

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Answer Key: Do Carbon Atoms Like Cocoa? 3rd Grade Organic Chemistry Quiz

Students analyze molecular blueprints and compare carbon chains found in everything from chocolate treats to fluffy winter sweaters.

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**1. Imagine you are looking at a Lego set for building living things. Which 'brick' is the most important one used to build people, plants, and even your favorite snacks?**

**Answer:** B) Carbon

Carbon is often called the 'building block of life' because it can connect to other atoms in many different ways to create complex structures.

**2. True or False: Carbon atoms are so friendly that they can hold hands with up to four other atoms at the same time.**

**Answer:** A) True

In organic chemistry, a single carbon atom has four bonding sites, meaning it can connect to four other atoms to make a molecule.

**3. Natural vanilla flavor and the smell of a fresh orange are both types of \_\_\_\_\_ molecules because they contain carbon chains.**

**Answer:** A) Organic

The term 'organic' in chemistry refers to molecules that are built around carbon atoms, which includes most scents and flavors in nature.

**4. Carbon atoms can link up in different shapes. If carbon atoms connect in a straight line like a train, what do scientists call this shape?**

**Answer:** C) A chain

When carbon atoms attach one after another in a row, they form a 'carbon chain,' which is a common structure in organic chemistry.

**5. True or False: All organic molecules must stay in a straight line and can never form a circle or a ring.**

**Answer:** B) False

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Carbon atoms are flexible! They can link up to form closed loops, which scientists call 'ring structures.'

**6. The soft wool in your winter sweater and the silk from a spider's web are both long, repeating organic chains called \_\_\_\_\_.**

**Answer:** B) Polymers

Polymers are giant molecules made of many smaller carbon units joined together, like beads on a very long string.

**7. Why do scientists study the way carbon atoms are arranged in a molecule?**

**Answer:** C) To understand how the molecule behaves

The specific arrangement or 'structure' of carbon atoms determines whether a substance is a liquid, a solid, a fuel, or a food.

**8. True or False: Every single thing on Earth is made of organic carbon molecules, including rocks and steel.**

**Answer:** B) False

While many things are organic, inorganic things like metal, rocks, and glass are usually not built from carbon chains.

**9. When you eat a piece of fruit, your body breaks down an organic molecule called \_\_\_\_\_ to get the energy you need to play.**

**Answer:** D) Sugar

Sugars (like fructose in fruit) are organic molecules that provide energy for living things through their carbon bonds.

**10. Which of these is a real-world example of how humans use organic chemistry to create something new?**

**Answer:** C) Making medicine from plants

Many medicines are made by studying and changing organic molecules found in nature to help people get well.