

Grade: K-2

What are the Impacts of Energy Use?

Lesson #P10: Oil and Water

Time: 1 class period

Overview:

Students investigate and observe what happens when oil and water are mixed together.

Essential Questions:

- Why do scientists observe things carefully?
- What happens when oil and water mix?

Contents:

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- Student Handouts:
 - Observation Sheet 1
 - Observation Sheet 2

Source: New

Oil and Water

Grades K-2

1 class period

Overview: Students investigate and observe what happens when oil and water are mixed together.

Essential Questions:

- Why do scientists observe things carefully?
- What happens when oil and water mix?

Assessment:

Can students
- Observe and draw or describe a simple event

Vocabulary

- Oil
- Float
- Observation
- Compare

Science Standards

Addressed:

AAAS Benchmarks for Science Literacy:

By the end of 2nd grade, students should know that:
*People can often learn about things around them by just observing those things carefully, but sometimes they can learn more by doing something to the things and noting what happens.

* Describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.

* When people give different descriptions of the same thing, it is usually a good idea to make some fresh observations instead of just arguing about who is right.

Teacher Information and Procedure

Prior knowledge for students: None

Materials needed:

- Observation Sheets 1 and 2

Per 2 or 3 students:

- Glass jar with tight lid, about 3/4 full of water
- Small paper cup with cooking oil
- A squeeze bottle of detergent

What to do in advance:

- Make copies of Observation Sheet 1 (front and back) and Observation Sheet 2
- Assemble materials

What to do during the lesson:

Explore:

- 1) Show students the materials and pass out the Observation Sheet.
- 2) Ask them to predict what will happen if they pour the small cup of oil slowly and carefully onto the water in the jar, without moving the jar
- 3) Have students draw a picture (or write a description) of what they will do, then give them the go-ahead to pour the oil.
- 4) Have them observe carefully and keep a record of their observations by drawing or writing.
- 5) Discuss what happened. Did everyone observe the same thing?
- 6) If children's observations differ, have them observe again as you do the experiment.
- 7) Ask children to predict what will happen if they shake the jar with the lid tightly closed.
- 8) Repeat steps 3-6.

Generalize:

Let the jars sit still so that oil can separate out to the top again, while you discuss:

What might happen if you got oil mixed in with the water you drink? What might happen to birds and animals if oil got mixed in with the water where they live?

Why is it important for scientists to make careful observations?

What is the best thing to do if different scientists make different observations?

Assess:

Give the students Observation Sheet 2.

Tell them you will come around and drop a few drops of detergent on the top of the oil in the jar, and ask them to make and record careful observations of what happens. Discuss the observations.

Extensions, adaptations, and more resources:

For very young students, do the investigation as a whole class, or find an adult or older student to work with each small group.

Experiment with cotton balls or paper towel strips to see if students can "clean up" oil - use a shallow pan instead of a jar.

Observe what happens to feathers that are dipped in water versus feathers that are dipped in oil.

Scientist Name _____

Observation Sheet 1

1. Pour

What we will do:

What happened:

2. Shake

What we will do:

What happened:

Scientist Name _____

Observation Sheet 2

1. What we will do:

What happened: