

A CHRISTMAS CAROL

Greenhouse Gasses / Our Atmosphere

Grade Level(s): 6-9

Florida Standard: SC.6.E.7.9, SC.912.E.7.7, SC.8.L.18.3

Duration: 30-40 minutes

Activity: Students will learn more about the greenhouse effect and the burning of fossil fuels.

Vocabulary: Atmosphere, Carbon, CO₂, Carbon Sink, Coal, Fossil Fuel, Geosphere, Greenhouse Effect

Objectives: Recognize that the burning of fossil fuels can negatively impact the natural balance of the carbon cycle and the greenhouse effect.

Materials: Smartboard, student investigation worksheet.

Procedure:

1. Pass out the student investigation worksheet.
2. Watch the BrainPOP "Greenhouse Effect" video (3:49) as an introduction to the lesson. <https://docs.google.com/presentation/d/1IWAV6XIC71x3HIRFcbS8S6hHDWcZsdQcNJrevdrhqc/edit?usp=sharing>
3. Working individually or in small groups, have the students complete the worksheet.
4. When completed, there are informative BrainPOP games about the greenhouse effect underneath the video.

Greenhouse Gasses / Our Atmosphere Worksheet

The Greenhouse Effect of our atmosphere is a necessity for life to thrive on Earth. It retains heat and keeps most of our planet at just the right temperature for plants and animals. The carbon dioxide (CO₂) in the atmosphere is part of that process, helping to trap heat from the Sun. If excessive CO₂ is added to the atmosphere, too much heat is trapped.

Vocabulary Matching - Match the terms below with their correct definitions.

1. ____ Atmosphere
2. ____ Carbon
3. ____ Carbon Dioxide (CO₂)
4. ____ Carbon Sink
5. ____ Coal
6. ____ Fossil Fuel
7. ____ Geosphere
8. ____ Greenhouse Effect

- a. This includes everything below our feet, from the core to the surface
- b. The gaseous form of carbon in our atmosphere.
- c. The trapping of the Sun's heat in our lower atmosphere.
- d. The thin layer of gasses surrounding the surface of Earth.
- e. A natural fuel formed from the remains of ancient plants and animals.
- f. A naturally abundant element found in all forms of life.
- g. A natural environment which acts as a reservoir for carbon, keeping it out of the atmosphere.
- h. A combustible rock composed mostly of carbon from ancient plants.

Greenhouse Gasses / Our Atmosphere Worksheet



Use the terms to fill in the blanks below.

Carbon Sink Carbon Dioxide (CO₂) Atmosphere Coal Carbon
Greenhouse Effect Fossil Fuel Geosphere

London was a smoky, polluted, soot-filled city In the time of Dickens' "A Christmas Carol." The characters in "A Christmas Carol" were heating their homes by burning _____ which occurs naturally underground in the _____. This was the cause of much of the pollution of the London air. Because it traps _____ and keeps it out of the atmosphere, coal is an important _____. Like oil and natural gas, coal is a _____. When it is burned, coal releases excessive _____ into the _____. They did not know it at the time, but the Londoners were contributing to the imbalance of the _____.