

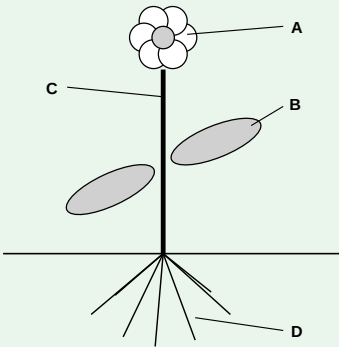


MARK SCHEME

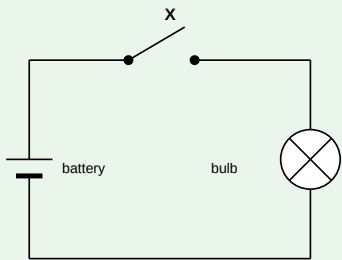
Primary - Stage 4 - Paper 1 - 50 marks

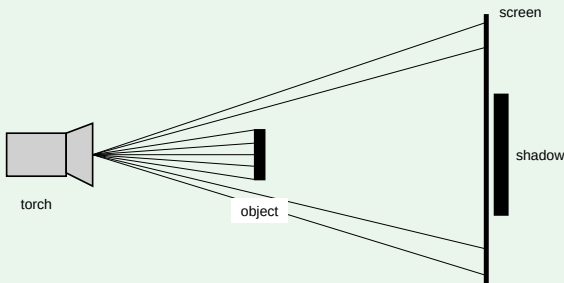
Marking principles

- Award each mark independently. Marks in the mark scheme are all 1-mark points unless shown otherwise.
- **Accept** = a correct alternative that must be credited. **Reject** = an answer that must not be credited. **Ignore** = extra information that is neither credited nor penalised.
- Spelling must be recognisable as the correct scientific word. Phonetic spelling is accepted where the meaning is clear.
- Use a tick for a correct response and a cross for an incorrect one. Where a question asks for one answer and two are given, mark the first unless one contradicts the other.

Q	Question	Answer	Marks	Guide (partial credit and guidance)
1	Complete the sentences using words from the list: cutting, grinding, tearing . Each word can be used once. Incisors are used for food. Canines are used for food. Molars are used for food.	incisors: cutting canines: tearing molars: grinding	1 + 1 + 1	Award 1 mark for each correct word in the correct sentence.
2	Give one way to keep your teeth healthy.	brush teeth (twice a day) / eat less sugary food or drink / visit the dentist / use toothpaste with fluoride	1	Accept any sensible way. Reject "clean your teeth" with no method given.
3	The diagram shows a plant. 			
3	Write the name of each part. Choose words from the list. flower leaf root stem	A flower B leaf C stem D root	1 + 1 + 1 + 1	Accept roots. Award 1 mark for each correct name.
4	Look at the plant in question 3.			
4(a)	Which letter shows the part that takes in water from the soil?	D	1	Accept root or roots if the letter is also correct.

Q	Question	Answer	Marks	Guide (partial credit and guidance)
4(b)	Give one thing, other than water, that a plant needs to grow well.	light / sunlight / air / carbon dioxide / warmth / space / nutrients (minerals)	1	Reject "food" and "soil" on their own.
5	Here is a food chain. grass → grasshopper → frog → snake			
5(a)	Which living thing in the food chain is the producer ?	grass	1	The producer makes its own food and is at the start of the chain.
5(b)	Which animal is the predator of the frog?	snake	1	The predator is the animal that eats the frog.
5(c)	What does an arrow in a food chain mean?	is eaten by / energy goes to / food goes to the next animal	1	Accept "gives energy to". Reject "turns into" or "goes to" on its own.
6	Look at the food chain in question 5. All the frogs leave the area.			
6(a)	What happens to the number of grasshoppers?	it increases / goes up	1	Accept gets bigger / more grasshoppers.
6(b)	Give a reason for your answer to part (a).	fewer grasshoppers are eaten / nothing eats them / no predators of grasshoppers (from the frogs)	1	Must link to being eaten. Reject "they have more food" unless eaten idea also present.
7(a)	What is a habitat?	the place where a plant or animal lives	1	Accept "where something lives".
7(b)	Give one way a camel is adapted to live in a hot desert.	stores fat in its hump / can go a long time without water / wide feet do not sink in sand / long eyelashes keep out sand	1	Accept any correct adaptation.
8(a)	Give one way a polar bear is adapted to live in a very cold place.	thick fur / layer of fat (blubber) / white fur for camouflage	1	Accept any correct adaptation.
8(b)	A cactus has spines instead of large leaves. Suggest how this helps the cactus to survive in the desert.	less water is lost / spines stop animals eating it	1	Accept any one correct idea.
9	Complete the table. Write solid, liquid or gas in each box. 1. keeps its own shape and its own volume 2. flows and takes the shape of its container, but its volume stays the same 3. spreads out to fill its container and can be squashed	solid liquid gas	1 + 1 + 1	Top to bottom. Award 1 mark for each correct row.
10(a)	Water in a puddle slowly changes into water vapour. What is this change called?	evaporation (evaporating)	1	Reject boiling.

Q	Question	Answer	Marks	Guide (partial credit and guidance)
10(b)	Water vapour touches a cold window and turns into drops of water. What is this change called?	condensation (condensing)	1	A gas changing to a liquid.
10(c)	What is the name of the change when a solid turns into a liquid?	melting	1	Accept melts.
11	Amira wants to find out how the place affects how fast a wet cloth dries. She hangs three identical wet cloths in three different places. She measures how long each cloth takes to dry. Results: A, warm and windy, 25 minutes. B, warm, no wind, 40 minutes. C, cool, no wind, 90 minutes.			
11(a)	Which place makes the cloth dry fastest?	A	1	Accept warm and windy.
11(b)	Which two places should Amira compare to find out the effect of temperature only?	B and C	1	Both needed, either order. Only the temperature changes between B and C.
11(c)	Give one thing Amira must keep the same to make it a fair test.	size of cloth / type of cloth / amount of water on the cloth / how wet the cloths are at the start	1	Reject "the place", "the time" or "the temperature".
12	Look at Amira's results in question 11.			
12(a)	Describe what the results show.	cloths dry faster when it is warmer and/or windy (slower when cool and still)	1	Accept any correct pattern linking warmth or wind to faster drying.
12(b)	Name a piece of equipment Amira could use to measure the time.	stopwatch / timer / clock	1	Accept watch.
12(c)	Amira repeats the investigation. Why is this a good idea?	to check the results / to make the results more reliable / to check for mistakes	1	Reject "to get more results" on its own.
13	The diagram shows an electrical circuit. 			
13(a)	What is part X called?	switch	1	It opens and closes the circuit.
13(b)	Is the bulb lit when the circuit is as shown? Tick one box.	No	1	Tick in the "No" box only.
13(c)	Explain your answer to part (b).	there is a gap in the circuit / the switch is open / the circuit is not complete	1	Accept "electricity cannot flow". Reject "there is no battery".
14(a)	Circle the material that is the best electrical conductor.	copper	1	Circle on copper only.

Q	Question	Answer	Marks	Guide (partial credit and guidance)
14(b)	The copper wires in a lamp cable are covered in plastic. Why is plastic used?	plastic is an electrical insulator / stops electricity passing through / protects people from electric shock	1	Accept "it is an insulator". Reject "plastic is cheap".
15(a)	Complete the sentence. Sounds are made when objects	vibrate	1	Accept shake / move backwards and forwards quickly.
15(b)	A guitar string makes a low sound. Give one way to make the sound higher.	tighten the string / use a shorter string / use a thinner string	1	Reject "pluck harder".
16(a)	Marta sees lightning. A few seconds later she hears thunder. Why does she hear the thunder after she sees the lightning?	light travels faster than sound	1	Accept sound travels slower than light.
16(b)	A drum is hit harder. What happens to the sound?	it is louder	1	Accept bigger vibrations / greater volume.
16(c)	Give one way to make a noisy machine quieter for people nearby.	cover it with sound-absorbing material / wear ear defenders / put it in a box or room with thick walls / move it further away	1	Accept any sensible way of reducing noise.
17	Jamal shines a torch at an object. The object makes a shadow on the screen. 			
17(a)	Explain how the shadow is made.	light cannot pass through the object / the object blocks the light	1	Accept "the light is blocked".
17(b)	What does this show about the way light travels?	light travels in straight lines	1	The rays are not bent around the object.
17(c)	Jamal moves the object closer to the torch. What happens to the size of the shadow?	it gets bigger / larger	1	The shadow grows as the object nears the light source.
18(a)	Jamal wants the darkest possible shadow. Circle the best material to use for the object.	thick card	1	Circle on thick card only.
18(b)	Name one light source.	Sun / lamp / candle / torch / fire / star	1	Reject Moon, mirror.

Q	Question	Answer	Marks	Guide (partial credit and guidance)
19(a)	How long does it take the Earth to spin once on its axis?	24 hours / 1 day	1	One full spin is one day.
19(b)	Why does the Sun seem to move across the sky during the day?	because the Earth spins / rotates	1	Reject "the Sun goes round the Earth".
20(a)	Explain why it is night in some parts of the Earth while it is day in other parts.	the part of the Earth that is night is facing away from the Sun (the Sun cannot light that side)	1	Accept "the Earth is spinning so one side is in shadow".
20(b)	A girl measures her shadow at 8 a.m. and at 12 noon. At which time is her shadow shorter?	12 noon / midday	1	The Sun is highest in the sky at midday.
	Total		50	

Paper blueprint (generated alongside the paper)

Every question is tagged to a strand and topic so teachers can check coverage before printing.

Q	Strand	Topic	Marks
1	Biology	Humans: types of teeth	3
2	Biology	Humans: keeping teeth healthy	1
3	Biology	Plants: parts of a plant	4
4	Biology	Plants: water uptake and what plants need	2
5	Biology	Food chains: producers, predators, arrows	3
6	Biology	Food chains: changes in numbers	2
7	Biology	Habitats and adaptation: habitat, camel	2
8	Biology	Habitats and adaptation: polar bear, cactus	2
9	Chemistry	Materials: solids, liquids and gases	3
10	Chemistry	Materials: changes of state	3
11	Scientific enquiry	Fair tests and results: evaporation (drying)	3
12	Scientific enquiry	Describing patterns, measuring time, reliability	3
13	Physics	Electricity: simple circuits	3
14	Physics	Electricity: conductors and insulators	2
15	Physics	Sound: vibration and pitch	2
16	Physics	Sound: speed, loudness and reducing noise	3
17	Physics	Light: how shadows form	3
18	Physics	Light: opaque materials and light sources	2
19	Earth and space	Earth spinning: day length and the Sun's apparent movement	2
20	Earth and space	Day and night; shadow length	2

Strand	Marks	% of paper
Biology	19	38%
Chemistry	6	12%
Physics	15	30%
Earth and space	4	8%
Scientific enquiry	6	12%
Total	50	100%