



Cambridge Primary Checkpoint

SCIENCE

0097/01

Paper 1

April 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 **18** pages.

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.

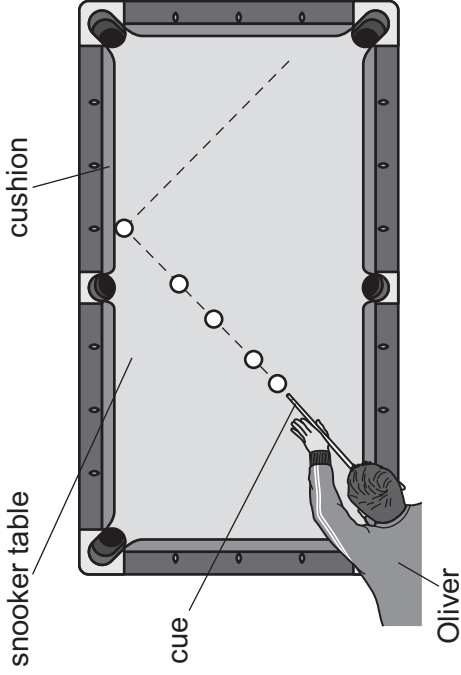
Unless specified all marking points are independent.

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)	any one from bacteria parasites fungi	1	Accept pathogen or protozoa Ignore insects, e.g. mosquito or germs or virus or named disease Ignore method of transmission, e.g. coughing
1(b)	(produces) mucus	1	Accept nasal hair or nose hair or cilia or ciliated cells Ignore filtered or just 'hair' or sneezing or coughing

Question	Answer	Marks	Further Information
2(a)	(idea that) arrows (only) start from the surface or particles are (only) escaping from the surface	1	Note needs to mention arrow(s) or particle(s) in the answer Accept (idea that) there are no arrows below the surface or no particles are escaping from below the surface or arrows are on the surface Ignore particles are on the surface or particles are evaporating from the surface or particles turn from liquid to gas at the surface or we can't see any particles below the surface or gas particles move outside the liquid
2(b)	boiling has bubbles or evaporation does not have bubbles	1	Accept particles/arrows in boiling are moving in different directions Accept particles/arrows in evaporation are (all) moving upwards or are moving in the same direction Ignore answers where boiling or evaporation are not mentioned, e.g. particles/arrows show different directions Ignore boiling moves everywhere or evaporation moves up or in evaporation the arrows are straight Ignore boiling is faster or evaporation is slower Ignore references to energy or temperature

Question	Answer	Marks	Further Information
3(a)		1	Note line drawn needs to be straight by eye and start from the ball on the top cushion Note mark is for showing reflection on correct side of normal Accept just balls drawn as reflected path in straight line Accept answers drawn on the first diagram, but answers on the second diagram take precedence
3(b)	reflection	1	Accept versions of reflection, e.g. reflect(s) or reflected Accept angle of incidence = angle of reflection Ignore bounces or blocked or change direction or bend
Question	Answer	Marks	Further Information
4	425	1	Accept answers in the inclusive range 400–450

Question	Answer	Marks	Further Information
5	any two from hips widen development of breasts (start of) menstruation height increases quickly or growth spurt body hair	2	each correct answer = 1 mark Accept hips get big or growth of hips Ignore wider waist or curvier body Accept breasts grow Ignore just breasts or chest grows Accept (start) periods or bleeding or loss of blood Accept start releasing eggs Ignore just 'increase in height' or 'grows' Accept pubic hair or armpit hair or facial hair Ignore just 'hair growth' Note as two additional marking points: Accept pimples or acne or oily skin or oily hair Accept body odour or sweat more Ignore voice gets deeper or non-physical changes, e.g. moody

Question	Answer	Marks	Further Information
6(a)	easy to compress	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence
6(b)	any one from mass does not have a fixed volume flows (easily) takes the shape of the container or does not have a fixed shape	1	Accept (light)weight Ignore light Ignore references about particles, e.g. large spaces between particles Accept takes up all the space or fills the space of the container Accept other properties of gases, e.g. low density or poor thermal/electrical conductivity Ignore invisible or compressible or can condense or tasteless or flammable or toxic

Question	Answer	Marks	Further Information										
7	<table><tr><td>diagram</td><td>electrical component</td></tr><tr><td>pipes</td><td>(wires)</td></tr><tr><td>narrow pipe</td><td>(lamp)</td></tr><tr><td>pump</td><td>cell</td></tr><tr><td>tap</td><td>switch</td></tr></table>	diagram	electrical component	pipes	(wires)	narrow pipe	(lamp)	pump	cell	tap	switch	2	each correct answer = 1 mark Accept battery or battery of cells for cell Accept open switch or closed switch for switch
diagram	electrical component												
pipes	(wires)												
narrow pipe	(lamp)												
pump	cell												
tap	switch												

Question	Answer	Marks	Further Information
8	<pre> graph TD igneous["igneous (rock)"] -- erosion --> sediment["sediment"] sediment -- "weathering and erosion" --> sedimentary["sedimentary (rock)"] sedimentary -- "sedimentation" --> sediment sedimentary -- "heat and pressure" --> metamorphic["metamorphic (rock)"] metamorphic -- "melting" --> magma["magma"] magma -- "cooling" --> igneous metamorphic -- "melting" --> igneous magma -- "heat and pressure" --> igneous </pre>	2	all three correct = 2 marks one or two correct = 1 mark Ignore names of rocks, e.g. granite, sandstone Ignore intrusive or extrusive for igneous Do not accept sedimentation or sediment for sedimentary Do not accept metamorphosis or metamorphism for metamorphic

Question	Answer	Marks	Further Information
9(a)	fish and squid	1	both needed in any order for the mark Ignore primary consumers Do not accept additional answers, e.g. penguin
9(b)	any one from penguin fish squid	1	Do not accept additional answers, e.g. seal
9(c)	Sun	1	Accept sunlight Accept light Do not accept additional answers, e.g. tiny animals or water
9(d)	(idea that) the penguin eats krill/animals that have eaten the tiny plant(s) (which contain the toxic substance)	1	Note answer must refer to eating/consuming at least once Accept tiny plants eaten by penguin's prey Do not accept penguins/fish/squid eat the tiny plants

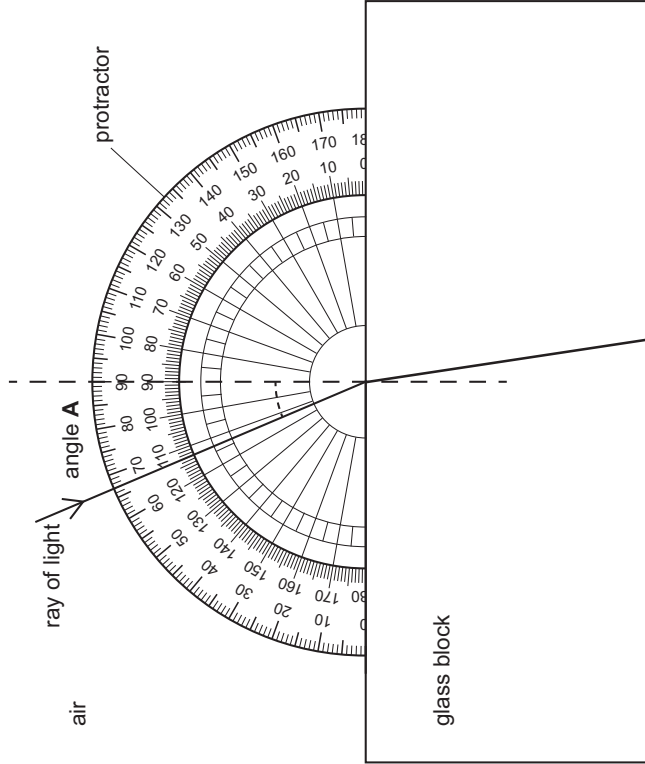
Question	Answer	Marks	Further Information
10(a)	(idea that) mass of sugar dissolved increases	1	Accept (idea that) more sugar dissolves Do not accept more sugar melts
10(b)	(idea that the particles) have more energy or move faster	1	Accept (idea that the sugar/particles) spread out or move apart or scatter or distributes evenly Accept (idea that particles) gain energy or have more kinetic energy or move quick or move fast or collide more Note if answer is about evaporation, then: Accept water/solvent (particles) evaporate faster Do not accept sugar/solution/solute (particles) evaporate (faster) Ignore particles vibrate faster or particles gain more heat or particles dissolve faster or particles mix more easily Do not accept particles melt(ing) or particles break down or particles expand

10(c)	a gas is produced <input type="checkbox"/> it is a physical change <input checked="" type="checkbox"/> it is reversible <input checked="" type="checkbox"/> sugar evaporates <input type="checkbox"/> sugar melts in the water <input type="checkbox"/>	2	each correct tick = 1 mark three ticks and two correct = 1 mark three ticks and one correct = 0 marks four or more ticks = 0 marks Accept any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence
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Question	Answer	Marks	Further Information
11(a)	A and C	1	both needed in any order for the mark
11(b)	<i>series</i> (idea of) one loop or one path(way) <i>parallel</i> (idea of) more than one loop or more than one path(way) or it has branches	2	each correct answer = 1 mark Accept electricity (only) goes to lamps A and C or electricity does not go to lamp B or electricity (only) goes to two lamps or (idea that) middle branch is not working or one direction (of flow) or two lamps are on same wire (idea of one loop) Accept higher level answers about current, e.g. current is the same throughout the circuit or the lamps share the same current Ignore not all the lamps are lit or they share (power/energy/voltage) Accept electricity goes to all the lamps/wires or electricity splits or B gets its own electricity or many directions (of flow) or three lamps are on different wires (idea of more than one loop) Accept higher level answers about current, e.g. current is split between the lamps or B gets its own current Ignore all the lamps are lit or energy/power/voltage will go to all lamps

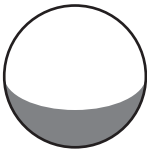
Question	Answer	Marks	Further Information
12	sentence Fossils are found in all rock types. Layers of sand cover a dead animal when a fossil forms. The soft parts of an animal form a fossil. The fossil is seen when the rocks around the fossil erode.	2	all four correct = 2 marks two or three correct = 1 mark one correct = 0 marks Accept any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence

Question	Answer	Marks	Further Information
13(a)	the number of breaths (she takes in for one minute)	1	Accept breathing rate or how fast she breathes or the amount of breaths or breaths she takes in one minute or number of breaths after exercise/sitting
13(b)	increases oxygen and blood or carbon dioxide and air	2	increases = 1 mark oxygen and blood in this order or carbon dioxide and air in this order = 1 mark Accept other ideas of increases, e.g. fast(er)

Question	Answer	Marks	Further Information
14(a)	23(°)	1	Accept answers in the inclusive range 22(°)–24(°) Accept any indication of the answer on the diagram, but answer line takes precedence
14(b)	 The diagram shows a ray of light passing from air into a glass block. A protractor is used to measure angle A. The ray enters the glass block at a 90-degree angle to the boundary. The angle A is the angle of incidence in the air, which is 23 degrees.	1	Accept any straight solid line (by eye) that shows a change in direction in the glass (from the incident ray) at the boundary from air to glass Accept answers drawn on own diagram, but answers on the question diagram take precedence

Question	Answer	Marks	Further Information
15(a)	electrical conductivity	1	Accept electric for electrical Accept variations, e.g. does it conduct electricity Accept variations, e.g. does it insulate electricity Ignore just part of the answer, e.g. just 'conductivity' or just 'electricity' or just 'insulator' Ignore descriptions, e.g. does it let electricity flow through it
15(b)	(idea that) the lamp lights	1	Accept bulb for lamp Accept (idea that for an electrical insulator) the lamp does not light Ignore will it work or will the circuit work? Do not accept contradictions within this answer to (b), e.g. if the substance is an insulator the lamp will light or if the substance is a conductor the lamp will not light

15(c)	any one from no bubbles produced or no gas produced no colour change no new substance formed	1	Accept there is not a product or nothing is produced Ignore no new solution is formed or the substance does not change or there is no chemical reaction Accept no change in temperature Accept higher level answers that describe why there is no chemical reaction, e.g. no precipitate formed Ignore it can be reversed or it is irreversible or you can still turn off the lamp or it is a physical change or it is not a physical change
Question	Answer	Marks	Further Information
16	Mass is measured in kilograms.	1	Accept any indication of the correct answer, e.g. circling or underlining, but ticking takes precedence more than one tick = 0 marks

Question	Answer	Marks	Further Information
17	left-hand side of circle shaded as an approximate crescent shape 	1	Note there must be shading Accept any indication of the correct answer, e.g. drawing under the question, but drawing in the table takes precedence

Question	Answer	Marks	Further Information
18	any two from does the rock have layers? does the rock have crystals? does the rock have grains? does the rock contain fossils/shells? does the rock scratch easily? is the rock rough? or is the rock smooth? is the rock shiny? or is the rock dull? Is the rock hard? or is the rock soft? references to colour with yes or no answers, e.g. is it black?	2	each correct answer = 1 mark Accept answers anywhere on the answer lines Note the questions should have a yes or no answer, e.g. how well can you see the crystals? = 0 marks does it have layers or not? = 0 marks Accept bands or cracks for layers Accept spots or particles or small rocks or holes or sediments for grains Accept does it contain organic matter? Accept is it hard/easy to break? or does it crumble/wear away easily? Ignore questions that are not linked to a possible observation, e.g. is it a sedimentary rock? or is it made by cooled down lava/magma?