

Chapter 5 The Periodic Table

Section 5.3 Representative Groups**(pages 139–145)**

This section discusses how the number of valence electrons affects the properties of elements. It also describes properties of elements in Groups 1A through 8A.

Reading Strategy (page 139)

Monitoring Your Understanding As you read, record an important fact about each element listed in the table. For more information on this reading strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

| Element | Important Fact |
|-----------|----------------|
| Magnesium | |
| Aluminum | |
| Chlorine | |

Valence Electrons (page 139)

1. An electron that is in the highest occupied energy level of an atom is a(n) _____ electron.
2. Elements within a group have the _____ number of valence electrons.

The Alkali Metals (page 140)

3. The reactivity of alkali metals _____ from the top of Group 1A to the bottom.
4. Sodium is stored under oil because it _____.

The Alkaline Earth Metals (page 141)

5. Differences in reactivity among alkaline earth metals are shown by the way they react with _____.

Find and match two properties to each element listed.

| Alkaline Earth Metal | Property |
|----------------------|---|
| _____ 6. magnesium | a. Helps build strong teeth and bones |
| _____ 7. calcium | b. Helps plants produce sugar |
| | c. Is used to make lightweight bicycle frames |
| | d. Is the main ingredient in limestone |

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The Boron Family (page 142)

8. List the four metals in Group 3A.
- a. _____ b. _____
c. _____ d. _____
9. Circle the letter of each sentence that is true about aluminum.
- a. It is the most abundant metal in Earth's crust.
b. It is often found combined with oxygen in bauxite.
c. It is more reactive than sodium and magnesium.
d. It is a good conductor of electric current.

The Carbon Family (page 142)

10. List the two metalloids in Group 4A.
- a. _____ b. _____
11. Except for water, most of the compounds in your body contain _____.

The Nitrogen Family (page 143)

12. List the nonmetals in Group 5A.
- a. _____ b. _____
13. Name two elements in the nitrogen family that are contained in fertilizer.
- a. _____ b. _____

The Oxygen Family (page 143)

14. List the nonmetals in Group 6A.
- a. _____ b. _____ c. _____
15. Name the most abundant element in Earth's crust.

The Halogens (page 144)

16. List the four nonmetals in Group 7A.
- a. _____ b. _____
c. _____ d. _____
17. Halogens have similar _____ properties but different _____ properties.

The Noble Gases (page 145)

18. Name three characteristics of noble gases.
- a. _____ b. _____ c. _____
19. How can an element that does not react easily with other elements be useful? _____
