

A DIRTY JOB

Background Information for Activity Leaders

Overview

Children will use an oil-covered feather to investigate an example of a challenge created when the needs of human populations place the natural environment at risk.

Key Concepts

- Crude oil is used to make many useful products such as gasoline, some medicines like petroleum jelly, and asphalt to pave roads. It is also used to make products found around the home, such as plastics to make toys, paints, and ink.
- Crude oil is transported on large ships that can sometimes leak oil into the environment. Oil floats on water and forms a very thin layer called an oil slick. As the oil spreads on the water's surface it may form a sheen, which looks like a rainbow.
- Oil spills are very damaging to the environment. Oil spills affect living things in many habitats. Animals that live in the bottom of the ocean, fish, marine mammals, and birds may become very ill or die as a result of oil spills.
- Birds cannot fly or keep warm when their feathers are sticky with crude oil. If a bird cannot fly, it may drown, become stranded without food, or it can become easy prey to other animals.
- Feathers cannot keep a bird warm when they are covered with crude oil. Oiled birds suffer from hypothermia, a lowering of body temperature, causing them to freeze to death.
- Crude oil can also cause their skin to become irritated. Birds that try to remove the irritating oil from their feathers and skin may accidentally eat the oil while trying to clean themselves with their beaks. Since crude oil is a poison, it can make birds very sick or cause them to die.
- The long-term effects of oil spills are not fully documented.

What to Expect

- Children may have seen the sheen of oil in a puddle of water. The oil sheen looks like a rainbow on the surface of the puddle.
- Children at this grade level will associate animals with their environments for the first time.
- Some children may be allergic to latex, so use latex-free gloves.

A DIRTY JOB



Background Information for Activity Leaders

Common Misconceptions

- *Children may think: "I can't do anything to avoid oil spills."*

They may not be able to help avoid oil spills, but volunteers spend many hours helping to rescue and clean animals following environmental disasters such as an oil spill. They use tools like the ones the children use during this lesson.

- *Children may think: "The effects of an oil spill will not have long-term effects on the environment."*

Oil spills can permanently scar a habitat. Some ecosystems never recover, and this causes long-term impact on the environment.

A DIRTY JOB



Oil Tanker Illustration



A DIRTY JOB



Oil-Covered Wildlife Illustration



A DIRTY JOB

Data Collection Sheet

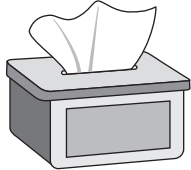

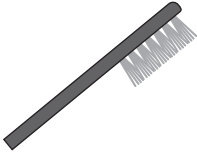
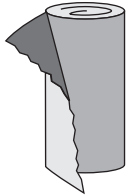
Name: _____

Date: _____

WONDER I think that I can clean my feather by:

RECORD

Data Table

Effectiveness	 cleaning with a baby wipe	 washing with soapy water	 brushing with a toothbrush and soapy water	 blotting with a paper towel
Very Effective				
Effective				
Not Effective				

CONCLUDE

To clean oil-covered birds, I recommend that rescuers use:

Set Up the Expedition

Materials:

For the activity leader:

- (1) large pan for soaking feathers
- (1) oil tanker illustration
- (1) oil-covered wildlife illustration
- (1) empty small water bottle with lid
- (6 oz) vegetable cooking oil
- (2 oz) soy sauce

For each group:

- **A Dirty Job** Learning Cards
- (1) large bowl for water

For each child:

- (1) **A Dirty Job** Data Collection Sheet
- (1) feather covered in "crude oil"
- (1) small bowl of soapy water
- (1) pair of goggles
- (1) baby wipe
- (1) pair of disposable latex free gloves
- (1) toothbrush
- (1) disposable tray

Prepare the demonstration:

1. Select a large, clean feather for the demonstration.
2. Display the bird poster where all the children can see.

Prepare the exploration:

1. To prepare "Crude Oil," fill a small empty bottle with vegetable cooking oil. Add soy sauce to the oil, seal the bottle, and shake the bottle vigorously until the oil begins to look murky.
2. Soak feathers in a large pan of the "Crude Oil" for 2-6 hours.
3. Line each station with newspapers or use art mats to keep the area clean.
4. Place one large bowl of water at each station.
5. Place a "bird survival kit" at each station for each child: goggles, pairs of gloves, baby wipes, paper towels, and toothbrushes.
6. Prepare a small bowl of water mixed with liquid soap for each child.

A DIRTY JOB

Activity Leader's Guide

Group Size: 4-6 children

Time: 40 minutes

Engage

- 1 Gather the children together. Display the pictures of an oil tanker that has run aground and is spilling crude oil into the ocean.

Say:

"Look at this picture and describe what you see." Children may notice a big hole in the ship. They will notice that crude oil is spilling from the hull of the ship into the ocean. Even though the ship is still afloat it can eventually sink if the hole is not repaired.

Say:

"Crude oil is transported in large ships called oil tankers. People use crude oil to make gasoline, plastics and many other useful things. Even though crude oil is very useful, when it spills into the environment it can be very harmful."

- 2 Ask:

"Where do you think oil from this spill will end up?" Eventually the waves or the current will wash ashore many thousands of gallons of the crude oil that spilled from the ship.

- 3

Display the pictures of birds and coastline affected by the oil spill.

Ask:

"What happened to these birds?" The birds are covered in oil. The feathers of birds that become covered in oil become sticky and no longer function. Although not all birds depend on their feathers to fly, all birds need their feathers to stay warm. Oil-covered birds get sick and may die or become poisoned by the crude oil.

Say:

"When an oil spill occurs we must help clean it up! Getting oil off beaches and coastlines is not easy. Getting oil off birds and other wildlife can be even more difficult."

- 4 Display the tray of oil-covered feathers.

Ask:

"How do you think the crude oil could be removed from these bird feathers?"

Explore

- 5 If you are working with more than 4-6 children, divide the children into groups. Distribute the Data Collection Sheets and the Learning Cards. Ask the children to put on goggles and the gloves to protect their eyes and skin from the harmful effects of the simulated crude oil.

Say:

"Today we are going to pretend to rescue a bird from an oil spill. We will use a feather to represent a bird. Follow the directions on the Learning Card to investigate the best way to remove the oil from the model."

- 6 Place an oil-covered feather on each child's disposable tray.

- 7 Allow children enough time to complete the WONDER, EXPLORE, RECORD, and CONCLUDE sections of their Learning Card.

Conclude

- 8 Gather the children together and ask the following questions:

"Which method worked best?" Encourage children to explain the reasons why one method worked better than the others.

Explain:

"Liquid dish washing soap, just like the soap you used today, has been used to clean the birds and animals at some of the world's largest oil spills."

Expand

- 9 Ask the children to follow the EXPAND instructions on their Learning Card. Children will draw a picture of how they can help wildlife in their neighborhood.

- 10 Gather the children together.

Ask:

"What can you do to help wildlife in your neighborhood?" Ask the children to share their pictures of how they plan to help wildlife in their neighborhood.

- 11 Say:
"Congratulations! You have earned your 'Ask Me About Birds' stamp. You are ready to tell people about birds."

A DIRTY JOB

Expedition Learning Card



How will you help clean crude oil from bird feathers?



environment
oil tanker
crude oil



Explore how oil spills caused by human activity can harm wildlife.

1

WONDER How can crude oil be removed from a feather? Think about what you can do with your “bird survival kit!”



Use your Data Collection Sheet to record how you plan to get the oil off your feather.

2

EXPLORE Find a way to clean the crude oil from your feather using the equipment in your bird survival kit. Remember to be gentle. Imagine that you are working on live bird!



A DIRTY JOB

Expedition Learning Card


3 RECORD Rate the effectiveness of each method.

 Record your results on the Data Table.



4 CONCLUDE Which method was best able to clean your feather?

5 EXPAND Make a plan of how you can help protect wildlife in your neighborhood.

 Draw a picture on a sheet of paper that shows the wildlife in your neighborhood and how you could help protect them. Use print or online resources. Research dangers to birds in their community.

Discovery

Why did we do that?

- Feathers help a bird survive.
- Feathers offer protection from the weather.
- Crude oil spills can harm wildlife.
- Cleaning an oil spill is not easy, so we must work hard to prevent them.

Congratulations!

You have earned your "Ask Me About Birds" stamp! Now you are ready to tell people about birds.

