

Skills Worksheet

Directed Reading B

Section: Physical Properties (pp. 84–89)

IDENTIFYING PHYSICAL PROPERTIES

- b. physical property** 1. A characteristic of matter that can be observed or measured without changing the identity of the matter is a
- matter property.
 - physical property.
 - chemical property.
 - volume property.

- c. color, odor, mass** 2. Some examples of physical properties are
- color, odor, and reactivity.
 - color, odor, and speed.
 - color, odor, and mass.
 - color, odor, and anger.

Match the correct example with the correct physical property. Write the letter in the space provided.

- | | | |
|--------------------------------|---|--------------------------------|
| d. malleability | 3. Aluminum can be flattened into sheets of foil. | a. state |
| a. change of state | 4. Water is frozen into ice. | b. solubility |
| f. ductility | 5. Copper can be pulled into thin wires. | c. thermal conductivity |
| c. thermal conductivity | 6. Your hand grows warm from holding a cup of hot liquid. | d. malleability |
| b. solubility | 7. Flavored drink mix dissolves in water. | e. odor |
| e. odor | 8. An onion gives off a very distinctive smell. | f. ductility |
| g. density | 9. A golf ball has more mass than a table tennis ball. | g. density |

10. Density is the physical property that describes the relationship between mass and volume.

11. The amount of matter in a given space, or volume, is called density.

12. What is the equation for density?

$D = m/v$, density = mass / volume

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13. What do D , V , and m stand for in the equation for density?

D = density
V = volume
m = mass

14. The units for density consist of a mass unit divided by a(n)

volume

unit.

15. What happens to the density of a given object (container) if you increase the amount of the substance that you have?

increase mass with fixed volume = increased density

16. What are two reasons why density is a useful physical property for identifying substances?

Especially in metals, the space between atoms is uniform, (constant) therefore the amount of matter in a fixed space is constant.
This means it has a unique or characteristic density.
(tip: Don't buy gold jewelry that is low density)

17. Why would 1 kilogram of lead be less awkward to carry around than 1 kilogram of feathers?

They are both equally heavy, but it would be easier to put your arms around the lead since the density is higher, the volume must be smaller.

18. What will happen to a solid object made from matter with a greater density than water when it is dropped into water?

Greater than water density objects will SINK in water.

19. How will knowing the density of a substance help you determine whether an object made from that material will float in water?

Compare the substances density to water. If the density is higher than water it will sink. If it is lower than water it will float.

20. If you pour different liquids into a graduated cylinder, the liquids will form layers based upon differences in their density and solubility.

Directed Reading B *continued*

21. If you pour different liquids into a graduated cylinder, which layer of liquid will settle on the bottom?

The most dense liquid.

22. If you pour different liquids into a graduated cylinder, where will the layer of liquid with the lowest density be found?

At the top.

PHYSICAL CHANGES: NO NEW SUBSTANCES

23. A change that affects only the physical properties of a substance is

known as a(n) physical change / state change

24. What kind of changes are changes of state, such as melting and freezing?

butter melting, water boiling (vaporizing)
dry ice sublimation (from solid to gas)

Identify which of the following activities represent physical changes by writing PC in the space provided. Put an X beside activities that do not.

PC 25. sanding a piece of wood

X, because of gas production 26. baking bread

PC 27. crushing an aluminum can

PC 28. melting an ice cube

PC 29. dissolving sugar in water

PC 30. molding a piece of silver

31. When a substance undergoes a physical change, its chemical properties does not change.

32. What is changed when matter undergoes a physical change? Give an example to explain your answer.

The shape, or state (like melting) and the distribution of the particles, (like sanding down or dissolving in water or vaporizing into the air).