Total: 10

TOTAL: 40 MARKS

Glossary

category: group of things that share certain characteristics

classify: put into specific categories or groups

column: division in a table that goes from the top of the table to the bottom

compare: discuss how two or more things are similar or not similar

define: write a definition; describe exactly in one sentence

describe: give a detailed explanation

description: words or a picture that describes or explains something

false: not true; incorrect

habitat: area or place where animals and plants live

label (noun): a description for a part of a picture

life process: something a living thing does to stay healthy and alive

limb: arm or leg

term: the word we use for a specific thing

true: correct

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
category	ingxenye	udidi	kategorie	baa ka boleng	mokgahlelo/ boemo
classify	hlela	hlela	klassifiseer	baa mmogo (go baya dilo tse di tshwanang mmogo)	hlopha
column	ikholamu	ikholam	kolom	kholomo	kholomo
compare	qhathanisa	thelekisa	vergelyk	tshwantshanya	bapisa
define	chaza	nika ingcaciso	definieer	tlhalosa	hlalosa
describe	chaza	chaza	beskryf	tlhalosa	hlalosa
description	incazelo	inkcazelo	beskrywing	tlhaloso	tlhaloso
false	amanga	into ebubuxoki	onwaar	ke maaka	mafosi

Glossary

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
habitat	indawo yokuhlala	indawo yokuhlala	habitat	bonno	tikoloho/ bophelo ba dimela le diphoofolo
label	bhala amagama ento	ileyibhile	byskrif	kwala maina	leibole
life process	isimo sempilo	indlela yokuphila	lebensproses	dikgato tsa botshelo	potoloho ya bophelo
limb	ilungu	ilungu	ledemaat	setho	setho
term	igama	ikota	term	kgweditharo	kotara
true	iqiniso	yinyaniso	waar	ke nnete	nnete

Skills covered

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
Living and non-living things			
1	low order	match	Strand 1 Unit 1 Activity 2 (p. 13)
2	low order	identify	Strand 1 Unit 2 Activity 3 (p. 14)
Structures of plants and animals			
3	middle order	label	Strand 1 Unit 4 Activity 1 (p. 23)
4	middle order	compare	Strand 1 Unit 4 Activity 2 (p. 25)
What plants need to grow			
5	low order	define	Strand 1 Unit 5 Activity 2 (p. 28)
6	low order	identify	Strand 1 Unit 5 Activity 2 (p. 28)
Habitats of animals			
7	middle order	describe	Strand 1 Unit 6 Activity 2 (p. 33)
8	middle order	give examples	Strand 1 Unit 6 Activity 2 (p. 33)
9	middle order	describe	Strand 1 Unit 6 Activity 2 (p. 33)
10	middle order	give examples	Strand 1 Unit 6 Activity 2 (p. 33)

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
Structures for animal shelters			
11	middle order	classify	Strand 1 Unit 8 Activity 2 (p. 40)
12	middle order	describe	Strand 1 Unit 8 Activity 2 (p. 40)
13	middle order	give examples	Strand 1 Unit 8 Activity 2 (p. 40)
14	middle order	give examples	Strand 1 Unit 8 Activity 2 (p. 40)

Section A

Living and non-living things

1. Are the following things living or non-living?

zebra; water; car; butterfly; seed; tree; shell; spider

[4]

Total: 4

Structures of plants and animals

2. Look at this diagram of a plant.



Section A

In a table, write down the labels and the function of each part of the plant.

Part of the plant	Function
A.	
B.	
C.	
D.	

[8]

Total: 8

Habitats of animals

3. Match the examples of the animals with the habitat that they live in.

3.1 springbok

3.2 monkey

3.3 crocodile

3.4 scorpion

A. desert

B. forest

C. grassland

D. river

[4]

Total: 4

Structures for animal shelters

4. Write down four reasons why a bird's nest built in a tree is a good shelter for birds.

[4]

Total: 4

SECTION A TOTAL: 20 MARKS

Section B

Materials all around us

5. Label this flow chart.



[4]

6. Explain this statement: No new water is added to Earth.

[3]

Total: 7

Solid materials

7. Match the raw material in the first column with a manufactured product in the second column.

- 7.1 oil
- 7.2 sand
- 7.3 wood
- 7.4 animal hide

- A. glass
- B. paper
- C. paint
- D. leather

[4]

Total: 4

Strengthening materials

8. Explain how you would fold a piece of paper to make a pillar that it is strong enough to hold up a book.

[4]

Total: 4

Strong frame structures

9. What is a strut?

[2]

10. Look at this photo. Explain how struts have been used to strengthen the structure.



[3]

Total: 5

SECTION B TOTAL: 20 MARKS

Glossary

diagram: drawing or picture

explain: make something clear by describing it in detail and giving some facts

flow chart: a diagram that shows the order or sequence of a process

function (noun): what something is used for; purpose

label (noun): a description for a part of a picture

manufactured product: something that has been made and processed

material: what a thing is or can be made from

reason: explanation that says why or why not

statement: a sentence that is, or appears to be, factual

strengthen: make stronger

table: a set of facts shown in rows and columns

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
diagram	umdwebo	isazobe	diagram	setshwantsho	tayakeramo
explain	chaza	cacisa	verduidelik	tlhalosa	hlalosa
flow chart	ishadi lohlelo	itshati	vloeidiagram	chate	tjhate ya tatellano ya diketsahalo
function	umsebenzi	umsebenzi	funksie	tiro	kabelo
label	bhala amagama ento	ileyibhile	byskrif	kwala maina	leibole
manufactured product	izimpahla ezakhiwe izimpahla ezilungele ukusetshenziswa	imveliso eyenziweyo	vervaardigde produk	tisa maitirelo	sehlahiswa se entsweng
material	izinto noma izinsiza kukhiqiza	izixhobo	stof	didiriswa	sesebediswa
reason	isizathu	isizathu	rede	lebaka	lebaka
statement	isitatimende	ingxelo	stelling	motlhala	taba e bolelwang

Glossary

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
strengthen	qinisa	qinisa	versterk	tiisa/ matlafatsa	matlafatsa
table	ithebula	itheyibhile	tabel	dikholomo le mela	papetla

Skills covered

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
Section A			
Living and non-living things			
1	middle order	classify	Strand 1 Unit 1 Activity 1 (p. 11)
Structures of plants and animals			
2	high order	tabulate	Strand 1 Unit 3 Activity 1 (p. 19)
Habitats of animals			
3	low order	match	Strand 1 Unit 6 Activity 2 (p. 33)
Structures for animal shelters			
4	high order	justify	Strand 1 Unit 8 Activity 2 (p. 40)
Section B			
Materials all around us			
5	middle order	label	Strand 2 Unit 2 Activity 1 (p. 50)
6	middle order	explain	Strand 2 Unit 3 Activity 1 (p. 53)
Solid materials			
7	low order	match	Strand 2 Unit 4 Activity 1 (p. 55)
Strengthening materials			
8	middle order	explain	Strand 2 Unit 6 Activity 1 (p. 60)
Strong frame structures			
9	low order	define	Strand 2 Unit 7 Activity 1 (p. 63)
10	middle order	explain	Strand 2 Unit 7 Activity 3 (p. 65)

Energy and energy transfer

1. Read this food chain:

Sun → grass → cow → human

Explain how the energy from the Sun is transferred through this food chain until it reaches the human.

[4]

2. Look at these photos. Write down a food chain.



Sun; grass



snake



bird



rat



grasshopper

[6]

Total: 10

Energy around us

3. Complete this table.

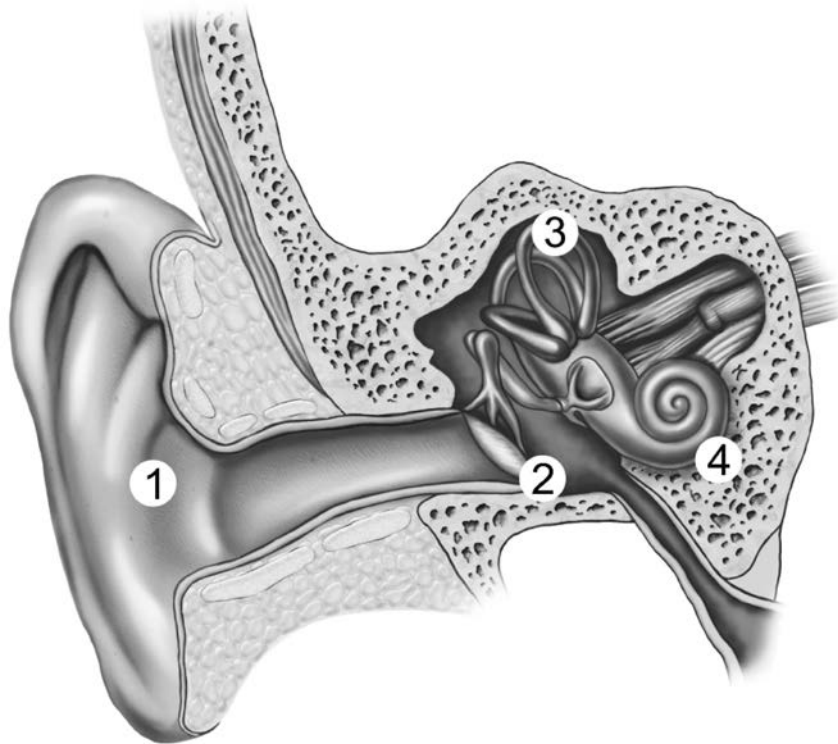
Appliance	Input energy	Output energy
Kettle		
Ceiling fan		
Gas stove		
Desk lamp		
Car		

[10]

Total: 10

Energy and sound

4. This picture shows the ear. Match the labels to the picture.



- A. Three small bones called the ossicles vibrate.
- B. The liquid in the cochlea vibrates and sends signals to the brain to help you identify the sound.
- C. The outer ear funnels the sound into the inner ear.
- D. A membrane called the eardrum expands and vibrates.

[4]

5. Compare pitch and volume. Use examples to explain your answer.

[4]

6. Name three ways that noise pollution can be harmful.

[6]

7. List three sources of noise pollution.

[6]

Total: 20

TOTAL: 40 MARKS

Glossary

appliance: machine used in a home to make life easier

food chain: visual representation of a series of living things, which are each dependent on the next for food

harmful: something that causes harm or damage

input energy: energy that is put into a system or process

name (verb): say what the word for something is

noise pollution: harmful levels of loud and unpleasant sounds

output energy: energy that comes out of a system or process

transfer: move from one place to another

vibrate: move or shake rapidly and continuously

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
appliance	izinto zikagesi	izinto zombane	toestel	sediriswa sa motlakase	sesebediswa sa motlakase
food chain	ubudlelwano bokudla phakathi kwezilwane nezitshalo	itsheyini yokutya	voedselketting	dijo	ketane ya dijo
harmful	okunobungozi	inobungozi	skadelik	ekotsi	ekotsi
input energy	amandla angenayo	amandla afakiweyo/ asetyenzisiweyo	inset-energie	maatla a go kenyelletswa	matla a ho kenyelletswa
name	nika igama lento	xela/biza	benoem	neela	reha
noise pollution	ukuphazamiseka komsindo	ungcoliseko lwengxolo	geraasbesoedeling	kgotlelego ya modumo	tshilafatso ya lerata
output energy	amandla aphumayo	imveliso yamandla	uitset-energie	maatla a twsayang	matla a tswang
transfer	dlulisa	tshintshela	oordra	fetisetsa	fetisetsa
vibrate	dlidliza	ngcangcazela/ ngcangcazelisa	vibreer	roroma/ tetesela	thothomela

Skills covered

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
Energy and energy transfer			
1	middle order	outline	Strand 3 Unit 2 Activity 1 (p. 83)
2	high order	organise	Strand 3 Unit 2 Activity 1 (p. 83)
Energy around us			
3	middle order	tabulate	Strand 3 Unit 3 Activity 2 (p. 87) Strand 3 Unit 4 Activity 3 (p. 90)
Energy and sound			
4	low order	match	Strand 3 Unit 6 Activity 2 (p. 99)
5	middle order	compare	Strand 3 Unit 7 Activity 1 (p. 100) Strand 3 Unit 7 Activity 3 (p. 102)
6	middle order	name	Strand 3 Unit 8 Activity 3 (p. 105)
7	middle order	list	Strand 3 Unit 8 Activity 1 (p. 104) Strand 3 Unit 8 Activity 2 (p. 104)

Section A

Energy and energy transfer

1. Johnny and his family are eating a roast chicken for dinner. Write a food chain to show how energy from the Sun is transferred to Johnny from the chicken.

[3]

2. What is the difference between a food chain and a food web?

[2]

Total: 5

Energy around us

3. Complete this table.

Appliance	Input energy	Output energy
Torch		
Hairdryer		
Paraffin lamp		
Helicopter		
Vuvuzela		

[10]

Total: 10

Energy and sound

4. Give five examples of how noise pollution can be reduced.

[5]

Total: 5

SECTION A TOTAL: 20 MARKS

Section B

Planet Earth

5. Look at this photo of Earth.



Describe the features of the Earth, using what you know about the Earth and using the photo to help you.

[5]

Total: 5

The Sun

6. Why is the Sun important for life on Earth?

[2]

7. Is this sentence true or false?

The Sun is the closest planet to Earth.

[1]

Total: 3

The Earth and the Sun

8. Name two ways that the Earth moves in space.

[2]

9. Is this sentence correct? Explain why or why not.

The Earth experiences night and day because the Earth orbits around the Sun.

[3]

Total: 5

The moon

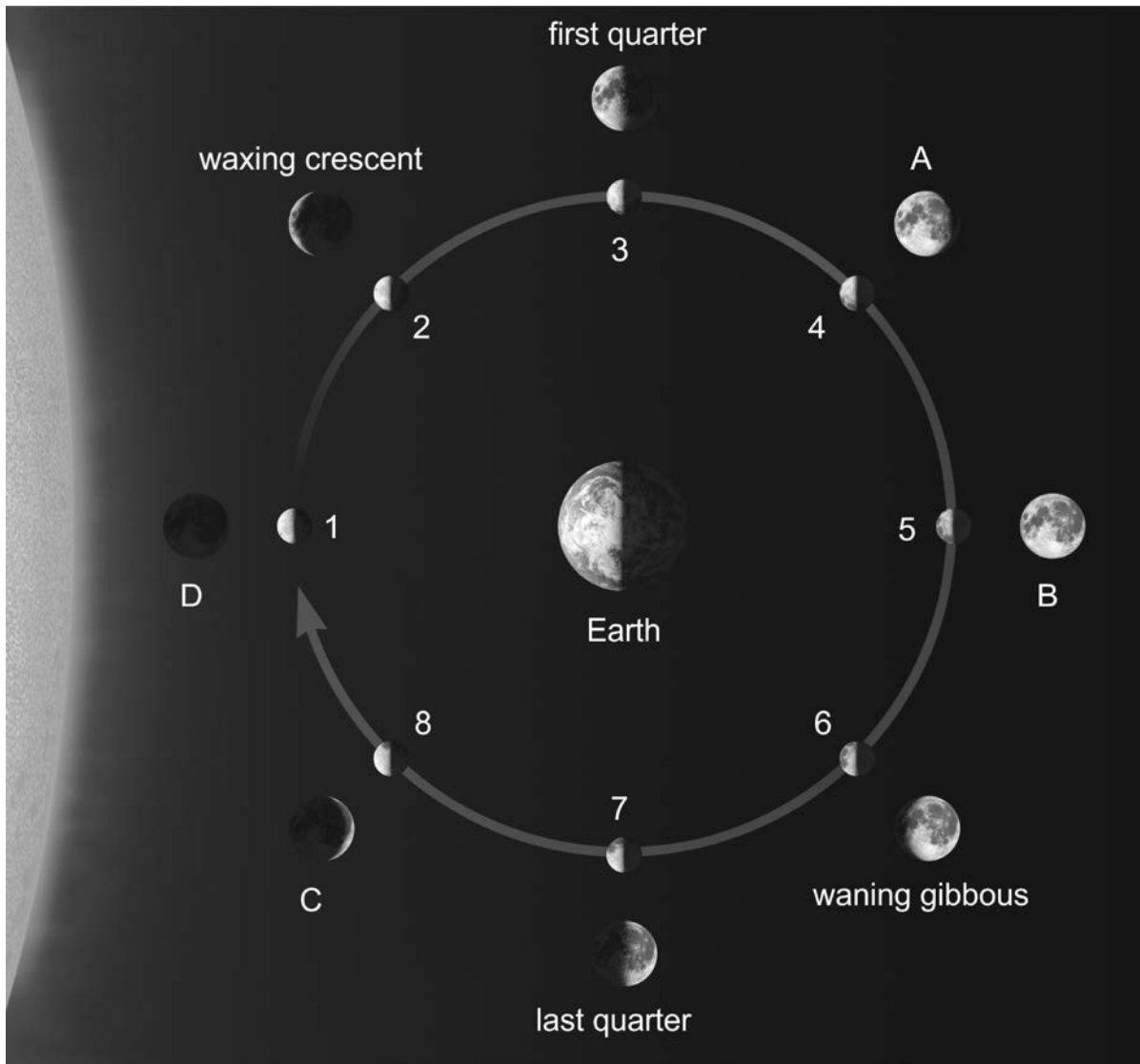
10. Complete this sentence:

It takes A. _____ days for the moon to B. _____ the Earth.

[2]

Section B

11. Give this diagram a heading, and provide the missing labels for A to D.



[5]

Total: 7

SECTION B TOTAL: 20 MARKS

Glossary

complete (verb): finish something

difference: how things are not the same

feature: a special characteristic of something

heading: a word or short statement that tells you what something is about

provide: supply or make available

reduce: make smaller or less

space: everything beyond Earth's atmosphere

English	isiZulu	isiXhosa	Afrikaans	Setswana	Sesotho
complete	qedela	gqibezela	voltooi	feleletsa	qetella
difference	umehluko	umahluko	verskil	pharologano	phapano
feature	uphawu	isimo	eienskap	ponagalo	makgetha
heading	isihloko	sihloko	opskrif	setlhogo	sehlooho
provide	nikeza	bonelela/nika	voorsien	neela	fana
reduce	nciphisa	nciphisa	reduseer	fokotsa	fokotsa
space	umkhathi	isithuba	die ruimte	lefaufau	sepakapaka

Skills covered

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
Section A			
Energy and energy transfer			
1	high order	organise	Strand 3 Unit 2 Activity 1 (p. 83)
2	middle order	explain	Strand 3 Unit 2 Activity 1 (p. 83)
Energy around us			
3	middle order	tabulate	Strand 3 Unit 3 Activity 2 (p. 87) Strand 3 Unit 4 Activity 3 (p. 90)
Energy and sound			
4	middle order	give examples	Strand 3 Unit 8 Activity 3 (p. 105)
Section B			
Planet Earth			
5	middle order	describe	Strand 4 Unit 1 Activity 1 (p. 114)
The Sun			
6	middle order	explain	Strand 4 Unit 3 Activity 1 (p. 119)
7	low order	remember	Strand 4 Unit 3 Activity 1 (p. 119)
The Earth and the Sun			
8	middle order	name	Strand 4 Unit 4 Activity 1 (p. 122) Strand 4 Unit 4 Activity 2 (p. 122)
9	high order	justify	Strand 4 Unit 4 Activity 2 (p. 122)

Question number	Level of difficulty	Skill	More exercises in <i>Oxford Successful Natural Sciences and Technology Grade 4 Learner's Book</i> for further practice
The moon			
10	low order	remember	Strand 4 Unit 7 Activity 1 (p. 131)
11	low order	label	Strand 4 Unit 7 Activity 1 (p. 131)

Living and non-living things

1. 1. C
2. E
3. A
4. B
5. G
6. D
7. F

[7]

2. True

[1]**Total: 8****Structures of plants and animals**

3. A. head
- B. eyes (also accept sense organs)
- C. tail
- D. body
- E. fins

[5]

4. Example answer: A zebra has four legs and hooves. A millipede has hundreds of small legs. A spider has eight long legs. The zebra needs to walk and run fast over grass and sand, so its legs help to keep it stable. A millipede and a spider are small and need to move quickly over all surfaces. Their many legs help them to do this.

[5]**Total: 10**

What plants need to grow

5. The process whereby a seed comes to life. / The process through which a plant grows from a seed.

[2]

6. C

[2]

Total: 4

Habitats of animals

7. Example answer: A grassland habitat is covered with mostly grasses and a few low-growing trees. There is a lot of open space for animals to graze. The land is quite dry, but water can be found in rivers and at waterholes.

[3]

8. Accept any correct answers. For example: zebra, giraffe, lion, buck.

[1]

9. Example answer: In a forest habitat, the vegetation is mostly tall trees. There is lots of shade because the trees are close together. The ground or floor of the forest habitat is covered with dead leaves, twigs, and other organic matter.

[3]

10. Accept any correct answers. For example: monkeys, birds, frogs, lizards, snakes.

[1]

Total: 8

Structures for animal shelters

11. • Natural: Nest, burrow, ant hill, cave, tree hollow
• Human-made: Bird cage, stable, kennel

[4]

12. A shell structure has a strong cover and is hollow inside. It often has a curved shape, which gives it more strength.

[2]

13. Examples include nest, snail shell, egg.

[2]

14. Examples include kennel, spider web, bird cage.

[2]

Total: 10

TOTAL: 40 MARKS

Section A

Living and non-living things

1. • Living: Zebra, butterfly, seed, tree, spider.
• Non-living: Water, car, shell.

[4]

Total: 4

Structures of plants and animals

2.

Part of the plant	Function
A. Leaf	Catch the sunlight.
B. Fruit	Holds the seeds.
C. Stem	Holds the plant upright.
D. Root	Hold the plant in the soil.

[8]

Total: 8

Habitats of animals

3. 1. C
2. B
3. D
4. A

[4]

Total: 4

Structures for animal shelters

4. Accept reasonable answers. Example answer:

- It is a shell structure, so eggs can be laid in it without rolling away.
- It is made of twigs, leaves, and other materials that keep the birds and their chicks warm.
- It is usually built high off the ground, out of the reach of predators.
- If the tree has a lot of leaves, it will protect the birds from the wind, rain, and sun.

[4]

Total: 4

SECTION A TOTAL: 20 MARKS

Section B

Materials all around us

5. A. solid (also accept: ice)
B. liquid (also accept: water)
C. evaporation
D. gas (also accept: water vapour)

[4]

6. Learners must discuss the statement in terms of the water cycle, and clearly explain how water evaporates from the oceans and other bodies of water, condenses in the sky in the form of clouds, and then falls back to Earth in the form of rain. In this way, water is recycled constantly.

[3]

Total: 7

Solid materials

7. 1. C
2. A
3. B
4. D

[4]

Total: 4

Strengthening materials

8. Learners can describe any one of three methods of creating a pillar: folding the paper into triangles, tubes or squares. They should describe in points how to fold the paper. Look out for the following knowledge:

- an understanding that the paper is stronger if it is folded
- an understanding of how a pillar should look (i.e. it is hollow in the middle).

[4]

Total: 4

Strong frame structures

9. A strut is used to strengthen a frame structure. It helps a frame structure to maintain its shape.

[2]

10. Struts have been used to make the stilts stronger so that they hold up the top part of the structure, and make the structure strong enough to support weight. They have also been used to keep the poles at the top of the structure apart, so that the structure holds its square shape. Struts have also been used on the roof to keep it strong and to keep it above the bottom structure.

[3]

Total: 5

SECTION B TOTAL: 20 MARKS

Energy and energy transfer

1. Sunlight travels to Earth and provides heat and light. Grass uses the energy from the Sun to grow. The cow eats the grass, which has the energy from the Sun. The human then eats the cow.

[4]

2. Sun → grass → grasshopper → rat → snake → bird

[6]**Total: 10****Energy around us**

3.

Appliance	Input energy	Output energy
Kettle	Electricity	Heat
Ceiling fan	Electricity	Movement
Gas stove	Gas	Heat
Desk lamp	Electricity	Light
Car	Petrol	Movement

[10]**Total: 10**

Energy and sound

4. A. 3
B. 4
C. 1
D. 2

[4]

5. Example answer: Volume is how loud or soft a sound is. For example, you can adjust the volume of a radio to make the sound louder or softer. Pitch is how high or low a sound is. For example, a whistle has a high pitch and the sound of a truck has a low pitch.

[4]

6. Accept any three reasonable answers. Examples:

- Causes stress.
- Can prevent people from getting enough sleep.
- Can cause hearing problems or deafness.
- Can distract people so that they cannot work properly.
- Can affect people's moods.
- Can affect people's behaviour.

[6]

7. Accept any three reasonable answers. Examples:

- mines and factories
- building sites
- roads, railways, and airports
- cars, helicopters, and planes
- machines and appliances

[6]

Total: 20

TOTAL: 40 MARKS

Section A

Energy and energy transfer

1. Sun → seeds → chicken feed → grass → Johnny

[3]

2. A food chain is a simple diagram that shows how energy is transferred from the Sun through different organisms. It shows one organism at a time. A food web shows how these food chains are interlinked.

[2]

Total: 5

Energy around us

3.

Appliance	Input energy	Output energy
Torch	Batteries	Light
Hairdryer	Electricity	Sound/Heat
Paraffin lamp	Paraffin	Light
Helicopter	Petrol/Diesel	Movement
Vuvuzela	Person's breath	Sound

[10]

Total: 10

Energy and sound

4. Accept any five reasonable answers. Examples:

- People who work in mines and factories should wear noise-cancelling headphones/earplugs.
- Give construction sites a time limit so that there is a break in the noise.
- Plant tall trees next to roads to try to reduce the noise for people in the area.
- Make sure that cars and other vehicles are well maintained so that they do not make so much noise.
- Have quiet areas where people are not allowed to make a noise (for example, parks).
- Don't play music too loudly.

[5]

Total: 5

SECTION A TOTAL: 20 MARKS

Section B

Planet Earth

5. Learners must mention the following features:

- The Earth is shaped like a sphere.
- The Earth is made of rock.
- Most of the planet is covered with water (oceans, lakes, rivers).
- The rest of the planet is covered by land (continents and islands).
- There is a thin layer of air that surrounds the Earth.

[5]

Total: 5

The Sun

6. The Sun provides light and warmth, which are essential for life on Earth.

[2]

7. False. (The Sun is the closest **star**; it is not a planet.)

[1]

Total: 3

The Earth and the Sun

8. • The Earth orbits around the Sun.
• The Earth rotates on its own axis.

[2]

9. It is incorrect. The Earth's orbit around the Sun affects the seasons. The Earth experiences day and night because it rotates on its own axis.

[3]

Total: 5

The moon

10. A. $29\frac{1}{2}$ days
B. orbit

[2]

11. Heading: Phases of the moon

Labels:

- A. waxing gibbous
B. full moon
C. waning crescent
D. new moon

[5]

Total: 7

SECTION B TOTAL: 20 MARKS

