

Skills Worksheet

# Directed Reading A

## Section: Elements

- \_\_\_\_\_ 1. Which of the following is NOT a physical or chemical change?
- a. crushing
  - b. weighing
  - c. melting
  - d. passing electric current

### ELEMENTS, THE SIMPLEST SUBSTANCES

2. A pure substance that cannot be separated into simpler substances by physical or chemical means is a(n) \_\_\_\_\_.
3. A substance that contains only one type of particle is a(n) \_\_\_\_\_.

### PROPERTIES OF 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 on the line. If it is not a characteristic property, write N.

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

**Directed Reading A *continued***

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**CLASSIFYING ELEMENTS BY THEIR PROPERTIES**

**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 electric current well is

a(n) \_\_\_\_\_.

**20.** An element that conducts heat and electric current poorly, and can be a solid,

liquid, or gas is a(n) \_\_\_\_\_.

**21.** Elements that have properties of both metals and nonmetals

are \_\_\_\_\_.

**Indicate whether the description applies to a metal, a nonmetal, or a metalloid.  
Write the correct letter in the space provided.**

\_\_\_\_\_ **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 always shiny

\_\_\_\_\_ **27.** are also called semiconductors

\_\_\_\_\_ **28.** are always dull

\_\_\_\_\_ **29.** are somewhat ductile

\_\_\_\_\_ **30.** include boron, silicon, antimony

\_\_\_\_\_ **31.** include lead, tin, copper

\_\_\_\_\_ **32.** include sulfur, iodine, neon

Skills Worksheet

# Section Review

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## Elements

### USING KEY TERMS

1. Use the following terms in the same sentence: *element* and *pure substance*.

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### UNDERSTANDING KEY IDEAS

- \_\_\_\_\_ 2. A metalloid
- a. may conduct electric current.
  - b. can be ductile.
  - c. is also called a semiconductor.
  - d. All of the above
3. What is a pure substance?

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### MATH SKILLS

4. There are eight elements that make up 98.5% of the Earth's crust: 46.6% oxygen, 8.1% aluminum, 5.0% iron, 3.6% calcium, 2.8% sodium, 2.6% potassium, and 2.1% magnesium. The rest is silicon. What percentage of Earth's crust is silicon? Show your work below.

**Section Review** *continued*

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**CRITICAL THINKING**

**5. Applying Concepts** From which category of elements would you choose to make a container that wouldn't shatter if dropped? Explain your answer.

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**6. Making Comparisons** Compare the properties of metals, nonmetals, and metalloids.

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**7. Evaluating Assumptions** Your friend tells you that a shiny element has to be a metal. Do you agree? Explain.

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