



LSU

LOUISIANA STATE UNIVERSITY

OIL SPILL SIMULATION

Materials

For each group of 3-4 students:

- 1 aluminum pie pan
- water
- 2 tablespoons of vegetable oil
- cup of sand
- medicine dropper
- paper towel
- cotton ball
- tweezers
- wooden toothpicks
- metric ruler
- safety goggles (one per student)
- liquid detergent
- small piece of brown fake fur (to represent an elephant seal)
- feather - use sterilized feathers from a pillow (to represent a penguin or skua)

National Standards

A: Science as Inquiry

H: Life Science

Science and the Environment

Source

taken from:

<http://www.proteacher.com/090069.shtml>

In this activity students will learn what materials can be used to clean up oil spills.

Procedure

1. Fill one end of the pan with sand, creating a small beach about one fourth the length of the pan and about 2 cm deep.
2. Fill the remaining portion of the pan with water; reform the "beach", if necessary.
3. At the end of the pan opposite the beach area, dip your finger in and out of the water once every few seconds to create waves.
4. Place the piece of fur and the feather into the pan. Predict what might happen when oil is added to this environment. Before oil is added, discuss with your team methods of cleaning up an oil spill with the materials provided.
5. Add two tablespoons vegetable oil to the environment and onto the fur and feather.
6. As the oil spill spreads out, stick your finger in the center. Observe what happens when your finger is removed.
7. Put two drops of liquid detergent on part of the oil spill. Observe what happens.
8. Use the wooden toothpicks, cottonball, paper towel, and dropper to recover as much oil as possible. Use tweezers to handle the paper and cotton. Write down any observations.
9. Clean the feather and fur. Allow to dry overnight. Test for cleanliness. Record observations.

Post-activity questions

1. What happened to your finger when it was dipped in oil?
2. What effect did the detergent have on the oil?
3. Which material(s) absorbed the oil most easily?
4. Describe any problem you encountered trying to remove the oil from the water.
5. What affect do wind and wave action have on cleaning up an oil spill?
6. Describe the method you employed to clean the fur and feather. How effective were these methods.