

# Do Oil and Water Mix?

## You will need:

- A clear glass jar or other container
- Vegetable oil
- Water
- Food coloring
- Salt



## What you do

1. Pour about 4 inches of water into the jar.  
What do you think will happen when oil is added?
2. Add 1 inch of oil. When it has settled see if the oil and water have mixed.  
Where is the water? Where is the oil?  
What do you think will happen when food coloring is added?
3. Add a drop of food coloring to the jar.  
What happens to the drop?  
What do you think will happen if a little salt is sprinkled on the top?
4. Sprinkle a little salt on top of the oil and watch carefully.  
What happens to the food coloring? What happens to the salt?
5. Add more salt to keep the action going.

## What's going on?

Oil and the water don't mix. They are **immiscible**. Oil is less dense than the water, so when you add oil to the jar it sits in a layer on top of the water. The food coloring sits on top too, until you add the salt...

Salt doesn't dissolve in oil. It is **insoluble**. It is also **denser** than the oil. When gravity pulls the salt down to the bottom of the glass the salt drags some of the oil with it in little blobs. As the salt reaches the water it starts to dissolve and the blobs of oil rise up to join the layer on the top again.

Once all the salt you've added has dissolved, the mixture calms down - until you add more salt!

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