

Skills Worksheet

Directed Reading B**Section: What Is Matter?** (pp. 78–83)**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?

They are all made of matter = PNe- (protons, neutrons, and electrons)

2. What is matter?

Anything that has mass and inertia and takes up space.

MATTER AND VOLUME

- B. Liters (L)** Which of the following units would be best for expressing the amount of water in a lake?

- a. grams (g)
- b. liters (L)
- c. meters (m)
- d. milliliters (mL)

**D. mL
milliliters**

4. Which of the following units would be best for expressing the volume of soda in a can?

- a. centimeters (cm)
- b. grams (g)
- c. liters (L)
- d. milliliters (mL)

5. What is volume?

The amount of space that an object takes up (occupies)

6. Things with **matter** cannot share the same space at the same time.

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

the **meniscus**.

8. The volume of solid objects is commonly expressed

in **cubic** units.

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

volume = length x width x height

Directed Reading B *continued*

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

The method of displacement of water by an irregular solid. Measure the before and after volume levels on the graduated cylinder, then subtract to find the volume.

11. If the volume of water displaced by the 12-sided object is 8 mL, what is the volume of the 12-sided object in cubic units?

Volume = 8ml x (1cm³/1ml) = 8 cubic centimeters (cm³)

MATTER AND MASS

D. mass. **12.** The measure of the amount of matter in an object is its
a. volume.
b. length.
c. meniscus.
d. mass.

C. weight **13** The measure of the gravitational force on an object is its
a. mass.
b. length.
c. weight.
d. volume.

C. kilogram (kg) **14.** The SI unit of mass is the
a. newton.
b. liter.
c. kilogram.
d. pound.

D. **15.** One newton is about 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 kg on Earth.
d. a mass of 100 g on Earth.

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

Remove material from the object, for example cutting a piece off it.

Directed Reading B *continued*

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

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

_____ **weight** **18.** is measured using a spring scale

_____ **mass** **19.** is expressed in grams (g), kilograms (kg), or milligrams (mg)

_____ **weight** **20.** is expressed in newtons (N)

_____ **weight** **21.** is less on the moon than on Earth

draw and label pg. 82 in the textbook,
the balance scale and the spring scale