

## Scientific Method Review

1. George's dad was moving cars out of his family's driveway. The driveway was located in strong sunlight. George observed that the family's white car was cooler inside than the family's black car. He wants to do an experiment to see whether color makes a difference in the amount of radiant energy a metal surface absorbs. What should he do next?
  - a. Communicate results
  - b. Plan an experiment
  - c. Analyze data
  - d. Draw conclusions
2. Jessica wants to make a scarf as a gift for each of her friends. She needs to know their favorite color so she can choose fabric to match. What skill will Jessica use to find out the kitchen colors?
  - a. Create a hypothesis
  - b. Form an opinion
  - c. Collect data
  - d. Draw conclusions
3. Juan is doing an experiment to see which type of fertilizer helps plants grow faster. He uses three different types of fertilizer in three separate plants. Everyday day Juan records the height of each plant. Why is it important for Juan to keep records of the progress of his experiment?
  - a. So he can show that he is a good scientist
  - b. So he will know whether the plant gets enough water or not
  - c. So his results can be compared to those doing the same experiment
  - d. So other people can tell if he skipped a day
4. Stephanie and Andrew did the same experiment however, they got different results. What should they do?
  - a. Flip a coin to choose one of the results
  - b. Combine the results
  - c. Do the experiment again
  - d. Ask someone to choose the best results

5. Pablo did an experiment to test how long it took for a cup of ice cubes to melt if the room temperature is 68 degrees Fahrenheit. Megan repeated Pablo's experiment. What is the reason for Megan to repeat Pablo's experiment?
- a. To see whether it takes the same time for only one ice cube to melt
  - b. To be sure Pablo's time is accurate
  - c. To move the ice cubes to different room
  - d. To get the same results
6. Xavier is investigating forces. He attaches a spring scale to a box partially full of dirt. He thinks that friction will keep the box from moving. He pulls on the spring scale. It shows that force is being used, but the box doesn't move. Which of these steps in the scientific method best describe what Xavier is doing?
- a. Organizing and displaying information
  - b. Identifying the variables
  - c. Repeating an experiment to check the results
  - d. Testing a prediction
7. Erica observed the temperature of a 100 mL jar of water as it was freezing. What was Erica doing when she made this chart?

Water Temperature	Time (Hours)
65 F	0
41 F	1
36 F	2
34 F	3
32 F	4

- a. interpreting her data
- b. controlling her variables
- c. drawing conclusions
- d. observing and recording her observations

8. Farah is comparing magnets by counting the number of metal paper clips each magnet picks up. She is thinking that some magnets are stronger than others because the magnets didn't pick up the same number of paper clips. Which of these steps in a scientific method best describes what Farah is doing?
- a. Forming a conclusion
  - b. Repeating an experiment to check results
  - c. Making a prediction
  - d. Organizing and displaying information
9. Marco and his friends are releasing toy cars at the top of a ramp to see how far they will go. They will measure the distance. Then they will repeat this for ramps at different heights. A graph will be created to display the results. Which of these steps in a scientific method best describes what Marco and his friends are doing?
- a. Making a prediction
  - b. Identifying variables for an experiment
  - c. Organizing data from observations
  - d. Repeating an experiment to confirm results
10. Mathew is planning an experiment. Why will his experiment be difficult to draw a valid conclusion?

Setup A: A flowerpot with 50 grams of soil, 5 bean seedlings, 100 mL of water each day, and 8 hours of light each day.
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Setup B: Identical flowerpot with 50 grams of soil, 5 bean seedlings, 200 mL of water each day, and 6 hours of light each day.
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Setup C: Identical flowerpot with 50 grams of soil, 5 bean seedlings, 150 mL of water each day, and 7 hours of light each day.
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- a. He is testing more than one variable
- b. He shouldn't use identical flowerpots
- c. He should use bean seeds instead of bean seedlings
- d. He did not include a prediction

## Answer Key

1. B
2. C
3. C
4. C
5. B
6. D
7. D
8. A
9. C
10. A