

# Elementary School Experiment

This experiment is designed to help you to understand the difficulties involving oil spill cleanups.\* To perform this experiment you will need the following materials:

- One cake pan or similar container approximately 20 cm x 20 cm;
- 480 mL of clean pea-size gravel;
- 480 mL of water;
- 480 mL clear plastic cup;
- An eyedropper or plastic spoon;
- Three pipe cleaners;
- A piece of plastic wrap 10cm x 5 cm;
- Ten cotton balls (use real cotton);
- A piece of nylon stocking 10cm x 5 cm;
- 120 mL of wood chips;
- Four paper towels; and
- 30 mL of dark olive oil.

**Teacher Preparation:** This activity is designed for students to work in groups of three.

1. Wash the pea-size gravel
2. Place the 480 mL of pea-size gravel on one side of the cake pan/container, and pour all of the water on the other side. Make sure that most of the pea-size gravel remains on one side of the container. This material is to represent a river bank, a lake shore, or an ocean beach.

**Procedure:** Complete each of the following steps, and observe what happens.

1. Divide the class into groups of three. Provide each group with a cake pan/container prepared as described above, a plastic cup, three pipe cleaners, an eyedropper/plastic spoon, ten cotton balls, a piece of nylon stocking, four paper towels, a piece of plastic wrap and wood chips.
2. Have each student make an animal from the pipe cleaners and lay it on the gravel next to the water.
3. Explain to the students that they are going to clean up an oil spill that occurred at a local river, lake or ocean beach (you decide). Inform the students that the gravel represents the bank, shore or beach of the water body you selected.
4. Pour 30 mL of olive oil on the water of each group's model. Have one student blow the oil toward the gravel to simulate water movement. The students should then attempt to clean up the water, shore and animals using any of the materials provided. Encourage the students to test each material and to clean carefully so they can determine which material works best. Have the students place any oil and water they removed from the container in the plastic cup.

**Interpretive Questions:** As the groups of three perform the experiment ask them to observe what happens and answer the following questions. Afterwards, the groups of three can join together and discuss their discoveries.

1. Which cleanup material proved to be the best for cleaning up the water? Which material worked the best for cleaning up the "shoreline?"
2. Was there any difference in cleaning up the water when the conditions were calm and when the conditions were rough (blowing on the water)?
3. Is there any way that a spill can be contained in one area? How could contaminants spread from the area where the spill occurred?
4. How might people be exposed to contaminants? How might plants and animals be exposed to contaminants?
5. What would happen if the oil spill was not cleaned up?

**Answers to Questions**

**\*This experiment is printed on the back of the grade school "Hazardous Waste" poster, part of the *Water Resources Education* poster series.**