Carolina Quick Tips®

Convection Currents

Understanding convection currents is necessary for understanding processes in many sciences, but especially Earth and Environmental Sciences. Convection currents form the basis of wind and weather patterns, ocean currents, the movement of Earth's plates, and more. Students can visualize and experiment with these currents with the help of Carolina® convection fluid (also called rheoscopic fluid).

Materials Required

Carolina® Convection Fluid (GEO8450)

8-oz Glass Bottle (972337)

Hot Plate (736986) or Tea Candle and Support

3 Dram Vial (715063)

Food Coloring (optional)

Activity Procedure A

1. Fill an 8-oz bottle with Carolina® convection fluid.
2. Place the bottle on a heat source like a hot plate on low heat. If a hot plate is not available, place the bottle on a stand above a heat source like a tea candle.
3. Observe the movement of the fluid.

Activity Procedure B

1. Fill a 3 dram vial with Carolina® convection fluid. Seal the vial.
2. Place the vial so that the bottom is touching the palm of a person's hand.
3. Observe the movement of the fluid.





Results/Summary

As a portion of the fluid is heated, the fluid becomes less dense. The lower density causes the heated portion of the fluid to rise until it loses some of the heat energy, cools, and sinks again. As a result, a continuous cycle of heating and rising, cooling and sinking occurs. This is a convection current.

Additional Information

View more information, content links, and products related to this activity at www.carolina.com/takeaways.

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