

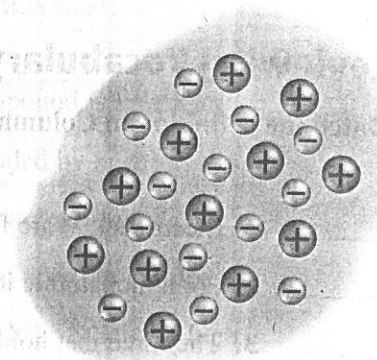
**CHAPTER 7** **STUDY GUIDE**

*Conceptual Chem*

**Section 7.4 Metallic Bonds and the Properties of Metals**

*In your textbook, read about metallic bonds.*

Use the diagram of metallic bonding to answer the following questions.



1. What is the name of the model of metallic bonding that is illustrated?  
\_\_\_\_\_

2. Why are the electrons in a metallic solid described as delocalized?  
\_\_\_\_\_

3. Which electrons from the metal make up the delocalized electrons?  
\_\_\_\_\_

4. Are the metal atoms that are shown cations or anions? How can you tell?  
\_\_\_\_\_

5. How do the metallic ions differ from the ions that exist in ionic solids?  
\_\_\_\_\_  
\_\_\_\_\_

6. Explain what holds the metal atoms together in the solid.  
\_\_\_\_\_  
\_\_\_\_\_

*In your textbook, read about the properties of metals.*

For each property, write *yes* if the property is characteristic of most metals, or *no* if it is not. If the property is a characteristic of metals, explain how metallic bonding accounts for the property.

7. Malleable \_\_\_\_\_  
\_\_\_\_\_

8. Brittle \_\_\_\_\_  
\_\_\_\_\_

9. Lustrous \_\_\_\_\_  
\_\_\_\_\_

10. High melting point \_\_\_\_\_  
\_\_\_\_\_

11. Low boiling point \_\_\_\_\_  
\_\_\_\_\_

12. Ductile \_\_\_\_\_  
\_\_\_\_\_

13. Poor conduction of heat \_\_\_\_\_  
\_\_\_\_\_

14. Good conduction of electricity \_\_\_\_\_  
\_\_\_\_\_