

Skills Worksheet

Directed Reading B**Section: Elements** (pp. 134–137)**ELEMENTS, THE SIMPLEST SUBSTANCES**

1. A pure substance that cannot be separated into simpler substances by physical or chemical means is called a(n) _____.
2. A substance in which all of the “building-block” particles are identical is called a(n) _____ substance.
3. The building-block particles for elements are called _____.

CLASSIFYING ELEMENTS

4. The amount of an element present does not affect the element's _____.
5. Why does a helium-filled balloon float up when it is released?

Look at each property listed below. If it is a characteristic property of elements, write *CP* in the space provided. If it is not a characteristic property, write *N*.

- _____ 6. size
- _____ 7. melting point
- _____ 8. density
- _____ 9. shape
- _____ 10. mass
- _____ 11. volume
- _____ 12. color
- _____ 13. hardness
- _____ 14. flammability
- _____ 15. weight
- _____ 16. reactivity with acid

Directed Reading B *continued*

GROUPING ELEMENTS

17. What are two common properties that most terriers share?

18. All elements can be classified as metals, metalloids, or

_____.

19. An element that is shiny and that conducts heat and electricity well is called

a(n) _____.

20. An element that conducts heat and electricity poorly is called

a(n) _____.

21. Elements that have properties of both metals and nonmetals

are called _____.

**Indicate whether the description applies to a metal, a nonmetal, or a metalloid.
Write the correct letter in the space provided. Letters can be used more than once.**

- | | |
|---|----------------------|
| _____ 22. are malleable | a. metalloids |
| _____ 23. are dull or shiny | b. nonmetals |
| _____ 24. are poor conductors | c. metals |
| _____ 25. tend to be brittle and unmalleable as solids | |
| _____ 26. are almost always shiny | |
| _____ 27. are also called semimetals | |
| _____ 28. are almost always dull | |
| _____ 29. are somewhat ductile | |
| _____ 30. include boron, silicon, antimony | |
| _____ 31. include lead, tin, copper | |
| _____ 32. include sulfur, iodine, neon | |

Skills Worksheet

Directed Reading B

Section: Compounds (pp. 138–141)

1. List three examples of compounds you encounter every day.

COMPOUNDS: MADE OF ELEMENTS

2. When two or more elements are joined by chemical bonds to form a new pure substance, the new substance is called a(n) _____.
3. A compound is different from the _____ that make it up.
4. A(n) _____ is the process by which substances change into new substances.

PROPERTIES OF COMPOUNDS

- _____ 5. Which of the following statements is true about the properties of compounds?
- a. A property of all compounds is to react with acid.
 - b. Each compound has its own physical properties.
 - c. Compounds cannot be identified by their chemical properties.
 - d. A compound has the same properties as the elements that form it.
- _____ 6. Which of the following is NOT true about compounds?
- a. Compounds are combinations of elements that join in specific ratios according to their masses.
 - b. The mass ratio of a specific compound is always the same.
 - c. Compounds are random combinations of elements.
 - d. Different mass ratios mean different compounds.
7. Sodium and chlorine can be extremely dangerous in their elemental form. How is it possible that we can eat them in a compound?

Directed Reading B *continued*

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

- | | |
|---|---------------------------|
| _____ 8. a poisonous, greenish yellow gas | a. sodium chloride |
| _____ 9. table salt | b. chlorine |
| _____ 10. a soft, silvery white metal that reacts violently with water | c. sodium |

BREAKING DOWN COMPOUNDS

- 11.** What compound helps give carbonated beverages their “fizz”?
- _____
- 12.** Which elements make up the compound that helps give carbonated beverages their “fizz”?
- _____
- _____
- _____
- 13.** The only way to break down a compound is through a(n) _____ change.

COMPOUNDS IN YOUR WORLD

- 14.** Aluminum is produced by breaking down the compound _____.
- 15.** Plants use the compound _____ in photosynthesis to make carbohydrates.

Skills Worksheet

Directed Reading B**Section: Mixtures** (pp. 142–147)**PROPERTIES OF MIXTURES**

1. A combination of two or more substances that are not chemically combined is called a(n) _____.

2. When two or more materials combine chemically, they form a(n) _____.

3. Each substance in a mixture keeps its _____.

4. How can you tell that a pizza is a mixture?

5. Mixtures can be separated through _____ changes.

Match each substance with the correct method of separation. Write the letter in the space provided. Each method may be used only once.

_____ 6. a mixture of aluminum and iron

a. distillation

_____ 7. crude oil

b. magnet

_____ 8. parts of blood

c. filter

_____ 9. sulfur and salt

d. centrifuge

10. Granite can be pink, gray, or black, depending on the

_____ of feldspar, mica, and quartz.

SOLUTIONS

_____ 11. Which of the following is NOT true of solutions?

a. They contain a dissolved substance called a solute.

b. They are composed of two or more evenly distributed substances.

c. They contain a substance called a solvent, in which another substance is dissolved.

d. They appear to be more than one substance.

12. The process in which particles of substances separate and spread evenly

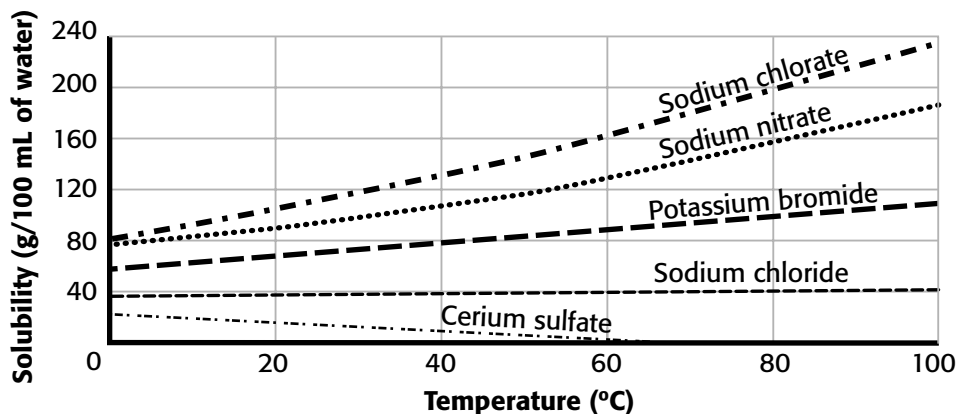
through a mixture is known as _____.

Directed Reading B *continued*

13. In a solution, the _____ is the substance that is dissolved, and the _____ is the substance in which it is dissolved.
14. Salt is _____ in water because it dissolves in water.
15. When two gases or two liquids form a solution, the substance that is present in the largest amount is the _____.
16. A solid solution of metals or nonmetals dissolved in metals is a(n) _____.
17. What can particles in solution NOT do because they are so small?

CONCENTRATION OF SOLUTIONS

Use the graph below to answer questions 18 and 19. Write the letter of the correct answer in the space provided.



- _____ 18. Look at the graph above. Which solid is less soluble at higher temperatures than at lower temperatures?
- sodium chloride
 - sodium nitrate
 - potassium bromide
 - cerium sulfate
- _____ 19. Look at the graph above. Which compound's solubility is least affected by temperature changes?
- sodium chloride
 - sodium nitrate
 - potassium bromide
 - cerium sulfate

Directed Reading B *continued*

20. A measure of the amount of solute dissolved in a given amount of solvent is called _____.

21. What is the difference between a dilute solution and a concentrated solution?

22. The ability of a solute to dissolve in a solvent at a certain temperature and pressure is called _____.