



# Convection Currents

## Key Concepts

1. Warm air rises
2. Cool air sinks
3. Convection is the action of the warm air rising and cool air sinking.
4. Bodies of warm air are forced to rise by approaching cold masses.
5. Other things can also cause warm air to rise, like mountain slopes.

## Supplies

1. Clear plastic container, about the size of a shoe box
2. Red and Blue food color
3. Blue ice cubes (prepared ahead of time)
4. Room temperature water

## Procedure

Fill the container  $\frac{2}{3}$  with room temp water. Let the water stand for 30 seconds until it is completely still. Place two blue ice cube at one end of the container. Add two drops of red color at the opposite end. Be careful not to disturb the water. What happens?

The cold blue water sinks and the warmer red water rises. This is convection. This is how air behaves as well. Blue water represents a cold air mass; red water represents a warm, unstable air mass.

## Why?

A thunderstorm is caused by unstable air and convection plays an important part. A body of warm air is forced to rise by an approaching cold front. A strong updraft of warm air creates cumulus clouds. The air cools as it rises, condenses, and forms clouds. As condensation occurs, heat is released and helps the thunderstorm grow.

