

CuriosityQuest

Puzzle Sampler

Quiz kit covering Scientific Method for grades 4-5.

6 puzzles from "Scientific Method" — try them with a pencil.

1

What is the first step of the scientific method?

- A Form a hypothesis
- B Analyze data
- C Ask a question
- D Conduct an experiment

Hint: Think about what you do when you are curious about something.

2

A student writes: 'If plants get more sunlight, then they will grow taller.' What part of the scientific method is this?

- A Research question
- B Hypothesis
- C Conclusion
- D Observation

Hint: Notice the 'if...then' structure — that is a common format for this step.

3

A student grows plants in both sunlight and shade using identical pots, soil, and water amounts. She measures height after two weeks. What is she doing?

- (A) Conducting a controlled experiment
- (B) Reviewing background research
- (C) Writing a hypothesis
- (D) Making an observation only

Hint: She is keeping most things the same and only changing one thing.

4

Two students test whether salt water or plain water makes ice melt faster. They use the same amount of water, same-sized ice cubes, and same room temperature. Student A's results show salt water melts ice

- (A) Salt water melts ice faster, and their results are reliable because they match
- (B) Only Student A's results count because she went first
- (C) The experiment needs to be redone because two people tried it
- (D) Their results are wrong because ice always melts the same way

Hint: When two separate experiments get the same result, what does that tell you?

5

Scientists share their experiment results with other scientists for review before publishing them. Why is this important?

- A It slows down science so fewer mistakes happen
- B It ensures that experiments are kept secret from the public
- C It lets one scientist take credit for another's work
- D Other scientists can check for mistakes and confirm the results are valid

Hint: Would you trust a book that nobody else had checked?

6

In an experiment about paper bridge strength, the dependent variable is the number of pennies the bridge holds. The independent variable is the number of paper folds. What are the controlled variables?

- A The student doing the experiment and the teacher watching
- B The type of paper, width of the bridge, and distance between supports
- C Only the type of paper
- D The number of pennies and the number of folds

Hint: Controlled variables are things you keep the same so they do not affect your results.

1. C — Ask a question

The scientific method begins with asking a question about an observation. Without a question, there is nothing to investigate.

2. B — Hypothesis

This 'if...then' statement is a hypothesis. It predicts the relationship between sunlight (the independent variable) and plant height (the dependent variable).

3. A — Conducting a controlled experiment

By keeping soil, pot size, and water constant while only changing light exposure, the student controls variables and conducts a fair experiment to measure light's effect on growth.

4. A — Salt water melts ice faster, and their results are reliable because they match

When independent experiments yield the same result, it increases confidence in the conclusion. Reproducibility is a key principle of science — it means findings are reliable, not accidental.

5. D — Other scientists can check for mistakes and confirm the results are valid

Peer review is the process where other experts check a scientist's work for errors, faulty logic, or unsupported conclusions. It helps ensure that only reliable science is published.

6. B — The type of paper, width of the bridge, and distance between supports

Controlled variables are factors kept constant so they cannot influence the outcome. Paper type, bridge width, and support distance could all affect bridge strength and must remain the same across trials.