



ISE GRADE 5 SCIENCE CURRICULUM STANDARDS / LEARNING OUTCOMES



<u>Curriculum Standards/Learning Outcomes</u>	<u>Teaching Strategies</u>	<u>Resources</u>
<p><u>Topic Four: Changing Earth</u></p> <p>Earth's Changing Surface (HM Chapter 6)</p> <ul style="list-style-type: none"> • Water covers roughly three-fourths of Earth's surface. • Mountains, canyons, valleys, and plains are among the features that form Earth's solid surface, on land as well as the ocean bottom. • Earth's land features are shaped by destructive forces, such as erosion and weathering, and by constructive forces, such as deposition. <p>Volcanoes and Earthquakes (Earth's Structure, HM Chapter 7)</p> <ul style="list-style-type: none"> • Earth is made up of four layers: inner core, outer core, mantle, and crust. • The upper mantle and crust form the lithosphere, which is broken into plates that move across Earth's surface. • Most earthquakes, volcanic, and mountain-building activity occurs near plate boundaries. 	<ul style="list-style-type: none"> • Observe that a three-fourths of Earth's surface is covered by water. • Identify some features of Earth's surface. • List signs of weathering and erosion by examining examples on the school campus. • Classify rocks based on color, hardness, and texture. • Recognize that rock record shows Earth's continents have moved across time. <ul style="list-style-type: none"> • Identify and describe Earth's layers. • Construct a model of the earth's four layers by using colored clay, a marble, and aluminum foil. (HM – GR5 C-37) • Recognize that Earth's lithosphere is broken into plates that move slowly across the surface. • Define the word "plate tectonics" and explain the kinds of plate boundaries. 	<ul style="list-style-type: none"> • Textbook: Houghton Mifflin Unit C Grade Four (Chapter 6) • Textbook: Houghton Mifflin Unit C Grade Five ▪ Volcano! Nature's Fury (VHS 551.2 VOL) ▪ All About Land Formations (VHS 551.4 ALL) ▪ Dive to the Coral Reefs and the Magic Schoolbus: Inside the Earth (VHS 551.46 DIV) ▪ Rocks and Minerals (VHS 552 ROC) ▪ Dinosaurs: Those Big Boneheads! (VHS 567.9 NYE) ▪ Natural Disasters (VHS 904 NAT) ▪ Secrets of Science (VHS 551 EAR) ▪ Volcano (VHS 551.2 VOL)



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<p>Formation of Mountains (Build a Mountain, FOSS investigation 4)</p> <ul style="list-style-type: none">• A topographic map uses contour lines to show the shape and elevation of the land.• The elevation interval between two contour lines is always the same.• The closer the contour lines, the steeper the slope and vice versa.• Symbols on topographic maps represent a number of landforms and other natural and human-made features.	<ul style="list-style-type: none">• Recognize that most earthquakes and volcanic activity occur near plate boundaries; on land or below the ocean.• Identify three classes of volcanic cones: shield, cinder, and composite.• Describe how tsunamis are formed from earthquake <ul style="list-style-type: none">• Recognize that mountain building is closely associated to plate boundaries.• Identify four basic mountain building process: folding, faulting, doming, and volcanic.• Model the formation of a mountain at a converging boundary by using sand, cardboard, and wax paper or foam . (HM C-61, FOSS investigation 4)• Demonstrate the effect of acid rain by pouring vinegar on calcite and halite. (HM GR5 C-13)• Construct a paper-mache model of a specific volcano after doing research on the internet.• Give an oral report on an earthquake.• Model the effects of an earthquake HM GR4 C-13.	<ul style="list-style-type: none">• FOSS Kit: Landforms, Unit 4



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<p>Slow Surface Changes (FOSS investigations 2 and 3)</p> <ul style="list-style-type: none">• Weathering is the breaking down of rocks at Earth's surface by natural processes.• Erosion is the process in which weathering rock is picked up and carried away by water, wind, or ice.• Deposition is the process by which eroded earth materials settle out in a basin.• Water flows downhill.• The direction water flows in a stream depends on the barriers along its course.• The steepness of the slope of the Earth's surface affects the amount of erosion and deposition by a stream.• The quantity of water flowing through a stream channel affects the amount of erosion and deposition.• Humans can make changes to streams and stream channels that affect the amount of erosion and deposition.	<ul style="list-style-type: none">• Model how water is renewed through the water cycle (HM GR4 C-39 or FOSS investigations 2 & 3).• Observe the process of erosion, deposition, and stream flow with a model. (FOSS 2 & 3)• Investigate water flow over earth materials in a stream table.• Relate the processes observed to real landforms such as the Grand Canyon.• Investigate how slope of the land affects erosion and deposition.• Investigate how a flood flow affects erosion and deposition.• Design and conduct investigations to discover how changes humans make to stream channels affect stream processes.• Use scientific thinking processes to conduct investigations and build explanations: observing, communicating, comparing, organizing and relating.	