UNIT 1
Benchmark Review

Name _____

Vocabulary Review

Use the terms in the box to complete the sentences.

balance
control
experiment
variable

1. An investigation in which all conditions are controlled is a(n) _____.

2. Jane wants to measure the mass of a rock. The tool she should use is a(n) _____.

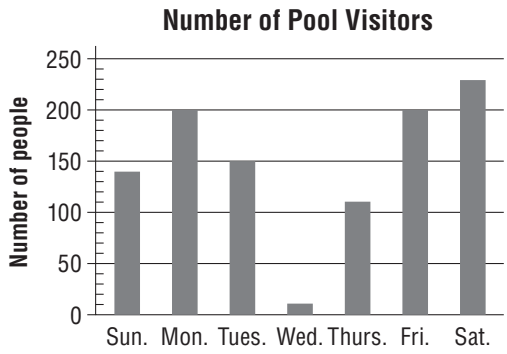
3. Any condition in an experiment that can be changed is a(n) _____.

4. The setup to which you compare all the others in an experiment is the _____.

Science Concepts

Fill in the letter of the choice that best answers the question.

5. Gabrielle counts the number of people who visit the community pool each day for 1 week. She displays her data using a bar graph.



How many more people did Gabrielle observe at the pool on Sunday than on Thursday?

(A) 20
(B) 30
(C) 75
(D) 100

6. Observations are made using our five senses. We can then use those observations to draw conclusions. Which of the following is an example of a conclusion?

(F) "The object is flat."
(G) "The flower smells like mint."
(H) "Crickets chirp to attract mates."
(I) "The food is both sweet and salty."

7. Asa watches his mom rub soap on her finger to help her get a ring unstuck. He thinks that soap must reduce friction. He designs an investigation to test his theory. He pulls a weight across a board and records the force with a spring scale. He then puts soap on the board and pulls the weight again. Which of the following variables is Asa measuring?

   (A) the speed with which the weight is pulled

   (B) the amount of weight being pulled

   (C) the force needed to pull the weight

   (D) the type of surface the weight is being pulled across

8. Erica is learning how to accurately read a thermometer. She places the following thermometer in the sun for 1 hour.

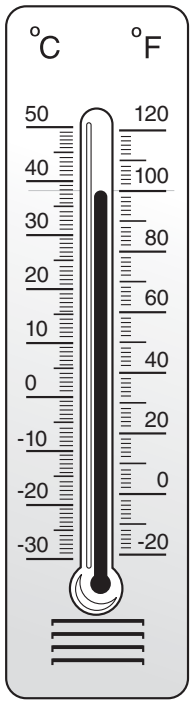
   What temperature does Erica read on the thermometer?

   (F) 38° Celsius

   (G) 100° Celsius

   (H) 38° Fahrenheit

   (I) 105° Fahrenheit



9. Different systems for making measurements use different units. Which system of measurement is generally used by scientists?

   (A) customary

   (B) English

   (C) Imperial

   (D) metric

10. Joshua has been growing plants that receive ½ cup of water two times per week. Now, he wants to see what happens to the plants when the amount of water is reduced, as shown in the chart.

Plant	Amount of water
1	no water
2	½ cup once every two weeks
3	½ cup once per week
4	½ cup two times per week

    Which plant is the control?

    (F) 1

    (G) 3

    (H) 2

    (I) 4

11. Scientists want to determine if walls that are painted a certain color will raise a person's blood pressure. They plan to set up four rooms. Which variable should change in each room?

    (A) the color used

    (B) the type of room used

    (C) the instruments used to test the blood pressure

    (D) the amount of time the person spends in the room

Name _____

12. Sandy observes the phases of the moon during a two-week period. She sketches and labels the phases and shares her drawings with the class. Which statement best describes Sandy's investigation?

(F) It involves modeling.

(G) It involves experimentation.

(H) It involves repeated observations.

(I) It involves both experimentation and repeated observations.

13. Scientists include controls in their experiments. Why is a control important?

(A) It helps scientists share results.

(B) It helps scientists form their first hypothesis.

(C) It helps scientists record their repeated observations.

(D) It helps scientists compare their results to a standard.

14. A teacher writes the following note on a student's experimental design: "You did not identify and control variables." Why is it important to identify and control variables?

(F) because a scientist must observe data

(G) because a scientist must form a hypothesis

(H) because a scientist must know which variable causes change

(I) because a scientist must know which variable to use for making a model

15. Michael rides a bike made by Company A. Luis rides a bike made by Company B. How can Michael and Luis determine in a scientific way whose bike has tires that last longer?

(A) Read information about the tires from each manufacturer.

(B) Ask ten classmates who ride each bike which tires last longer.

(C) Have each student ride their own bike for 25 days, then compare the tires.

(D) Use a machine to test the bikes in the same way for 25 days, then compare the tires.

16. A doctor says that drinking two glasses of milk in the morning will give students more energy. Which of the following would be good scientific evidence for or against the doctor's claim?

(F) a brochure from the doctor stating the benefits of milk

(G) data from scientific investigations about drinking milk in the morning

(H) a TV advertisement that drinking milk in the morning gives people plenty of energy

(I) statements from five people about how drinking milk in the morning gives them energy

17. When Andrew conducts an investigation, he repeats the investigation several times. Why does Andrew do this?

(A) to create inventions

(B) to get consistent results

(C) to do the work very safely

(D) to be sure the work is correct

Apply Inquiry and Review the Big Idea

Write the answers to these questions.

18. Aaliya knows that sliced apples turn brown when left out in the open air. She also knows that pouring certain liquids on them will keep this from happening. Aaliya thinks that water, ginger ale, or lemon juice may do the trick. How could Aaliya set up an experiment to gather evidence to support a claim about these liquids? What are the variables? What will she use as a control?

19. Yamil is observing a fossil insect preserved in amber.

    What can Yamil learn about the fossil through observation? What tools might she use to make her observations?