

Climate Heroes Lesson Plan

The Carbon Cycle and its Role in Climate Change

Activity 2

Grades 8-10

Time required: 1 class period

Focus question

- What is a carbon sink?

Learning objective

- The students will be able to explain that plants are carbon sinks.

Materials

- Atom signs created in Activity #1
- Several different colours of chalk or ribbon
- Blanket

Procedures

1. Begin by referring to activity 1 and explaining to the students that animals do not eat all of the plants. Therefore, lots of carbon stays in the plant material. Talk about the amount of carbon that is stored in forests and marshes.
2. Put several sugar molecule signs into the green circle as a visual aid. These plants act as a carbon “sink” removing CO₂ from the atmosphere.
3. Put a blanket in the circle to represent the stored energy. Remind the students that the formation of CO₂ releases heat. Tell them that CO₂ is a greenhouse gas in the air that acts like a blanket trapping warm air. Creating more CO₂ in the air is like adding more blankets, making everyone hotter. As long as the plants are living or buried in the ground the carbon stays locked up.
4. Have the students brainstorm things that happen to plants that would release the carbon. Examples might include animals eating, forest fires, and burning fossil fuels.
5. Evaluate students with the following questions:
 - How are plants carbon sinks? (The plant takes CO₂ out of the air and uses the carbon to make sugar, which is stored in the plant. As long as the plant is alive, the carbon will not return to the atmosphere.)
 - What are some ways that plants might release the carbon back into the atmosphere? (Answers will vary. Possibilities include the plant dying and decomposing, the plant being eaten or carbon releasing during the respiration process of the animal. Plants release carbon dioxide when they respire. Fire could burn the plants releasing the carbon.)