



Ocean Current Experiment



Have you ever wondered how ocean currents are formed, what factors affect where currents originate from and the direction they flow and why some currents are warm while others are cold? With this quick experiment you will be able to find out more about ocean currents and see how they are formed in front of your eyes!

Set up time: 5 minutes

What do you need?

1. Cold water
2. Ice
3. Boiling water
4. Blue and red food colouring
5. A baking dish



What do you do?

1. First, fill the clear baking dish about 1/3 full of cold water and add a few drops of blue food colouring

Note: Make sure to only put a few drops of the food colouring, you don't want the blue to get too dark otherwise you won't be able to see the current forming.

2. Add 1-2 cups of ice to the cold water and stir. Let it set for a few minutes for some of the ice to melt. Our goal is to have very cold water.
3. While the ice is melting, boil about 4 cups of water. Add red food colouring to the boiled water, this one you will want to make darker, so you can add a few more drops
4. Once both sets of coloured water are ready, gently pour some of the boiling water into a corner of the baking dish filled with cold water. Watch the currents forming!
5. Colder water is more dense than hot water, and so it sinks to the bottom. The hot water in turn, will push through over the cold water and create currents. In the ocean these are faster moving strips of water (like the East Australian Current or North Atlantic Drift)
6. With the introduction of the hot water into the cold one you will be likely to see the formation of some "eddies". Eddies are clockwise or anticlockwise rotating rings that separate from the main flow, while they trap cold or warm water in their centre.



7. Eventually the water will mix together and create tepid (and purple) water, like it would happen in the ocean when two currents meet and mix.

8. In the oceans other factors such as the wind, the Earth's rotation, the salinity (saltiness) of the water, and the shape of the coastline and seabed also play a role in how currents are formed. Have fun exploring current formation!

If you want to learn more about how ocean currents work, watch this short video:

<https://www.youtube.com/watch?v=p4pWafuvdrY>

Or read this article by the National Geographic:

<https://www.nationalgeographic.org/encyclopedia/ocean-currents/>