

**Project FOCUS
Best Lessons
SECOND GRADE**

Title of Lesson: Oil Spills and Animals

Theme: Ecology

Unit Number: 1 **Unit Title:** Properties of Matter

Performance Standard(s) Covered (enter codes):

S2CS4a
S2CS4b
S2CS4c
S2CS5
S2P1

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Essential Questions: (1) How do we classify matter?
(2) How can we describe matter?

Content: Investigation of the properties of two of the same types of matter and the effects on the environment.

Key terms: matter, liquids, properties, density

Learning Activity (Description in Steps)

Abstract (limit 100 characters): The purpose of this activity is to teach students about the properties of liquids.

Details: This lesson is designed to show students the effects of oil spills they hear about on television and what makes oil and water different. It shows that water and oil cannot be combined to form a single solution. Instead the two liquids have different properties that make them different. This activity shows the difficulty of cleaning up oil spills and why it has terrible effects on the environment. Especially the harm it does to animals.

Background Information: Before starting this lesson it is best to review the three forms matter and their properties. It is also best to remind the students that two substances of the same state of matter may not share equally in all properties.

Preparation: Fill plastic containers with water then pour a thick layer of oil, maybe a 1/4 inch, on top of the water. Then fill another container with just water and set it next to the container with oil and water. There will need to be 3-4 sets of these containers. Also place a minimum of 10 feathers with each set of containers. Also fill a clear container that can be shaken with water and oil.

Procedure: The students should be split up into small groups of 5-6 kids. The lesson should be started by talking about the different properties of matter and how some of the same types of matter have different properties. Explain that oil and water do not mix and because of their difference in densities the oil will sit on top of the water. Take the smaller container and let the students observe how the oil sits on top of the water. Next shake it up in front of them and allow them to see how the two substances will separate themselves and not mix together. After this part of the lesson allow each of the students to pick up their own feather and observe its properties. Let them throw it in the air and blow it around and just get a general idea about all of its properties. Also encourage them to pay attention to the weight of the feather. After playing with the feather allow each of them to dip the feather into the container containing oil and water and pull their feather out. When they pull it out they should see that the feather is much heavier and it doesn't float around as it did. Next let them try to wash off the feather in the container that is holding clean water. They will see that it is nearly impossible to get the oil off of the feather. Use this opportunity to reinforce that water and oil doesn't mix. Next relate this to the effects on the environment such as plants and animals. The plants and animals will get covered in oil and no matter how hard they try they can't clean it off naturally. Lastly let the students make inferences on how the oil spill will affect fish and other underwater sea creatures.

Possible assessment questions:

1. What makes water and oil different?
2. How does Oil spills affect plants and animals?
3. What would the effect of the oil have on animals that live underwater?

This would be a good opportunity for the students to write in their journals about why we should be careful with oil. Also how it is harmful to the environment. They may also want to draw pictures of before and after scenes of oil spills. Let them try to explain the difference in water and oil based on their observations.

Safety Concerns: Remind the students not to spill the containers and not to touch their eyes with oil on their hands nor any other students. Also tell them not to drink the oily liquids.

Materials Needed (Type and Quantity):

6-8 medium sized containers

10-20 oz Cooking oil

Paper Towels

Newspaper (to place on desks to prevent mess)

Bag of feathers (enough for each student to have atleast 1)

Water

The activity should take anywhere from 30-45 minutes to complete.

Notes and Tips (suggested changes, alternative methods, cautions):

Encourage students to remain seated at their desks during the experiment or things will get real messy.

Sources/References:

- 1) http://www.education.com/activity/article/Learn_About_Oil_Spills/
- 2)
- 3)