



Cambridge Primary Checkpoint

SCIENCE

0097/02

Paper 2

October 2025

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at a Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

This document has **16** pages. Any blank pages are indicated.

General guidelines on marking

Many descriptive answers can be expressed in a variety of ways. Professional judgement can be used in these cases, providing it matches the marking points and further information in the mark scheme.

Answers may have words spelt incorrectly. Credit is normally given for phonetically correct answers, unless the word has a scientifically different meaning. For example, where the answer should be antennae, credit will be given for antenna but not for anthen (too close to anther).

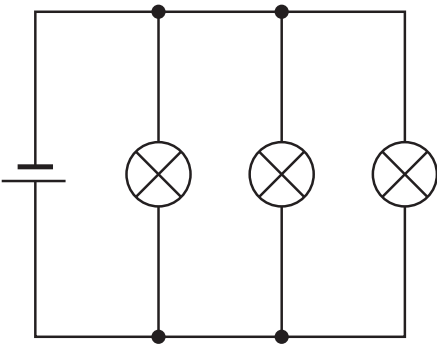
Only the science is being assessed so answers do not need to be grammatically correct. Significant figures will be indicated in the question or in the mark scheme.
Unless specified all marking points are independent.

Annotations and abbreviations

/ or	alternate responses for the same marking point
() brackets	the words or units in brackets do not need to be stated, for example, (recycles or releases or provides) minerals = minerals scores the mark
<u>Underline</u>	exact word is required
Accept	an acceptable response
Do not accept	indicates an incorrect response that would contradict another otherwise correct alternative
Ignore	indicates an irrelevant answer that is not creditworthy. Full marks can still be achieved even with answers that are ignored.
Note	provides extra information when necessary
ecf	error carried forward; marks are awarded if an incorrect response has been carried forward from earlier working, provided the subsequent working is correct
ora	or reverse argument; for example, as mass increases, volume increases could be written as mass decreases, volume decreases

Question	Answer	Marks	Further Information
1(a)	respiratory oxygen	2	each correct answer = 1 mark Ignore gas exchange or breathing or respiration Accept O ₂ or O ₂ ² Do not accept other gases, e.g. nitrogen or carbon dioxide
1(b)	(idea that) it is a defence mechanism	1	Note throughout the question: Accept viruses or germs or pathogens or harmful organisms or disease(s) or infection for bacteria Accept dirt or harmful substances or microplastics for dust Accept description, e.g. it traps / sticks to / attaches to / collects bacteria/dust or defends itself from bacteria/dust or kills bacteria Accept to protect (the lungs) from bacteria/dust or to stop/block/prevent bacteria/dust (from entering)

Question	Answer	Marks	Further Information
2(a)	state	1	Accept any indication of the correct answer, e.g. ticking or underlining, but answer line takes precedence
2(b)	eight particles inside the container particles not touching and in a random arrangement	2	each correct answer = 1 mark

Question	Answer	Marks	Further Information																		
3(a)	<table><thead><tr><th>type of circuit</th><th>number of lamps</th><th>brightness of lamps</th></tr></thead><tbody><tr><td>(series)</td><td>(1)</td><td>(very bright)</td></tr><tr><td>(series)</td><td>2</td><td>bright</td></tr><tr><td>(series)</td><td>3</td><td>dim / not bright</td></tr><tr><td>(parallel)</td><td>2</td><td>very bright</td></tr><tr><td>(parallel)</td><td>(3)</td><td>(very bright)</td></tr></tbody></table>	type of circuit	number of lamps	brightness of lamps	(series)	(1)	(very bright)	(series)	2	bright	(series)	3	dim / not bright	(parallel)	2	very bright	(parallel)	(3)	(very bright)	2	three rows correct = 2 marks one or two rows correct = 1 mark Accept rows two and three reversed Accept other comparisons, e.g. 'bit bright' for dim
type of circuit	number of lamps	brightness of lamps																			
(series)	(1)	(very bright)																			
(series)	2	bright																			
(series)	3	dim / not bright																			
(parallel)	2	very bright																			
(parallel)	(3)	(very bright)																			
3(b)	lamp(s) hot	1	both needed in correct order for the mark Accept (light) bulb(s) or wire or cable or cell or circuit Ignore just 'light(s)'																		
3(c)		1	note connectors/dots not required Accept parallel circuit with just two branches and two lamps in one branch and one lamp in the other branch.																		

Question	Answer	Marks	Further Information
4(a)	full moon	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
4(b)	G B E	1	all correct for the mark

Question	Answer	Marks	Further Information
5(a)	 Diagram A: An egg with the bottom half shaded grey. Diagram C: An egg with the top half shaded grey.	2	each correct diagram = 1 mark Accept A with more air than B or all air Accept C with less air than B or no air note if both models empty then 0 marks (NR assumed)
5(b)	shape	1	Accept ideas about changing the shape, e.g. flattening the object Accept higher level answers, e.g. volume or density (of object) or density (of water) or surface area or size or type of material or how mass/weight is distributed or amount of salt in water or type of liquid/water Ignore mass or matter or weight or amount of air/liquid they contain or hollow or buoyancy or upthrust or gravity or the type/form of egg or structure or freshness of the egg or just 'the liquid/water' (in the beaker) or the amount of water or the amount of air in the water or different objects
Question	Answer	Marks	Further Information
6	melting ice	1	more than one answer ticked = 0 marks Accept any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence

Question	Answer	Marks	Further Information
7	any two from refraction (idea that) light/ray changes direction when it travels from one medium to another medium	2	each correct answer = 1 mark Accept light/ray bends note as extra marking points: Accept the eye/fish/brain think that the light/ray is straight Accept it changes speed or slows down or speeds up

Question	Answer	Marks	Further Information
8(a)	independent variable (type of) material or (type of) soil control mass or amount or 10 g	2	each correct answer = 1 mark Accept sand and clay and mud Accept 10 g of sand or 10 g of clay or 10 g of mud Accept time or 24 hours or how hard it is pushed or who does the pushing or how hard they hit the sediment with the spoon or how wet the material is or same amount of water added to each material
8(b)	heating	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
8(c)	melts or becomes molten or turns into magma/lava and (then) cools or solidifies or turns to solid or crystallises	1	Ignore heat or pressure Accept freezes

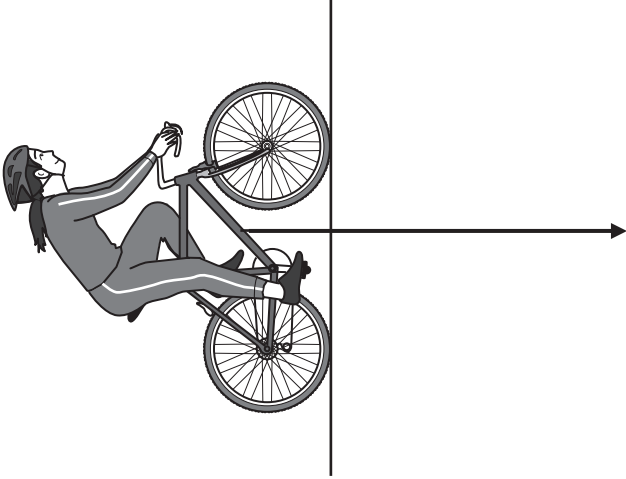
Question	Answer	Marks	Further Information
9(a)	plant(s) → koala → eagle or plant(s) → koala → dingo	1	correct order and arrows pointing in the correct direction for the mark
9(b)	herbivore consumer	2	each correct answer = 1 mark Accept one circle around consumer and herbivore three circled two correct = 1 mark three circled one correct = 0 marks four or more circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
9(c)	sun or sunlight	1	Accept light or solar Ignore heat Do not accept additional answers, e.g. water or carbon dioxide or nutrients or plants

Question	Answer	Marks	Further Information
10(a)	brown	1	Do not accept any other colours
10(b)	(idea that) soil is made up of large particles or there are large gaps (between the particles)	1	Accept alternative wording for particles, e.g. grains or lumps or molecules Accept alternative wording for gaps, e.g. space or air Accept descriptions, e.g. lots of gaps or particles are spaced out

Question	Answer	Marks	Further Information
11(a)	dissolving	1	Accept variations of dissolving, e.g. dissolves Ignore solid turns to liquid
11(b)	idea of <u>particles</u> of solid spread (out through water) or <u>particles</u> spread through the water	1	Accept answers in terms of the solid <u>particles</u> , e.g. solid <u>particles</u> are spaced (out) or <u>particles</u> of solid are surrounded by water Accept answers that imply that it is the solid <u>particles</u> that are moving in the water/solvent/liquid , e.g. <u>particles</u> went into the spaces of the solvent Accept (solid and water) <u>particles</u> mix or <u>particles</u> collide (with each other)

11(c)	<u>particles</u> are moving fast(er) or <u>particles</u> have more energy	1	Accept idea of particles moving faster, e.g. <u>particles spread (out) faster</u> or <u>particles mix quicker</u> Accept <u>particles</u> gain energy or <u>particles</u> have lots of energy Ignore particles gain heat or particles dissolve faster or particles disappear faster Ignore particles have energy or particles vibrate faster Ignore (solid particles) dissolve or expanded or breakdown or breakup or disintegrate or break bonds (with each other) Do not accept answers referring to melting
11(d)	34 (°C)	1	

Question	Answer	Marks	Further Information
12(a)	moves in direction B force B is 75 (N) more than force A / ora	2	note check diagram for answers but answer lines take precedence each correct answer = 1 mark Accept cyclist moves forward or moves to the right or goes to the front or towards 150 (N) or being pulled back but moves forwards Accept 150 (N) is larger than 75 (N) or B is greater than A or push/forward force is bigger than friction / air resistance or 150 (N) forward but only 75 (N) backward or the difference is 75 (N) or the arrow for B is longer than arrow for A Accept more power in direction B Ignore the word 'weight' Ignore just force B is 150 (N) and force A is 75 (N) or more pressure in direction B Accept as an extra marking point (cyclist is) getting faster or moving quicker Ignore moving (very) fast

12(b)	force and mass	1	both answers correct in the correct order for the mark Accept weight or named force, e.g. gravity or Newton for force Accept kilogram for mass
12(c)		1	note arrow must be: • arrow pointing approximately vertically downwards anywhere • be longer than arrow B

Question	Answer	Marks	Further Information
13(a)	slower lower	2	each correct answer = 1 mark
13(b)	bubbles process is happening throughout the water	2	each correct answer = 1 mark Ignore fizzing Accept the process happens everywhere in the water or process is below the surface (of the water) Ignore just 'process is in the water' Ignore evaporation or smoke note for 2 marks Accept bubbles are throughout the water or bubbles from the bottom Accept as an extra marking points Accept temperature is 100 °C or has reached boiling point or temperature remains constant or boiling happens at a certain temperature Accept (idea of) steam or (water) vapour or gas

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