

Grades: 9-12

Lesson Plan Title: Atmospheric Air Pollution

General Goal(s):

This lesson will introduce the basics of atmospheric air pollution, its impacts, and how it's studied in Canada.

Specific Objectives:

Use a computer presentation to present information on air pollution. Specifically:

- Review of the atmosphere's structure and composition
- Examples of air pollution
 - Smog
- Transportation of air pollution
- Measuring air pollution

Required Materials:

- computer and projector
- large pickle jar or other large wide-mouthed jar
- latex gloves
- matches
- water

Step-By-Step Procedures:

1. Deliver computer presentation (25 min)
2. Students work in groups to complete Cloud in a Jar activity and worksheet (25 min)
3. Play PowerPoint Jeopardy (25 min)
 - Divide students into two or more teams
 - Assign a score keeper
 - Play according to normal jeopardy rules having student raise hands in order to answer question

Plan for Independent Practice:

Teacher can assign each student a specific type of air pollution. Students can be asked to write a report including information on sources, prevalence, impacts, and chemistry (lifetime of pollution in atmosphere). A possible extension can be made to a class presentation.

Assessment:

Assessment can be made on overall quality and completion of pollution report.

Useful Links:

Ozone Layer Fact Sheet – http://www.msc-smc.ec.gc.ca/cd/factsheets/ozone/index_e.cfm

Intergovernmental Panel on Climate Change – <http://www.ipcc.ch/>

PowerPoint Jeopardy Templates –
<http://www.jmu.edu/madison/teacher/jeopardy/jeopardy.htm>

Clouds in a Jar – http://www.sciencebuddies.org/science-fair-projects/project_ideas/Weather_p007.shtml

- Incorporate this activity immediately after PowerPoint presentation.

Keywords: Environmental chemistry, atmosphere, atmospheric pollution, troposphere, stratosphere, emissions, pollution