

## Section 2

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### Section: Scientific Methods

#### WHAT ARE SCIENTIFIC METHODS?

1. A series of steps followed to solve problems are called \_\_\_\_\_.
2. Scientists often change the number or order of \_\_\_\_\_ during an investigation.

#### ASK A QUESTION

- \_\_\_\_\_ 3. What step helps scientists focus the purpose of an investigation?
  - a. recycling resources
  - b. asking a question
  - c. using observation
  - d. finding a dinosaur bone
- \_\_\_\_\_ 4. Which statement about observations is true?
  - a. They always involve seeing something.
  - b. They must be made at the beginning of an investigation.
  - c. They must be made at the end of an investigation.
  - d. They can be made with any of the senses.
5. Why is it important for observations to be accurate and carefully recorded?

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6. What is a measurement?

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7. Scientist David Gillette visited New Mexico to view \_\_\_\_\_.

#### FORM A HYPOTHESIS

- \_\_\_\_\_ 8. A possible explanation or answer to a question is a(n)
  - a. prediction.
  - b. data.
  - c. variable.
  - d. hypothesis.
- \_\_\_\_\_ 9. A statement in an if-then format is a(n)
  - a. prediction.
  - b. data.
  - c. variable.
  - d. hypothesis.

#### TEST THE HYPOTHESIS

10. Pieces of information gathered through experimentation are called \_\_\_\_\_.
11. A test of only one factor at a time is a(n) \_\_\_\_\_.
12. The one factor changed in a controlled experiment is called a(n) \_\_\_\_\_.

13. How does changing one variable in a controlled experiment help a scientist?

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14. Why must scientists use other methods besides controlled experiments to test a hypothesis?

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15. How can collecting large amounts of data help a scientist test a hypothesis?

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### **ANALYZE THE RESULTS**

\_\_\_\_\_ 16. What is the next step for scientists after they finish their tests?

- a. Make a prediction.
- b. Analyze results.
- c. Communicate results.
- d. Draw a conclusion.

\_\_\_\_\_ 17. What might a scientist use to organize data?

- a. a speech
- b. a photograph
- c. a graph
- d. an experiment

### **DRAW CONCLUSIONS**

\_\_\_\_\_ 18. If a hypothesis is not supported,

- a. the experiments were a waste.
- b. the hypothesis was entirely correct.
- c. scientists still may ask new questions and form new hypotheses.
- d. scientists consider the experiment to be a success.

### **COMMUNICATE RESULTS**

19. What are three ways that scientists can share what they have learned?

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20. Why is sharing information important for scientists?

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21. David Gillette's investigation of the \_\_\_\_\_, one of the largest dinosaurs ever discovered, continues today.