

Planning fair tests and reading data

Grade 6 science (Year 7 · Class 6) · Test answers (mark scheme)

Use these model answers and the marking notes to score your test. Give method marks when the working is correct even if a small arithmetic slip changes the final result.

Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** SEP 3-4

Question 1 Identify the variables (2 marks)

- a. The water temperature.
- b. The time taken for the tablet to dissolve.

Marking: 1 mark each.

Question 2 Write a hypothesis (2 marks)

If the sail is larger, then the boat will travel farther, because the sail catches more wind.

Marking: 1 mark for a testable prediction; 1 mark for a scientific reason.

Question 3 A fair test? (3 marks)

- a. The amount of light (sunny window or dark cupboard).
- b. The plants get different amounts of water (50 mL against 100 mL).
- c. Give both plants the same amount of water, for example 50 mL.

Marking: 1 mark per part.

Question 4 Anomalies and means (3 marks)

- a. 8.9 s.
- b. The student started or stopped the timer late, or the car hit an obstacle.
- c. $(6.2 + 6.0 + 6.1 + 6.3) \div 4 = 24.6 \div 4 = 6.15$ s, about 6.2 s.

Marking: 1 mark per part; accept 6.15 or 6.2.

Question 5 Chart faults (2 marks)

A scale that does not start at zero exaggerates differences between the bars. Uneven steps make bar heights hard to compare and distort the pattern.

Marking: 1 mark for each reason.

Question 6 Germination rate (3 marks)

a. $36 \div 48 \times 100 = 75 \%$. $42 \div 48 \times 100 = 87.5 \%$.

b. $87.5 - 75 = 12.5$ percentage points.

Marking: 1 mark for each percentage; 1 mark for the difference.

Question 7 Why repeat? (2 marks)

Repeating shows whether results are reliable and shows up anomalies. A mean of several readings is a better estimate than a single reading.

Marking: 1 mark for reliability or anomalies; 1 mark for mean being a better estimate.

Question 8 Units and instruments (3 marks)

a. A balance (scale).

b. $2.4 \times 1000 = 2400$ g.

c. $750 \div 1000 = 0.75$ L.

Marking: 1 mark per part.