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Oil and water just don't mix

This activity shows the properties of oil and water, and uses art to create a marbling/oil print.

You will need

- Pencil
- Paper
- Shallow, waterproof tray (e.g. cat litter tray)
- Water
- Vegetable oil (this has similar properties to crude oil, which is a fossil fuel and important energy source)
- Powder paint OR marbling inks
- Watercolour paper, or thick paper
- Newspaper
- Tablespoon

Steps

1

In pairs list as many uses for oil as you can. Then list as many properties of oil and water as you can.

Which pair can think of the most?

2

Carefully fill the tray with water so the water is no more than 3 cm deep.

3

Add 2 to 3 capfuls of vegetable oil into the water. Observe what happens.

4

Choose two colours of powder paint (or marbling ink) and sprinkle a tablespoonful of each colour into the water.

5

Gently mix the powder into the paint and observe what happens when you try to mix it into the oil. (You may decide to add a little more oil or paint at this stage.)

6

If you are happy with the swirling design you have made, try to record

it by gently lowering a piece of clean paper onto the water surface.

7

Remove the paper (print) and quickly place it face up on the newspaper to dry. Observe the areas of paper where the vegetable oil has touched. What do you notice?

8

Experiment with more colours and different amounts of oil and paint to make different patterns.

Analysis/ discussion

Crude oil is a fossil fuel that shares many properties with the vegetable oil used in this activity. What properties of oil make it such a convenient energy source? (Clue: Did you know that they burn oil inside power stations, in order to make electricity?)

In this activity you saw that water and oil do not mix. Oil is very difficult to disperse. You will see that it stains your paper and stays slippery long after the water has dried. This is one of the properties that make oil slicks harmful to the environment.