1-3-2006

Building a Model of Convection; A Student Driven Approach

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Abstract

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Alfred Wegner was the first scientist to suggest that the continents had once moved. Despite a large body of evidence, the scientific world rejected his theory of Continental Drift. This rejection was largely due to the fact that Wegner could not explain how such large bodies, like the continents, could have been moved. Scientists currently believe that the movement of tectonic plates is due to convection currents within the asthenosphere. Energy can be transferred through Conduction, Radiation, and Convection. Convection is unique in that energy is transferred due to density differences caused by differential heating. Convection is a concept that is revisited several times throughout the year in Earth Science.

The purpose of our model was to examine the process of convection. Specifically, students needed to show the relationship between heating and density differences and density differences and movement. Students also needed to demonstrate that they understood the relationship between convection currents and the movement of tectonic plates.