

Investigation 5 convection reading



Convection Convection is one of the ways HEAT may be carried from place to place. It can occur only in gases like air or liquids like water, because they are free to move. Cool heavy air may enter a window and push warm light air to the top of a room. Water that is heated at the bottom of a tank is pushed to the top of the tank by the cooler and heavier cold water.

In order for a convection current to carry heat from one place to another, a difference in DENSITY must exist within the material. Air which is heated becomes less dense than cold air. The cooler air is more dense and exerts greater pressure than warm air. For example, hot air in a fireplace is pushed up the chimney by the cold air in the room.

Convection currents in the ATMOSPHERE cause some types of rainstorms. Moisture laden air warmed by the sun expands and becomes less dense. Cooler surrounding air pushes the warm air upward where it cools so much that it cannot hold the water vapor it absorbed and precipitation occurs. Convection currents in the air help distribute the heat energy received by the sun. Hot water heating systems operate because of convection, although some systems add a pump to improve the circulation. V. B. I.

What does convection have to do with density?

Think and search question?

How can convection cause rain?

Right there question

Our goal is to read about convection to gain background knowledge for our upcoming experiment

bob
155

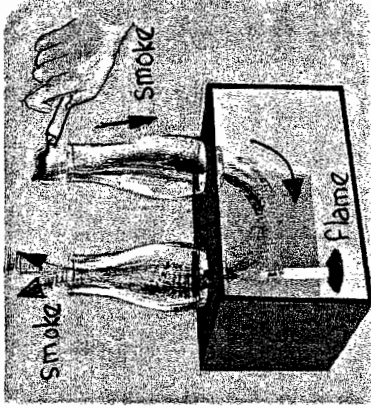
Young Peoples Science Encyclopedia
Volume 5 pg 455

Standard 5Te, 56d

name _____ class _____
team _____ seat _____ date _____

Explain this convection experiment

WHAT DOES COLD AIR DO TO WARM AIR?



In this experiment

- 1 Construct a convection box from a wooden chalk box, piece of glass, and two glass chimneys. Turn the box on one side and cut out two holes on the top side over which the chimneys will be placed. Substitute a piece of glass for the sliding box cover. Place a lighted candle inside the box under one hole. Slide the glass door closed.
- 2 Ignite a dampened rolled paper towel to cause it to smolder. Hold it over the chimney which is not over the candle. Observe the path of smoke.
- 3 As air is heated the molecules move farther away from each other, thus making the air lighter. The cold air is heavier and moves in to push the lighter warm air up.

Think and search questions