

What is convection?

Brief summary:

You will conduct an experiment that demonstrates convection, one of the three ways that heat can be transferred (the other ways are conduction and radiation). In this experiment you see how hot water rises inside a jar of cold water!

WARNING: this activity uses both a knife and boiling water - ask for adult help before starting!

You will need:

- Help from an adult
- Large glass jar or beaker
- Small cup or beaker (it needs to fit inside the jar)
- Food colouring
- Knife
- Plastic wrap
- Rubber band
- Water

What to do:

Step 1. Fill the small cup or beaker with very hot (almost boiling) water and add several drops of food colouring.

Step 2. Stretch the plastic wrap smoothly over the top of the cup and seal it with the rubber band. You will notice that the plastic wrap puffs up - this is because the hot air above the water is expanding!

Step 3. Fill the large jar or beaker with cold water from the tap, so that the jar is almost full.

Step 4. Use a pair of tongs to pick up the cup of hot water and place into the large jar. The top of the small cup should be well below the level of water in the large jar (see diagram on next page).

Step 5. Using your knife, slice open the the plastic wrap (with one long slice) and watch what happens!



What is convection?

When the plastic wrap on the small cup is cut, the hot water and food colouring is released. What happens?



Take it further:

Have a look at our CONDUCTION experiment!

Big questions:

- How does convection affect ocean currents?
- How do ocean currents affect weather and climate?
- How does ocean temperature affect weather and climate?