

SECTION | ATOMS OF ELEMENTS MAKE UP THE PERIODIC TABLE.

1.2 Challenge and Extension

BIG IDEA A substance's atomic structure determines its physical and chemical properties.

KEY CONCEPT Atoms of elements make up the periodic table.

Using the Periodic Table Elements that are in the same column, or group, in the periodic table show similarities in their properties. Elements in the same horizontal row, or period, show a gradual change in their properties across the period.

Use the periodic table on pages 21–22 of your textbook to answer the following questions about the properties of elements.

1. What other information would you add to a square of the periodic table?

2. Would you expect aluminum (Al) to be more like thallium (Tl) or sulfur (S)? Explain.

3. If each statement below is true, write true on the line. If the statement is false, rewrite it to make it true.

a. The number of protons in the nucleus of dysprosium is 162.50.

b. All the elements in Period 2 are metals.

c. Silicon is best described as having both metallic and nonmetallic properties.

4. Indicate with a plus sign (+) or a minus sign (–) whether atoms of the element form positive ions or negative ions.

a. _____ platinum (Pt)

b. _____ uranium (U)

c. _____ radium (Ra)

d. _____ magnesium (Mg)

5. Rank the following elements from least dense to most dense: chromium (Cr), rhenium (Re), beryllium (Be), scandium (Sc)
