

SUGGESTED TEACHING STRATEGIES: INVESTIGATIONS & EXPERIMENTS

1. List five ways to end water pollution.
2. List five ways to reduce air pollution.
3. List five ways to reduce the pollution of our land.
4. Investigate noise pollution.
 - a) Test different sounds in your class.
 - b) Listen for possible noise pollution.
 - c) Make a chart for noise pollution levels.
 - d) Rate the sounds from high to low.
5. Remote sensing devices are now being used to detect air pollution from cars. If a car is found to be highly pollutant, a digital camera records the license plate and the owner is contacted.
 - a) Research these remote sensing devices. Describe how they function, how they use infrared beams, and who uses them.
6. Did you know that beer makers are now recycling brewery waste and transforming it into a gasoline additive? What other industries could recycle waste from their manufacturing? How could they do this? Explain.
7. On March 20, 1990, a supertanker spilled 11 million gallons of crude oil into Alaska's Prince William Sound. **Research this Alaskan oil spill.**
 - a) How did it hurt the environment?
 - b) What effects did it have on the sea animals, fish, and other wildlife in the area?
 - c) How did workers and volunteers clean up the oil spill?
 - d) How did workers, volunteers, and others help rescue sea animals?
 - e) How much time passed before sea animals, fish, and other wildlife returned to Prince William Sound?
 - f) What is Prince William Sound like today?
8. The 15 nations that once formed the Soviet Union (U.S.S.R.) face serious pollution problems today. **Research this topic.**
 - a) List and describe the most significant pollution challenges in those regions.

- b) How has the pollution affected the lives of the people in those regions? How has it affected their health?
 - c) What steps are being taken to help the people in those regions?
 - d) What steps are being taken to heal the earth in those regions?
9. Did you know that perfumes, colognes, and hair sprays contain volatile organic compounds that react in the air to form smog? To resolve this problem, many manufacturers are repackaging these products; they are changing them from aerosol cans to pump containers.
 - a) Have you ever used an aerosol can product? Would you be willing to use a product from a pump container instead?
 - b) How would this help our environment?
10. Research recycling.
 - a) How are aluminum, steel, paper, plastic, and glass recycled?
 - b) List other things that are recycled.
 - c) If you could recycle anything in the world, what would it be? How would you do it?

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Pollution

Students and Teachers Guide

GLOSSARY

Agricultural runoff: Water that is contaminated by pesticides and animal wastes; it flows into streams or rivers, or it sinks directly into the ground.

Air pollution: Contamination of the air.

Clean Air Act: A law passed to regulate air pollution.

Contaminate: To pollute by contact or mixture.

Decibels (dB): The measurement of sound waves. A person begins to hear sound at 0 decibels.

70 dB: The level where sounds become annoying or uncomfortable.

85 dB to 90 dB: Levels where sounds can begin to cause physical damage to the ear.

Environmental Protection Agency (EPA): A governmental, regulatory agency which serves to protect the environment.

Methanol: A mixture of alcohol and gasoline. When burned, this mixture releases fewer pollutants into the environment.

Noise pollution: When sound causes physical harm, or is annoying to somebody.

Pollution: Contamination (as a natural resource) with man-made waste.

Reservoir: An artificial lake where water is collected and kept in quantity for use.

Warning signs for damaging noise pollution:

1. If you have to shout to be heard only a few feet away.
2. If your ears ring or feel "full."
3. If sounds are muffled for a few hours after exposure to the noise.
4. If there is so much background noise that you have trouble understanding conversation.

Water cycle:

1. Water evaporates into the air.
2. The water vapor collects and forms clouds.
3. When the clouds become heavy with moisture, water falls to the earth in the form of rain or snow.
4. Some of the water soaks into the ground; other water returns to the waterways (ponds, streams, rivers, oceans).
5. The cycle starts all over again when the water evaporates.

Water pollution: Contamination of water.

Waterways: Ponds, streams, rivers, and oceans.

QUESTIONS FOR THOUGHT, DISCUSSION, AND FURTHER STUDY

1. What are some ways you and your family can help reduce the amount of air pollution?
2. Can recycling help reduce air pollution?
3. What can you and your friends do to help reduce air pollution?
4. What is smog?
5. What makes sounds pleasant or unpleasant?
6. Is how you feel about a sound affected by your attitude or mood at the time? Or, is it based on how close you might be to the source?
7. If you wear earplugs, can you still damage your hearing?
8. What are some things you' can do to soundproof your home?
9. Will there come a time when we have to choose between watering our fields and supplying our cities with water?
10. Will there come a time when we have to choose between generating electricity or supporting a fish habitat?
11. Will there come a time when we have to choose between building an airport or preserving a wetland?
12. Related to the above, what kinds of choices would you make about water usage? How would you decide?