**COSEE Hands-On Activities**

**USA Science & Engineering Festival**

**Grouping: Oil/Contaminants in the Ocean**

**Lesson/Activity:** Making Mousse

<http://response.restoration.noaa.gov/audience_subtopic_entry.php?entry_id=272&subtopic_id=27&audience_id=2>

**Materials**

* 2 glass (mason) jars
* 4 cups water (2 cups each jar)
* 1 cup vegetable oil (1/2 cup each jar)

**Instructions**

1. First, get a glass (mason) jar. Fill it half full of water, and then add half a cup of vegetable oil. Screw the lid on (tight!).
2. Next, start shaking the jar (be careful not to drop it).
3. Set the jar aside and wait a few minutes. Then take another look at the jar.

**Explanation**

As you begin to shake the jar, 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. As you continue to shake the jar, if you watch carefully, you'll see that the oil droplets 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.

As soon as you stop shaking the jar, the oil that was all mixed up with the water begins to separate out. The oil will once again float up to the top, and the more dense water will stay at the bottom. In just several minutes, you'll see that the oil and water separate back into layers. Usually, water movement in the environment prevents the oil and water mousse mixture to separate.

When oil is spilled in the environment, it can first degrade into a mousse that quickly loses its more toxic components. The mousse looks like roof tar, it is less toxic than crude oil, but it is sticky. As the mousse continues to degrade, it starts to take the form of tarballs and tar mats that are more likely to kill plants and animals by sticking to them than due to toxicity.