Independent and Dependent Variables Worksheet

Scoring guide · one credit per question · review written work against each rubric

Independent and Dependent Variables

Question 1

Choice (2)

The student deliberately changes water temperature.

Question 2

Choice (4)

Final temperature is the measured outcome.

Question 3

For example, use water at the same initial temperature in both trials. Other valid controls include using the same water volume, sugar amount, or sugar particle size.

Question 4

Two factors changed together. Either the temperature or the crystal size, or both, could have affected dissolving time.

Comparing Cooling Cups

Question 5

Choice (1)

Both trials use paper cups and differ only in whether the lid is on.

Question 6

The drop was 12 °C without the lid and 7 °C with it. The reduction is 12 − 7 = 5 °C.

Question 7

Test a foam cup with its lid off and compare it with trial 1, the paper cup with its lid off. Keep the original controlled conditions and measure the temperature drop over 10 minutes.

Question 8

Choice (2)

Repeating both trial conditions shows whether similar results occur across repeated measurements.