

Carbon Chemistry ▪ *Guided Reading and Study*

Properties of Carbon

This section explains why carbon can form a huge variety of different compounds. It also describes the different forms of pure carbon.

Use Target Reading Skills

Before your read, write what you know about carbon in the top box. As you read, write what you learn in the bottom box.

What You Know
1. Carbon atoms have 6 electrons.
2.
3.
4.
5.

What You Learned
1.
2.
3.
4.
5.

Carbon Atoms and Bonding

- Circle the letter of the number of valence electrons a carbon atom has available for bonding.
a. 2 b. 4 c. 6 d. 8
- The transfer or sharing of valence electrons creates chemical _____.
- Is the following sentence true or false? Carbon atoms form more bonds than most other atoms. _____

Carbon Chemistry ▪ *Guided Reading and Study***Properties of Carbon** *(continued)*

4. Circle the letter of the number of bonds each carbon atom is able to form.
a. 2 b. 4 c. 6 d. 8
5. What are three ways carbon atoms bond to form the backbones for molecules?
a. _____ b. _____
c. _____

Forms of Pure Carbon

6. Why can the pure element of carbon exist in different forms?
- _____
- _____

7. Complete the table about forms of pure carbon.

Forms of Carbon			
Form	Arrangement of Carbon Atoms	Properties	Use
a. Diamond			
b.		Soft, slippery	Pencils, lubricants
c.	Hollow sphere	Enclose an open area	Possibly carry medicines through the body
d.	Long, hollow tube		Conductors in electronic devices

8. Under what conditions do diamonds form?
- _____
- _____