

Directed Reading A

Section: What Is Matter?

MATTER

1. What characteristic do a human, hot soup, the metal wires in a toaster, and the glowing gases in a neon sign have in common?

2. What is matter?

MATTER AND VOLUME

_____ 3. What unit would you use to measure the amount of water in a lake?

a. grams (g)

c. meters (m)

b. liters (L)

d. milliliters (mL)

_____ 4. What unit would you use to measure the volume of soda in a can?

a. centimeters (cm)

c. liters (L)

b. grams (g)

d. milliliters (mL)

5. What is volume?

6. Things with _____ cannot share the same space at the same time.

7. To measure a volume of water in a graduated cylinder, you should look at the bottom of the curve at the surface of the water called the _____.

8. The volume of solid objects is commonly expressed in _____ units.

9. What three dimensions are needed to find the volume of a rectangular solid?

10. How could the volume of a 12-sided object be found using water and a graduated cylinder?

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11. Why can you express the volume of the 12-sided object measured by this method in cubic units?

MATTER AND MASS

_____ 12. The amount of matter in an object is its
a. volume. c. meniscus.
b. length. d. mass.

_____ 13. The SI unit of mass is the
a. newton. c. kilogram.
b. liter. d. pound.

_____ 14. The SI unit of weight is the
a. newton. c. kilogram.
b. liter. d. pound.

_____ 15. One newton is equal to the weight of an object that has
a. a mass of 100 g on the moon.
b. a volume of 1 m³ on Earth.
c. a mass of 1,000 g on Earth.
d. a mass of 100 g on Earth.

16. What is the only way to change the mass of an object?

For each description, write whether it applies to mass or to weight.

_____ 17. is always constant no matter where the object is located

_____ 18. is a measure of the gravitational force on an object

_____ 19. is measured using a spring scale

_____ 20. is expressed in grams (g), kilograms (kg), or milligrams (mg)

_____ 21. is expressed in newtons (N)

_____ 22. is less on the moon than on Earth

_____ 23. is a measure of the amount of matter in the object

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INERTIA

- _____ 24. The tendency of an object to resist a change in motion is known as
- a. mass.
 - b. gravitation.
 - c. inertia.
 - d. weight.

25. What is needed in order to cause an object at rest to move, or an object in motion to change its direction or speed?

26. How does mass affect the inertia of an object?

27. Why is it harder to get a cart full of potatoes moving than one that is empty?
