

OIL SPILL CLEANUP

Learn the science behind an oil spill cleanup.

This hands-on experiment teaches students the issues surrounding environmental cleanup from the perspective of an environmental engineer and an oil company owner responsible for the cleanup. They must be familiar with different methods of cleanup and then effectively communicate these strategies with the community, the cleanup crew and the company/person behind the spill.

MATERIALS

- One aluminum pie pan or baking tin
- Bird feathers
- One plastic spoon for skimming oil from the pie pan
- Oil-absorbing cloth pads for absorbing oil (obtained by cutting big sheet into squares or using cotton balls/squares)
- One small squeeze bottle of Dawn (or any “grease-fighting”) dishwashing detergent labeled “dispersant”
- Pitcher of water
- Plastic squeeze bottle (about 100 mL) containing dark vegetable oil (can be died with food coloring)

METHOD

1. Brainstorm different methods for cleaning up an oil spill and discuss how effective and expensive those suggestions could be.
2. Discuss chosen methods to include skimming, because oil floats; absorbing it onto pads that specifically absorb oil, and adding a dispersant to break up the oil “slick” on the surface into little droplets.
3. Place the pan on a table and add water until it is about half full.
4. Place a small amount (about one tablespoon) of oil (some type of dark vegetable oil or vegetable oil with food coloring added) into the pan.
5. Place a feather in the oily water. After 30 seconds or so, remove the feather to observe the effect of the oil. What impact can students conclude that oil has on birds and other wildlife?
6. Use the skimmer (spoon) to try to remove the oil, noting approximately what percentage of what they removed was oil versus water.
7. Next, use the absorbent cloth to absorb the oil, observing how well the cloth removed the oil from the water.

8. Lastly, have students place one or two drops of “dispersant” into the pie pan and stir it around with the spoon. Students will notice that the oil appears to break up into small droplets. Is this an effective means for cleanup?
9. The water, vegetable oil and dispersant from the pan can be safely washed down the drain; place pans in garbage bags.

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Which oil spill cleanup method was most effective? Which methods are used most frequently by environmental engineers responding to real-life oil spills?

Research more materials to respond to an oil spill. Are they more or less effective than the methods in the activity?

What kind of tools are being used by engineers and other companies to assist in oil spill cleanups around the country?

NOTES
