**The Online Carbon Cycle Game**

<https://www.windows2universe.org/earth/climate/carbon_cycle.html>

As you move through the carbon cycle, read the information that is provided at each stop in your journey, and answer the questions below. Also, be sure to stop and answer the question that is asked at each of the “star” locations along your route.

Before you begin your journey, define the following terms:

Carbon sink-

Carbon source-

Carbon reservoir-

**Welcome to the Atmosphere:**

The amount of carbon dioxide gas in the atmosphere has increased by \_\_\_\_\_\_ % in the last 150 years.

Only \_\_\_\_\_\_ % of the atmosphere is made of carbon dioxide.

In the video *Decoding the Weather Machine*, you learned that scientific testing on carbon in the atmosphere clearly shows that the increasing levels of carbon gases in the atmosphere is directly the result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Land Plants**:

The process by which plants remove carbon dioxide from the atmosphere in order to make food is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

In the fall and winter, the rate at which plants remove carbon dioxide from the atmosphere goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Soil:**

When plants die, the carbon that they contain usually passes into \_\_\_\_\_\_\_\_\_\_\_\_\_.

Decomposing pants and animals in the soil is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Soils contain about \_\_\_\_\_ % of the Earth’s carbon.

When detritus breaks down (decomposes) due to bacteria and fungi, the carbon that was in the detritus moves into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Surface Ocean:**

List the three routes that carbon might follow in order to end up in the ocean surface:

-

-

-

The ocean absorbs more carbon dioxide from the atmosphere than the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ does.

As the temperature of ocean water goes up (the water gets warmer), the amount of carbon dioxide that is absorbed by the water goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

When carbon dioxide gas absorbs into water, the water begins to form a corrosive chemical substance called carbonic \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Deep Ocean:**

The two ways that carbon can move into the deep ocean are:

-

-

Once carbon sinks to the ocean bottom, it is likely to stay there for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of years.

About \_\_\_\_\_\_ % of the Earth’s carbon is located on the ocean floors.

**Marine Life**:

Tiny organisms in the ocean called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ use photosynthesis to turn carbon in ocean water into food.

As carbon dioxide gets dissolved into ocean water it produces carbonic acid. This carbonic acid is harmful to marine organisms such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.