# 4.3 Working Scientifically: Measuring, Recording and Risk: 10-minute Pack

Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

**Answer ALL questions. Show all your working.**

**1** A pupil records the growth of a bean plant in this table.

| Time after planting | Stem height |
|---|---|
| 3 days | 2.0 cm |
| 6 days | 4 cm |
| 9 days | 7.50 cm |

State two mistakes in how the table has been set out and write corrected column headings.

**(3)**

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**2** Choose the two statements that are measurements rather than observations.

A The solution turned cloudy.
B The rock sample has a mass of 84 g.
C The crystals look shiny.
D The temperature rose by 7°C.

**(2)**


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**3** A pupil counts oxygen bubbles from pondweed in one minute. Trial 4 is an anomaly because the lamp was knocked out of position during that trial.

| Trial | Bubbles per minute |
|---|---|
| 1 | 24 |
| 2 | 26 |
| 3 | 25 |
| 4 | 9 |
| 5 | 25 |

(a) Calculate the mean number of bubbles per minute, leaving out the anomaly.

(b) Explain why the pupil should still write the value 9 in the results table.

**(4)**


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# Mark scheme · 4.3 Working Scientifically: Measuring, Recording and Risk: 10-minute Pack

## Question 1

| | |
|---|---|
| Units are written in every cell instead of once in the column heading. | **B1** |
| The number of decimal places is not consistent (2.0, 4 and 7.50). | **B1** |
| Corrected headings such as Time after planting (days) and Stem height (cm). | **B1** |

Answer: **Units are in the cells, and decimal places are inconsistent. Headings: Time after planting (days); Stem height (cm).**

## Question 2

| | |
|---|---|
| B is a measurement (a number with a unit). | **B1** |
| D is a measurement (a number with a unit). | **B1** |

Answer: **B and D.**

## Question 3

| | |
|---|---|
| 24 + 26 + 25 + 25 = 100. | **M1** |
| Divides by 4, not 5. | **M1** |
| 25 bubbles per minute. | **A1** |
| So the result is not hidden and others can see it was recorded and why it was left out (accept so it can be checked or repeated). | **B1** |

Answer: **(a) 25 bubbles per minute; (b) So the unusual value is kept as a record and can be checked, with the reason it was left out.**


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