

What happens when you mix oil and water?



Can you mix oil and water together? You can mix them together and shake as hard as you like but they'll never become friends.....or will they?

See if you can find out how bringing oil and water together can help you do you're the washing up.

You will need:

- Small bowls for the different coloured oil
- Larger bowl for the experiment
- Water
- Food colouring
- cooking oil
- Pipettes or small droppers
- Dish washing liquid or detergent



Method:

1. Add a few drops of food colouring to one of the bowls of oil. Add different colours to the different bowls. Give each bowl a good stir with a spoon or fork.
2. Fill the larger bowl half way with warm water. It's best to use a glass bowl so that you can see into the water from the side.
3. Carefully drop the different coloured oil into the water. Watch what happens.
4. Try stirring the oil and water to see if they will mix.

Stop stirring and have a look, it may have seemed as though the liquids were mixing together but the oil will float up to the top.

Now add a small amount of dish washing liquid and notice what happens now.

The science behind it:

While water often mixes with other liquids to form solutions, oil and water do not. Water molecules are strongly attracted to each other, this is the same for oil, because they are more attracted to their own molecules they just don't mix together. They separate and the oil floats above the water because it has a lower density.

If you really think oil and water belong together then try adding some dish washing liquid or detergent. Detergent is attracted to both water and oil helping them all join together and form something called an emulsion. This is extra handy when washing those greasy dishes, the detergent takes the oil and grime off the plates and into the water, yay!