Key Science Concepts and Skills	
Activities Summaries	**Earth Science Principles**
Activity 1: Taking a Ride on a Lithospheric Plate Students use data from Global Positioning System (GPS) satellites to determine the direction and speed of motion of the North American plate. Based on their findings they then predict where their community will be located in the future.	• Lithospheric plate movement • Sea-floor spreading
Activity 2: Plate Boundaries and Plate Interactions Students build a model to simulate sea-floor spreading. Through a thought experiment, students learn how crust is created and destroyed at divergent plate boundaries. Students look at a world plate tectonic map to explore the different types of plate boundaries. They then describe the plate tectonic setting of their own community.	• Divergent plate boundaries • Convergent plate boundaries • Transform plate boundaries
Activity 3: What Drives the Plates? Students use a variety of liquids to investigate the effects of density on how a material moves and what effects temperature can have on the density of a material. Students then develop a method to determine the density of a variety of rocks. Students complete an experiment to determine the forces that cause the subduction of lithospheric plates.	• Earth's layered structure • Thermal convection as the driving force of plate tectonics • Subduction of plates
Activity 4: Effects of Plate Tectonics Students use maps to discover the relationship between plate tectonics and earthquakes and volcanoes. Students model the rise of magma through the Earth using honey and vegetable oil. Students then hypothesize about why volcanoes occur where they do. Students model subduction and accretion using cream cheese and cheese spread.	• Oceanic trenches • Volcanism at plate boundaries • Hot-spot volcanism • Continental accretion • Earthquakes and plate tectonics
Activity 5: The Changing Geography of Your Community Students create a series of maps showing how the position of the continents has changed over time and also how they may appear 250 million years into the future.	• Paleogeography • Development of the plate tectonic theory • Paleomagnetism