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Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2007 Volume IV: The Science of Natural Disasters

How Heating and Convection Contributes to Natural Disasters

Guide for Curriculum Unit 07.04.01

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This unit is written for a third-grade science class but can also be used by teachers in grades two to five. The premise of the unit was to choose some science concept that young students could grasp as the guiding principle in studying natural disasters. The seminar dealt with disasters of all kinds with a lot of attention given to earthquakes, volcanoes, and weather. This unit concerns convection - the heating and rising of material or fluid and the eventual falling or cooling of that fluid as a source of earthquakes, volcanoes, and weather events such as thunderstorms, hurricanes and tornadoes. Convection can be found deep in the Earth where it drives plate tectonics and drives magma which finds its way up to the surface through volcanic activity. Convection is also an integral part of the oceans as they help spread the sun's warmth around the globe. Likewise, it is convection which powers the weather and causes our winds. The unit includes a teacher bibliography as well as one for children which lists both fiction and nonfiction selections. There are three lesson plans and a few demonstrations throughout the unit. There is also a list of pertinent Web sites.

(Developed for Science, grade 3; recommended for Science, grades 2-5)

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