



Cambridge Primary Checkpoint

SCIENCE

0097/02

Paper 2

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.

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.

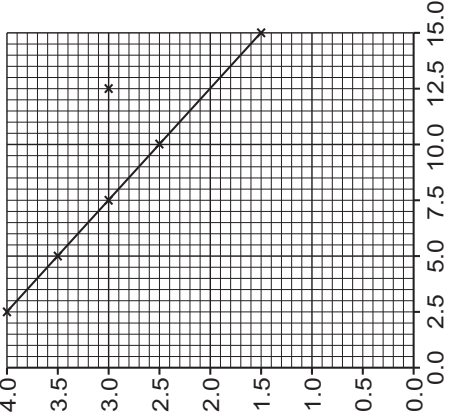
Annotations and abbreviations

/ 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)	heart	1	Accept any indication of the correct answer on the diagram, but answer line takes precedence
1(b)	pumps blood (around the body) or circulates blood (around the body)	1	
1(c)	artery or arteries vein(s)	2	each correct answer in any order = 1 mark Accept named artery, e.g. aorta Accept named vein, e.g. vena cava Accept capillary
1(d)	A contains the highest percentage/oxygen	2	each correct answer = 1 mark Note answer must be comparative

Question	Answer	Marks	Further Information
2(a)	temperature at which solid becomes a liquid	2	each correct answer = 1 mark Ignore °C Ignore ice turns to (liquid) water
2(b)	ethanol	1	Accept any indication of the correct answer in the table, but answer line takes precedence
2(c)	(boiling point) increases	1	Accept higher (boiling point) Ignore just 'boiling point changes'

Question	Answer	Marks	Further Information
3(a)	(idea) there are clouds	1	
3(b)	Diagram A: Waxing crescent moon (right side lit). Diagram B: First quarter moon (right half lit). Diagram C: Waning gibbous moon (left side lit, more than half).	2	all three correct = 2 marks one or two correct = 1 mark Ignore answers with no shading
3(c)	one month	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. ticking or underlining, but circling takes precedence

Question	Answer	Marks	Further Information
4(a)	12.5 (g) 3.0 (cm)	1	both answers correct for the mark Accept any indication of the correct answer in the table, but answer line takes precedence
4(b)		2	all three correct plots = 1 mark appropriate straight line of best fit using the points (plotted) = 1 mark
4(c)	(As the mass of sand in the containers increases) the distance (above the water) decreases.	1	Accept the container sinks more or the container floats less

Question	Answer	Marks	Further Information
4(d)	(I think Mia must use a container with) 22.5 (g of sand). (This will sink because) the mass is higher than the mass of water (displaced) or weight/force is greater than upthrust	2	each idea = 1 mark Accept any number above 15(g) Ignore just ‘more (g of sand)’ Note answer must be comparative Note answer must be comparative Accept gravity for force Accept (idea of) more weight/force downwards than (force) upwards or weight/force more than weight/force of water Accept higher level answers, e.g. the container is denser than water

Question	Answer	Marks	Further Information
5(a)	(the type of) exercise	1	
5(b)	(idea to) allow breathing (rate to return) to be normal/resting	1	Accept so his breathing is the same each time (he starts a different exercise) or if he doesn't rest his breathing rate is already high for the next exercise or to see/compare the change in breathing (before and after each exercise) Ignore just 'so his breathing rate can decrease' or 'to control his breathing rate' Ignore references to heart rate
5(c)	oxygen	1	Accept O₂ Ignore air or energy Do not accept food or blood

Question	Answer	Marks	Further Information
6(a)	A, C, D and F	1	all four correct in any order for the mark Accept any indication of the correct answer in the table, but answer line takes precedence
6(b)	(Group 1) have low(er) melting points (Group 2) have high(er) melting points	1	both answers correct for the mark Accept any suitable temperature limit that will sort the substances in the required way, e.g. (Group 1) have a melting point less than 100 (°C) (Group 2) have melting point higher than 100 (°C) Ignore just by their melting point

Question	Answer	Marks	Further Information
7(a)	direction	2	each correct answer = 1 mark Accept higher level answers, e.g. speed Ignore medium or appearance Ignore bends
	refraction		
7(b)	direction	2	each correct answer = 1 mark Ignore medium or appearance Ignore bounces
	reflection		
7(c)	(idea that) the light ray will remain straight	1	Accept the light ray will not bend or the light will not refract Accept higher level answers about speed , e.g. faster than the speed it was in water or travels at same speed it travelled in air Accept higher level answers about refraction as it passes through the glass , e.g. refracts when it goes into the glass Ignore nothing or stays the same

Question	Answer	Marks	Further Information
8(a)	erosion	1	more than one answer circled = 0 marks Accept any indication of the correct answer, e.g. underlining or ticking, but circling takes precedence
8(b)	melting	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)	(sedimentation) (small pieces of) rock settle or (small pieces of) rock are deposited	2	each correct answer = 1 mark Accept sediment for small pieces of rock Accept named sediments, e.g. sand Accept sediments form layers or sediments build up Ignore sediments form sedimentary rock Ignore references to erosion or weathering or type of rock, e.g. it turns into an igneous rock Do not accept references to erosion or weathering

Question	Answer	Marks	Further Information
9(a)	bacteria or parasite	1	Accept viruses or Plasmodium or protozoa Accept a named example of a bacterium or virus or parasite, e.g. (parasitic) worms or COVID-19 Ignore insects or named insects or animals or named animals Ignore named diseases, e.g. measles or ringworm Ignore fungi or named fungi, e.g. mould or yeast
9(b)	respiratory (system)	1	Accept reproductive (system) or digestive (system)

Question	Answer	Marks	Further Information
10(a)	condensation	1	Accept condenses
10(b)	involves changing liquid to gas	1	Accept a named liquid changing to a gas, e.g. water changes to a gas or water changes to water vapour Accept require energy
10(c)	any two from boiling takes place at a certain/one temperature or evaporation takes place at all/different/any temperatures evaporation (only) happens at the surface (of a liquid) or boiling happens everywhere (in a liquid) boiling produces bubbles or evaporation does not produce bubbles boiling is a fast process or evaporation is a slow process	2	each correct answer any order = 1 mark Accept boiling takes place at boiling point or evaporation takes place at temperatures below boiling (point) Ignore boiling takes place at high temperatures or evaporation takes place at low temperatures Accept boiling takes place under the surface or in evaporation only the top layer gains energy

BLANK PAGE