

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

## Answer Key: Tiny Travelers in Carbon City: Pre-K Organic Chemistry Quest

Children identify life-building carbon shapes and recognize how molecules connect like building blocks to form the world around them.

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**1. If you are building a 'Carbon Castle,' which shape is the best at holding hands with four friends at the same time?**

**Answer:** B) A carbon block with 4 hooks

Carbon is special because it has four 'hooks' (valence electrons) that allow it to build big, complex structures unlike other elements.

**2. True or False: Carbon building blocks can hold hands to make a long, wiggly caterpillar chain.**

**Answer:** A) True

Carbon atoms can link together in long lines called polymer chains, which is how things like silk and plastic are made.

**3. In our body, Carbon is like a \_\_\_ because it helps hold all our other tiny pieces together.**

**Answer:** A) Super Glue

Carbon acts as the 'backbone' or glue of life, creating the strong structures found in every living cell.

**4. Look at a diamond ring and a pencil lead. Even though they look different, they are both made of what secret ingredient?**

**Answer:** B) Carbon

Both diamonds and graphite are made entirely of carbon; they just hold hands in different patterns!

**5. True or False: Carbon atoms are so shy that they only ever hold hands with one other atom.**

**Answer:** B) False

Carbon is very social! It loves to form multiple bonds with many different elements to create complex molecules.

**6. When carbon atoms form a circle and trap a 'smell' inside, we call that a \_\_\_ structure.**

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**Answer:** C) Ring

Carbon atoms often form rings (like benzene), which are very stable and found in many things that have strong scents.

**7. If you want to build a butterfly wing or a flower petal, which tiny worker do you need the most?**

**Answer:** B) A tiny Carbon atom

Organic chemistry is the study of life, and all living things like flowers and butterflies are made of carbon molecules.

**8. True or False: Carbon can make things that are very soft (like oil) and things that are very hard (like a diamond).**

**Answer:** A) True

Carbon's versatility allows it to form everything from liquid fats to the hardest minerals on Earth.

**9. Plants use \_\_\_ from the air to get the carbon they need to grow big and tall.**

**Answer:** A) Carbon Dioxide

Plants take in CO<sub>2</sub> and use the carbon to build their stalks, leaves, and fruits through photosynthesis.

**10. What happens if we take a carbon chain and add a 'Oxygen' hat to it?**

**Answer:** B) It turns into a different molecule

Adding different elements (functional groups) to a carbon chain changes what that molecule is and what it does.