Name: _____ **Date:** _____

Carbon Chain Champions 3rd Grade Quiz

Solve puzzles about carbon-based shapes and natural chemical bonds using real-world examples like silk threads and citrus scents.

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1. Imagine you are building a LEGO tower. If Carbon is like the special brick that can connect in four different directions, why is it considered the 'backbone' of life?

A. It is the only element that can turn into liquid water
B. It can link together to form long, strong chains and complex shapes
C. It is the heaviest metal found in the Earth's crust
D. It prevents other atoms from sticking together

2. Molecules made of only Carbon and Hydrogen are called hydrocarbons. Candles are often made of paraffin, which is a long hydrocarbon chain. What happens to these atoms during combustion (burning)?

A. They disappear completely and turn into nothing
B. They freeze into tiny ice crystals inside the flame
C. They react with oxygen to release energy and form new gases
D. They turn into gold atoms through a chemical reaction

3. True or False: Every single molecule that contains a carbon atom is automatically considered 'alive' like a pet or a plant.

A. True
B. False

4. Limonene is an organic molecule that makes oranges smell citrusy. If we changed the arrangement of the atoms in that molecule, what would likely happen?

A. The weight of the atoms would increase by double
B. The orange would turn into a piece of solid iron
C. The smell would change or disappear entirely
D. The molecule would become a brand new living animal

5. Spiders create silk, which is a natural organic polymer. A polymer is a giant molecule made of many repeating units. Which of these is a human-made (synthetic) organic polymer?

A. A plastic soda bottle
B. A block of pure granite rock
C. A glass window pane
D. An iron nail

6. True or False: Carbon atoms can bond to each other to form closed 'rings' or circles, not just straight lines.

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A. True
B. False

7. Vitamin C is an organic compound found in lemons. Why do scientists categorize Vitamin C under 'organic chemistry' instead of 'inorganic chemistry'?

A. Because it only exists inside of a laboratory
B. Because it contains carbon atoms bonded to hydrogen
C. Because it is a type of magnetic metal
D. Because it cannot be seen with a microscope

8. Fossil fuels like gasoline come from the remains of ancient plants and tiny sea creatures. These fuels are rich in carbon. When they are used, they are part of which process?

A. The Water Cycle
B. The Carbon Cycle
C. The Lunar Cycle
D. The Rock Cycle

9. True or False: If you remove all the carbon atoms from a piece of wood, the wood would still look and act the same.

A. True
B. False

10. Scientists often use 'scaffolding' to explain how carbon works. In a building, scaffolding is the frame everything else hangs on. In a molecule, what 'hangs' onto the carbon frame?

A. Only more carbon atoms
B. Functional groups made of atoms like Oxygen and Nitrogen
C. Tiny pieces of dust and sand
D. Small magnets that hold the molecule together