

FACTivity

The question you will explore in this FACTivity is:
How does ozone in the troposphere and stratosphere impact Earth?

The method you will use to do this is:

The class will divide into groups of four students. One half of each group will study the impact of ozone that occurs close to Earth, in the troposphere. The other half will study the impact of ozone that occurs in the upper atmosphere, in the stratosphere. You can do your research in the library and on the internet.

Gather information about the effects of ozone, and how human activities are affecting

Some search terms each team might use:

Tropospheric ozone team

Tropospheric ozone
Ozone pollution

Stratospheric ozone team

Stratospheric ozone
Ozone UV radiation

ozone. After each team of two students has collected their information, the team should summarize the information about ozone. In the summary, include information about where the ozone occurs. Each group of four students should then share and compare the summarized information within their group. As a group, discuss how ozone is both beneficial and harmful. Compare ozone's benefit and harm with where the ozone is found in each situation. Develop recommendations about what people can do in relation to ozone in the troposphere and in the stratosphere. Document your learning by creating a poster, which you will share with the class.

Hold a class discussion about what each group learned about ozone. Compare ozone in the troposphere with ozone in the stratosphere. What are the differences and similarities?

Useful Web Resources:

EPA's Sunwise Kids Ozone Layer information

http://www.epa.gov/sunwise/kids/kids_ozone.html

National Geographic for Kids Ozone Article

<http://kids.nationalgeographic.com/Stories/SpaceScience/Ozone>

Environmental Education For Kids—Ozone Layer

<http://www.dnr.state.wi.us/Org/caer/ce/ee/earth/air/ozonlayr.htm>

Adapted from: Liu, L., King, J.S., and Giardina, C. P. (2005). Effects of elevated concentrations of atmospheric CO₂ and tropospheric O₃ on leaf litter production and chemistry in trembling aspen and paper birch communities, *Tree Physiology*, 25: 1511-1522.
<http://www.treearch.fs.fed.us/pubs/13345>.



If you are a PLT-trained educator, you may use PLT Activity #73, "Waste Watchers," as an additional resource.