

Title: Oil Spill Activity



Grade Level:

Middle School

Format:

Activity

Materials:

- Clean, dry feathers
- Four bowls
- Vegetable oil
- Dish-washing detergent
- Hot, cold, and room-temperature water
- 1 tablespoon cocoa powder (optional)

Time estimate:

30 minutes

Set up:

- Mix vegetable oil with cocoa powder
- Fill bowl with water and pour the oil mixture on top
- Fill another bowl with cold water
- Fill another bowl with hot water
- Fill another bowl with hot water and soap

Activity Description

Bridge-in:

To catch students' attention, begin with a short introduction about the Deepwater Horizon Oil Spill.

How many of you are familiar with the Deepwater Horizon Oil Spill?

(pause to let students raise hands)

This oil spill in 2010 is the largest marine oil spill in history. It released 210 million gallons of oil into the Gulf of Mexico, affected 340 miles of coastlines, caused serious health consequences for coastal cities in the area, and decimated populations of wildlife.

Today we are going to be learning about some of the toxic effects of oil spills on wildlife and how something as common as dish soap can be an effective tool for cleanup efforts.

Learning objectives:

- *Students will be able to describe the effects of oil spills on wildlife*
- *Students will be able to demonstrate how conservation and cleanup efforts approach wildlife rehabilitation, using dish soap and seabirds as an example.*
- *Students will gain an understanding of water pollution using oil spills as a primary example.*

Pre-assessment:

There are many types of animals that live in water but there are also animals that rely on water bodies like rivers, lakes and oceans for their food.

- *Can you name some animals that don't live in the water but might use it for food?*
 - Humans! Birds like Pelicans, seagulls, other water birds, raccoons, grizzly bears,
- *Today we're focused mostly on birds, can you name some examples of ocean and water birds?*
 - Ducks, geese, pelicans seagulls, sandpipers, great blue heron
- *In what ways do these water birds use these water bodies?*
 - Food, habitat,
- *What do feathers do for birds?*
 - Some birds can swim/dive into the water, their feathers are specially designed to repel water
 - Feathers help birds with flight
 - Some feathers, like the downy feathers closest to a bird's body help protect them from cold temperatures.

Activity

In today's activity we're going to be looking at how an oil spill can affect bird life.

- *First dip your feathers into this bowl of clean water. What do you notice about how the feathers interact with the water?*
 - Are the feathers wet? Dry?
 - What happens if you shake the feathers?
- *Next dip some of the feathers into the bowl with the oil spill. You're imitating what happens when a bird lands on an oil slick on the ocean.*
- *Take a look at the feathers now, and then try to answer the following questions:*
 - *What happened to the feathers when they got oiled?*
 - *How do you think this might affect a water bird wearing these feathers?*
- *Now try three methods of cleaning feathers:*
 - *Cold water washing. Put some cold water in a bowl, and then try washing some of the oiled feathers in it. Watch what happens.*
 - *Hot water washing. Put some hot water in a bowl, and then try washing some of the oiled feathers in it. Watch what happens.*
 - *Washing with detergent. Put some hot water and detergent in a bowl, and then try washing some of the oiled feathers in it. Watch what happens.*

Post assessment:

- *Which method worked best?*
- *Imagine that you're washing a real, live bird that has been oiled. What things would you need to think about? Which method would you choose to clean the bird?*

Summary/Closing

- Cleanup in the aftermath of the Deepwater Horizon oil spill is extremely costly. It took years to clean up the majority of the leaked oil, and longer still for the environment to recover.
- It's estimated that over 800,000 birds died as a direct result of the oil spill
- Understanding the long-lasting negative impacts of pollution events like the Deepwater Horizon oil spill can help us prevent disasters like this in the future.

Resources:

Provide sources for the activities and information used in this activity

<http://response.restoration.noaa.gov/training-and-education/education-students-and-teachers/find-best-way-clean-oil-bird-feathers.html>