## **Lesson 3: Greenhouse Effect-“It’s All About Carbon”** [***tinyurl.com/allcarbon***](https://tinyurl.com/allcarbon)

**Episode 1: Carbon all around us**

1. Things made of carbon: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. What is carbon? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of life. Everything that is alive is

made of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ other atoms. It’s carbon’s

special ability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that gets us in trouble.

**Episode 2: Making carbon bonds**

3. When an animal dies, there are still \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ atoms locked closely, tightly together inside of it.

4. Fossil fuels are called that because they come from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that died long ago.

5. The energy from fossil fuels comes from: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Episode 3: Breaking carbon bonds**

7. Carbon bonds can be broken by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. When atoms break apart they immediately find new partners that are more stable and require less energy to stay together. What happens to the extra energy that was held in the original bonds?

9. How does a person’s wealth relate to the amount of carbon they use?

**Episode 4: How carbon makes us rich**

0:00-2:00 (Pause and reflect) How come when you break a carbon bond, you get carbon dioxide?

When it rains, extra \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the atmosphere gets absorbed (taken in) by the ocean. On land, carbon dioxide gets absorbed by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when they “eat” CO2.

The greenhouse effect occurs when sunshine bounces off earth’s \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ back up to the sky. The sunlight hits the CO22 [and other greenhouse gas] molecules, which don’t \_\_\_\_\_\_\_\_\_\_\_\_\_\_ up, they \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This warms the air, which leads to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Episode 5: How carbon makes us warm**

Complete the lesson assessment after watching this episode.