| Directed Reading B *continued*

Match the correct description with the correct term. Write the letter in the space provided.

_____ **8.** a measure of the size of an object or region in three-dimensional space

_____ **9.** the ratio of the mass of a substance to the volume of the substance

_____ **10.** a measure of how hot or cold something is

_____ **11.** a measure of the amount of matter in an object

a. mass

b. temperature

c. volume

d. density

Match the correct description with the correct term. Write the letter in the space provided.

_____ **12.** the basic SI unit of length

_____ **13.** the basic SI unit of mass

_____ **14.** a unit used to express liquid volume

_____ **15.** a unit used to express the volume of larger solid objects

a. kilogram

b. liter

c. meter

d. cubic meter

16. A cubic meter is equal to 1,000 _____.

17. What unit of measure is used to express the volume of smaller objects?

_____

_____

18. How is density calculated?

_____

_____

_____

19. Name three units that are used to measure temperature.

_____

_____

_____

_____

MODELS IN SCIENCE

_____ **20.** What is a pattern, plan, representation, or description designed to show the structure or workings of an object, system, or concept called?
- **a.** a test
- **b.** a model
- **c.** a hypothesis
- **d.** a scale

_____ **21.** Which of the following uses something familiar to help you understand something that is not familiar?
- **a.** a model
- **b.** a tool
- **c.** data
- **d.** a test

22. List the three common types of scientific models.

_____

_____

_____

23. List three examples of a physical model.

_____

_____

_____

24. What type of model tries to put many ideas together to explain or summarize something?

_____

_____

_____

_____

Match the correct description with the correct type of model. Write the letter in the space provided.

_____ **25.** used to predict the weather

_____ **26.** used to explain why the universe seems to be expanding

_____ **27.** used to help understand how a real space shuttle blasts off into space

a. conceptual model

b. physical model

c. mathematical model

28. What can happen if a mathematical model contains a wrong value for a single variable?

_____

_____

_____

29. What are models often used to represent?

_____

_____

30. Give one example of a model that is used to learn about things that cannot be seen.

_____

_____

31. Why is a model always limited in its usefulness?

_____

_____

USING MODELS FOR SCIENTIFIC PROGRESS

_____ **32.** Which of the following is NOT a way that models are used by scientists?
   a. Models are used to communicate difficult information.
   b. Models can make a molecule easier to visualize.
   c. Models are used to validate inaccurate data.
   d. Models can be used to summarize new information.

_____ **33.** A system of ideas that explains many related observations and is supported by a large amount of scientific evidence is called a(n)
   a. model.   **c.** variable.
   b. law.   **d.** theory.

34. Why do scientists use models in their search for new information?

_____

_____

35. A descriptive statement or equation that reliably predicts events under certain

conditions is called a(n) _____.

36. What may happen when scientists make new observations that seem to show
that a theory is wrong?

_____

_____

37. Define *law*.

_____

_____

38. What does a law tell you, and what does a law not tell you?

_____

_____

39. What law says that the total mass of materials formed during a chemical
change is the same as the total mass of the starting materials?

_____