



Understanding the Effects of Oil and Water - Making Mousse

You will need:

Glass Jar with a screw lid

Water

Vegetable Oil

1. First, get your glass jar and half fill it with water

2. Add about half a cup of vegetable oil and screw the lid on tight!

Pass the jar around.

Discussion Notes: No matter how you handle the jar, up or down, the oil always floats on top of the water (we say that the oil is less DENSE than the water).

3. Next, start shaking the jar, being careful not to drop it.

Discussion Note: The oil and the water appear to be mixing together. This is what happens in the ocean when the oil and the water get mixed up by the waves during strong wave action or during a storm.

4. Keep shaking the jar.

Watch the jar carefully.

Discussion Note: Notice that the oil blobs get smaller and smaller (just as they would on the ocean during a storm that lasted for a long time). At the same time, tiny amounts of water fill up the spaces between the oil blobs. This mixture of oil and water is called emulsified oil or MOUSSE. It is oil mixed vigorously with water.

5. Set the jar aside and then wait a few minutes. Then take another look at the jar.

Discussion Notes: As soon as you stop shaking the jar, the oil that was all mixed up with the water will begin to separate out. The oil will once again float up to the top, and the more dense water will stay at the bottom. Oil floats! The mousse that you make by shaking oil in a jar doesn't last very long. In a few minutes the oil and water will un-mix back into separate layers. Sometimes it stays a mousse for a long time and sometimes it doesn't. Scientists aren't sure why this is the case but are looking into the reasons for this.

Students might wish to try different kinds of water and oil to see if they behave differently.