Conduct a Hands-on Activity: *Can You Undo Pollution?*

Have your child attempt to clean "oil" from an "ocean."

Prepare the following:

1. Create a mock "ocean" in a container. Use a leak-proof container such as a dish tub, storage container, or aluminum roasting pan that is wider than it is deep to provide a large water surface area. Fill the container half full with water.

2. Prepare "oil" by mixing 1/4 cup of vegetable oil with about 1/2 teaspoon cocoa powder.

3. Have some paper towels and a clear plastic cup or glass on hand.

4. Provide rubber gloves and goggles, if desired. (The vegetable oil is safe for your child to work with, but safety equipment sets a good example and makes them feel like "real" scientists!)

Gather a selection of materials that your child can use to try to clean the oil from the water. Suggestions: cotton balls, sponges cut in small pieces, egg cartons, paper towels, toilet paper, fabrics, feathers, fake fur, coffee filters or muffin liners, chenille stems, plastic spoons and knives, small plastic and/or paper cups, foil, wax paper.

Let your child know that the prepared "oil" is not real crude oil, which is a fossil fuel; it is vegetable oil with cocoa powder, and it is safe for them to handle. Give your child a copy of the *Can You Undo Pollution?* activity sheets and have them read through the information on crude oil and the directions.

Have your child pour the "oil" into their "ocean" and observe the oil and water for a minute or so. Then, give them time to try cleaning up the oil spill in their ocean with each material and to record their observations.

Safety Note: Dispose of the oil and water mixture by pouring it in a planted area. Do not pour it down a drain.

Have a discussion about the oil cleaning experience. For example, they may notice that one particular material was the most absorbent, or that trapping the oil in one area first allowed them to remove more of it from the water. Discuss their ideas for cleaning a real crude oil spill. Talk about how oil in the ocean affects the environment. For example, it harms and kills fish and other animals, such as sea birds, seals, and otters.

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Crude Oil

Crude oil is a thick, dark liquid found deep underground. It is a *fossil fuel*, formed from the remains of plants and animals from millions of years ago. We pump crude oil out of the ground and use it to make products like gasoline and plastic. Sometimes we pump oil up from under the ocean. If a well or a pipe in the ocean leaks, oil will get into the water.

Oil has to be moved from where we pump it to places that use it. It can be moved through pipelines, on railways, in trucks, or in tanker ships. If a tanker ship carrying oil has an accident or a leak, oil can get into the water. Crude oil is very thick and sticky. It sticks to and harms sand, rocks, plants, and animals. It is very hard to clean up.

Directions: You will use different materials to try cleaning oil out of water. Crude oil is not safe for you to work with, so the "oil" you will be using is vegetable oil with some cocoa powder in it (to make it look darker). It is very messy, but it will not hurt you.

1. Which material do you predict will work best? Why?

_____

2. Try cleaning oil out of the water with different materials. Observe how well each material works and record your observations below.

Material	Observations

3. How much of the oil were you able to clean out of the water? (Circle one)

    a little   some   a lot   all of it

4. Which material worked the best? _____

5. Why do you think it worked best? _____

_____

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