

Pollution Everywhere

Teacher Sheet(s)

Objective: To discover how easily pollution can be spread throughout the Earth's air.

Level: K-4
Subjects(s): Earth Science
Prep Time: Less than 10 minutes
Duration: One class period
Materials Category: General Classroom

National Education Standards

Science: 5c, 7d

Math:

Technology (ISTE):

Technology (ITEA):

NGS Geography Standards:

Materials:

- Jar or beaker
- Clear plastic cups, 10 for each group
- Water
- Food coloring
- Masking tape

Related Links:

None

Supporting NASAexplores Article(s):

[Wanted: Green Airplanes](#)

Pre-Lesson Instructions:

It might be helpful to make the polluted water before class begins.

Background Information:

In this activity the students will be using water and food coloring to represent the air and the NO_x emissions from airplane engines. Cup 1 is used as the control. The first cups will represent the air that is close to the engine. As you

dilute the water, those cups will represent the air that is further and further away from the airplane. NO_x can also affect rainfall, and therefore can end up in our water supply, which aligns this activity even more with the real world.

Guidelines:

1. Read the article "Wanted: Green Airplanes."
2. Discuss obvious forms of pollution. Take a walk around the school looking for signs of pollution.
3. Talk about pollution that cannot be seen, but still affects the environment.
4. Go over the procedure with the students. It might be a good idea to do the first repeat of the instructions with the students.
5. When all the groups are finished, clean up and discuss the results as a class. It is a good idea to keep a complete series of cups to refer to during the class discussion.

Discussion/Wrap-up:

1. Did the pollution ever go away? If the water was clear, did that mean no pollution was in the cup? Hold the cups against white paper to allow students to see the faint tint that should still be present in the water.
2. Point out that NO_x, like a lot of pollution, is still present in the air even though it cannot be seen.
3. How does this lab relate to the real-world problem of aircraft emissions contributing to pollution?
4. What can people do to help control pollution in their own lives?

Extensions:

- Read the book [The Lorax](#) by Dr. Seuss.
- Take a trip to a water treatment plant.
- Start a recycling club. The class could be in charge of informing and picking up the paper from other classes to be recycled.

[Go to the Student Sheet](#)



National Aeronautics and
Space Administration

[Back to Home](#)

