Name: _____

Oil Floats and Spreads

1. **Get a large, clear glass bowl and some vegetable oil.**

2. **Fill the bowl with water to an inch or two below the rim.**
   Place it on a table, and have everyone crowd around it.

3. **Pour a little oil on the water.**

4. **Now, watch what happens.**
   The oil, even a little drop, will spread out over the water surface and break up into many little blobs. This will happen very quickly.

   Describe what happened in your bowl:

Picture of Step 3

_____

_____

_____

_____

All oils are **not** the same. Different oils, whether diesel for a truck or heating oil for a house or oil for an engine, all spread out at different rates.

Also, note that the oil floats. This seems a simple observation but it is very important. Since you have a glass bowl, you can see two layers, or **phases**: oil and water, which do not mix. You have probably seen this before in some bottles of salad dressing. In the bottle of dressing, just like in the bowl, the oil stays on the top and the water stays on the bottom.

When oil is spilled onto the ocean, because it stays on the top of the water in this same way, it can be pushed by the wind in whatever direction the wind is going. **Wind**, along with **currents** and **tides**, are the three main factors that affect the transportation of oil during an oil spill. We look at all three of these to predict where the oil might go and what it might hit.

Making Mousse

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!). Pass the jar around.

1. Note that 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).

2. Next, start shaking the jar (be careful not to drop it).

1. Describe what is happening: _____

_____

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_____

This mixture of oil and water is called emulsified oil or MOUSSE. There is an animal called a moose. There is mousse you put in your hair to style it a certain way. But this MOUSSE is emulsified oil. It is just oil mixed vigorously with water.

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

Describe what you see now:

_____

_____

The mousse that you make by shaking oil in a jar doesn't last very long. In just several minutes, you'll see that the oil and water unmix back into separate layers.

Usually, once oil that has spilled on the ocean has formed a mousse, it also eventually unmixes from the water in this way (though it usually takes longer).

But sometimes, it stays a mousse. We aren't quite sure why mousse sometimes lasts for a long time and sometimes doesn't. Maybe someday you'll be the one to research this mystery and find the answer!