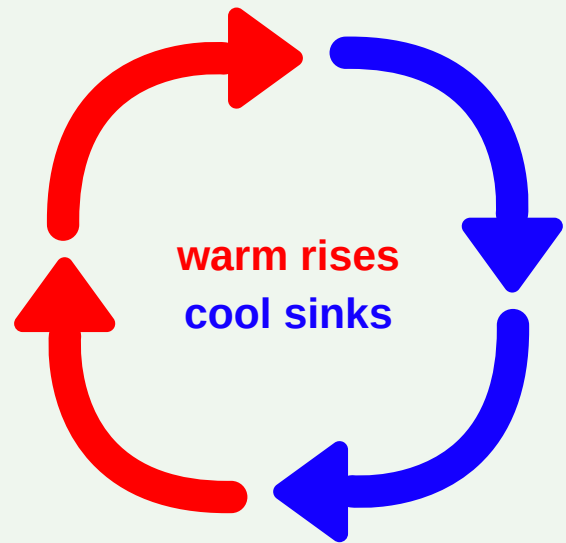


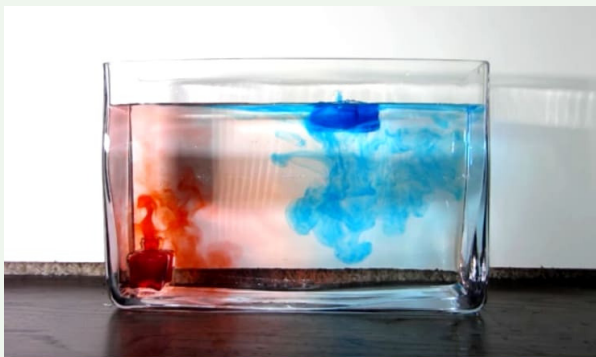
# Convection Currents

Convection currents are heat-driven cycles that occur in the air, ocean, and mantle. They are caused by a difference in temperature, often due to a differing proximity to a heat source. The difference in temperature relates directly to the density of the material, causing this effect. Convection currents can happen with any non-solid substance. Some convection currents are relatively quick cycles, like those in the atmosphere, while others are very slow, like in the mantle. Governed by the principle that warm rises and cool sinks, convection currents cause plate tectonics, thunderstorms, desert and tropical regions, even the Earth's magnetic field!



## The Experiment

### Experiment Set-Up



Source: Rookie Parenting Science

This experiment looks at convection currents in water, but the same principle applies for the air and mantle. You will need a clear rectangular container, water, and red and blue food coloring.

1. Fill the container with water and let it come to room temperature
2. Dye some water blue and put it into the freezer, long enough for it to be cold but not frozen
3. Dye some water red and heat it in the microwave.
4. Pour the cold blue water into one side of the container and the hot red water into the other side of the container
5. Watch the currents form!

Reference: Berkeley UC Museum of Paleontology