

YEAR 7 · SCIENCE

Mock Paper: Mark Scheme

Total: 50 marks. For marking at home.

A note before marking

This is my mark scheme, not the school's. Use it as a guide. Reward any correct answer, even if the wording differs. Do not take marks off for spelling. In calculations, give the mark for correct working even if the final number is slightly off.

Section A · Working Scientifically

10 marks

1. Independent: the mass hung on the spring [1]. Dependent: how far the spring stretches [1]. Control (any one): same spring, same starting length, same way of measuring [1]. [3]
2. So you know which variable caused the result [1]. If two changed at once, you could not tell which made the difference [1]. [2]
3. (a) 7.0 cm is the anomaly [1]. (b) $(4.0 + 4.2) \div 2 [1] = 4.1 \text{ cm} [1]$. [3]
4. (a) A line graph [1]. (b) Label both axes, with units [1]. [2]

Section B · Biology

14 marks

5. (a) The nucleus [1]. (b) The mitochondria [1]. [2]
6. Any two: cell wall, chloroplast, large vacuole [1 each]. [2]
7. Diffusion is particles spreading from where there are many to where there are few, until evenly spread [1]. Example: oxygen moving from the lungs into the blood [1]. [2]
8. Cell, tissue, organ, organ system, organism. Fully correct [2]; one slip [1]. [2]

9. (a) In the oviduct [1]. (b) In the uterus (womb) [1]. [2]

10. Marked by levels below. Reward: no nucleus so more room for oxygen; [4]
dish shape gives a large surface; this lets oxygen pass in and out quickly; so it
is suited to its job.

Question 10: levels (4 marks)

3 to 4 marks: Two clear features (no nucleus, dish shape) linked to the job of carrying oxygen.

1 to 2 marks: One feature, or features named without linking to the job.

Section C · Chemistry

13 marks

- 11.** Particles are close together in a regular pattern [1], and vibrate on the spot (do not move around) [1]. [2]
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- 12.** (a) Evaporating (or boiling) [1]. (b) Condensing [1]. [2]
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- 13.** (a) An element is made of only one kind of atom [1]. (b) A compound is two or more different elements chemically joined [1]. [2]
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- 14.** Elements: oxygen, gold [1]. Compounds: water, carbon dioxide [1]. [2]
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- 15.** Any two: bubbles of gas, colour change, temperature change, a new substance forms [1 each]. [2]
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- 16.** Melting only changes the state from solid to liquid [1]. It is still water, so no new substance is made [1]. It can be reversed by freezing, so it is a physical change not a chemical reaction [1]. [3]
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Section D · Physics

13 marks

- 17.** (a) Newtons (N) [1]. (b) Any two forces, such as gravity, friction, air resistance, upthrust, magnetism [1 each]. [3]
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- 18.** The forces are balanced [1]. The driving force forwards equals the friction and air resistance backwards, so the speed does not change [1]. [2]
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- 19.** Mass is the amount of matter, measured in kilograms [1]. Weight is the pull of gravity on the object, measured in newtons [1]. [2]
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- 20.** Sound needs a material to travel through [1]. Space is a vacuum with no particles, so sound cannot travel [1]. [2]
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- 21.** Loudness depends on amplitude: a bigger amplitude is louder [1]. Pitch depends on frequency: a higher frequency is a higher pitch [1]. [2]
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22. Light from a source reflects off the book [1] and travels in straight lines [2] into your eyes, so you see it [1].

Adding it up

out of 50

These bands are a rough guide for Year 7, not official grades.

Mark out of 50	Roughly means
40 to 50	Very strong. Secure across all three sciences and the skills.
30 to 39	Strong. Good knowledge, a few gaps to tidy.
20 to 29	Sound. Basics are there; the explain questions need work.
Below 20	Keep building. Start with the skills and the must know pages.

After marking

Look at which section lost the most marks, and go back to that one part only. If the skills questions slipped, fix those first, because they appear in every section of the real paper.