

# Air Pressure Experiment

Have you ever heard that hot air rises? That's true! As air heats up, its molecules expand and spread out, making the air less dense than it was before. It floats up through the denser cooler air. As the warm air rises, it starts to cool off and its molecules move closer together, causing it to sink again. This circulation is called **convection**, and the rising and falling of the air are called **currents**. Convection currents are part of what causes different kinds of weather.

We can't see convection in the air; do you think water might act the same way? Do this experiment to find out!

**You should have an adult help you with the hot water and the knife.**

## What You Need:

- Large glass jar or clear bowl
- Small cup (it needs to fit inside the jar or bowl)
- Food coloring
- Knife
- Plastic wrap
- Rubber band
- Water

## Directions:

1. Fill the small cup with very hot (almost boiling) water and add several drops of food coloring (I like red). Stretch the plastic wrap smoothly over the cup and seal it with the rubber band. *(The plastic wrap will puff up—this is because the hot air on the surface of the water is expanding!)*
2. Fill the jar or bowl almost full with cold water from the tap *(colder the better)*.
  - *Optional: Add food coloring to the cold water (I like blue).*
3. Use a pair of tongs to set the cup of hot water in the bottom of the jar or bowl.
4. Slice open the plastic wrap with the knife and watch what happens! *(One long gash should do it.)*

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## REFLECTION:

1. What did you see happen?

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*The hot water was less dense than the cold water surrounding it, so it rose to the top in a convection current.*

2. What happens as the colored water gets to the top? Does it stay there? Why or why not?

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