

Name: _____ Date: _____

Secrets of the Carbon Kingdom: A 7th Grade Quest

Learners build a solid foundation in molecular basics by identifying carbon's unique bonding patterns and recognizing organic substances in everyday life.

1. Carbon is known as the 'building block of life.' How many chemical bonds can a single carbon atom form with other atoms?

- A. Two
- B. Four
- C. Six
- D. Eight

2. Organic chemistry is the study of all compounds that do NOT contain the element carbon.

- A. True
- B. False

3. A molecule that is made up of ONLY carbon and hydrogen atoms is classified as a _____.

- A. Carbohydrate
- B. Hydrocarbon
- C. Oxide
- D. Polymer

4. Which of these everyday items is primarily made of organic carbon chains called polymers?

- A. A plastic water bottle
- B. A glass window Pane
- C. A steel spoon
- D. A grain of salt

5. In organic chemistry, when carbon atoms link together in a straight line, what is this structure called?

- A. A ring
- B. A sphere
- C. A chain
- D. A grid

6. Isopentane and Pentane have the same number of atoms but different shapes; these are called isomers.

- A. True
- B. False

7. The aroma of a fresh orange or a rose comes from organic compounds known as _____.

- A. Metals

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- B. Esters
- C. Salts
- D. Acids

8. Which gas is produced when an organic hydrocarbon (like candle wax) burns in the presence of oxygen?

- A. Nitrogen
- B. Helium
- C. Carbon Dioxide
- D. Chlorine

9. Diamonds and Graphite are both made of pure carbon, even though they look different.

- A. True
- B. False

10. The simplest organic molecule, which is often released by cows and found in landfills, is _____.

- A. Octane
- B. Methane
- C. Glucose
- D. Vinegar