Pollution
3rd Grade
Cherri Higgins

References:

Take Care of our Earth by Gare Thompson

Benchmark:

Columbus Public Schools 3rd Grade SLC #14

Objectives:

Students will investigate how human activity affects the environment (air, land, and water).

Materials:

• Glue sticks
• Construction paper
• Cut-out pictures of pollution/polluters
• Small garbage bags (plastic)
• 1 piece of fruit
• 1 piece of recycled paper
• 1 piece of recyclable paper
• 2 aluminum cans
• 1 pretend cigarette
• 1 large plastic container (make-shift aquarium)
• outdoor soil (not potting mix)
• 1 trowel

Initial Demonstration:

The class will form a working definition of pollution, and the demonstrator will write it on the board. The class should spend a few minutes brainstorming a list of the different forms of pollution (air, water, soil), and what causes them. The demonstrator should list these items on the board.

Target Observations:

• There are many different forms of pollution.
• Many forms of pollution are produced by humans.
**Target Model:**

- Human activity can and does contaminate the earth’s environment (air, land, and water).
- This contamination, pollution, can be reduced but not avoided.

**Procedure:**

The class will be shown cut-out pictures of pollution and people polluting. The students will be asked to make a Venn diagram on the construction paper and label the three circles with the three types of pollution (air, water, land) listed on the board. They will then be given a bunch of cut-out pictures to paste in the appropriate circles. Some of the pictures may belong in two categories, but the students should try to pick the one best category if possible.

**Target Observation:**

- Different kinds of pollution affect different parts of our environment.

**Target Revised Model:**

- Because we breathe the air, drink water, and grow our food in the ground, all the different kinds of pollution can have an effect on us.

**Procedure 2:**

The demonstrator will show the class two bags of garbage. The class will talk about how much garbage they make in their households everyday. The demonstrator will show the students the contents of one garbage bag (fruit, aluminum can, paper, pretend cigarette). The students will discuss what happens to garbage/waste when it leaves the house. The demonstrator should address misconceptions, and help the students understand that garbage is land-filled, recycled, or discarded into the environment (as pollution).

The class will work together to make a landfill with one of the garbage bags by adding the contents and the bag one-at-a-time to a container of moist soil (outdoor soil, not potting soil). The students should make predictions about what will happen to each item on the worksheet A. The landfill can be left in the class for 1 week and examined to see if their predictions are correct. The demonstrator may have constructed a similar landfill a week in advance to show the class at the end of the lesson. The students will review their predictions after examining the contents of the landfill, and the demonstrator will write average decomposition rates for each item on the board (attachment A).

The class will use the items in the second garbage bag (apple, paper, can, toy cigarette), and try to find alternatives to land-filling them, i.e. recycling, reducing, and reusing. They should write their ideas on the worksheet A.
**Target Observations:**

- Garbage doesn’t just go away or disappear.
- Not all garbage decomposes at the same speed.

**Target Revised Model:**

- Waste that doesn’t decompose well should be kept out of landfills.

**Procedure 3:**

The class will separate into two stations. Station 1 will cover the air pollution topic (pp. 16-22) in *Take Care of our Earth*, by Gare Thompson. Then the group will make two air pollution detectors as follows:

Put some petroleum jelly on the inside of a petri dish, place the dish in open air for 1-2 days, and examine the particle accumulation. The students should try to choose a place where they expect low air pollution and high air pollution to place their dishes.

Station 2 will cover the water pollution topic (pp.10-15) in *Take Care of our Earth*, by Gare Thompson. The group will make a set of water bottles as follows: fill three clear plastic bottles with tap water, bottled water, and rain/pond water. Label the jars and wait a few hours. The students can then discuss which water probably had the most pollution.

**Target Observations:**

- There were things sticking to the petroleum jelly.
- Tap water and bottled water look a little different at first, but end up looking the same.
- The pond water bottle had stuff settle to the bottom of it.

**Target Revised Model:**

- The dirtier Petri dish and bottles had the most pollution.

**Summary:**

Pollution comes in many forms. Much of it is made by human beings. It can affect everything in our environment. Garbage doesn’t just go away, and some types of waste decompose slower than others. Because of this, we should try to minimize our garbage, and recycle whenever possible. Pollution is also all around us- even in the air we breathe, the water we drink and the food we eat (soil contamination).
Pollution worksheet

Name_____________________

1. Waste can be__________________________________________________________
   ____________________________________________________________________

2. What will happen to landfilled:

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<thead>
<tr>
<th></th>
<th>Fruit</th>
<th>Plastic bag</th>
<th>Paper</th>
<th>Pop can</th>
<th>Toy cigarette</th>
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3. How else can we treat waste?

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