

6th Grade: Science: Focus on Earth Science

Student Name:

General Standard	Standard Notation	Standard Description	August 2010	September 2010	October 2010	November 2010	December 2010	January 2011	February 2011	March 2011	April 2011	May 2011
1.0 PLATE TECTONICS AND EARTH'S STRUCTURE: Plate tectonics accounts for important features of the Earth's surface and major geologic events	6.1.a	Evidence of plate tectonics is derived from the fit of the continents; the location of earthquakes, volcanoes, and midocean ridges; and the distribution of fossils, rock types, and ancient climatic zones.										
	6.1.b	Earth is composed of several layers: a cold, brittle lithosphere; a hot, convecting mantle; and a dense, metallic core.										
	6.1.c	Lithospheric plates the size of continents and oceans move at rates of centimeters per year in response to movements in the mantle.										
	6.1.d	That earthquakes are sudden motions along breaks in the crust called faults and that volcanoes and fissures are locations where magma reaches the surface.										
	6.1.e	Major geologic events, such as earthquakes, volcanic eruptions, and mountain building, result from plate motions										
	6.1.f	Explain major features of California geology (including mountains, faults, volcanoes) in terms of plate tectonics										
	6.1.g	Determine the epicenter of an earthquake and know that the effects of an earthquake on any region vary, depending on the size of the earthquake, the distance of the region from the epicenter, the local geology, and the type of construction in the region.										
2.0 SHAPING EARTH'S SURFACE: Topography is reshaped by the weathering of rock and soil and by the transportation and deposition of sediment	6.2.a	Water running downhill is the dominant process in shaping the landscape, including California's landscape.										
	6.2.b	Rivers and streams are dynamic systems that erode, transport sediment, change course, and flood their banks in natural and recurring patterns.										
	6.2.c	Beaches are dynamic systems in which the sand is supplied by rivers and moved along the coast by the action of waves.										
	6.2.d	Earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats.										
3.0 HEAT (THERMAL ENERGY) (PHYSICAL SCIENCE): Heat moves in a predictable flow from warmer objects to cooler objects until all the objects are at the same temperature	6.3.a	Energy can be carried from one place to another by heat flow or by waves, including water, light and sound waves, or by moving objects.										
	6.3.b	When fuel is consumed, most of the energy released becomes heat energy.										
	6.3.c	Heat flows in solids by conduction (which involves no flow of matter) and in fluids by conduction and by convection (which involves flow of										
	6.3.d	Heat energy is also transferred between objects by radiation (radiation can travel through space).										
4.0 ENERGY IN THE EARTH SYSTEM: Many phenomena on Earth's surface are affected by the transfer of energy through radiation and convection currents	6.4.a	The sun is the major source of energy for phenomena on Earth's surface; it powers winds, ocean currents, and the water cycle										
	6.4.b	Solar energy reaches Earth through radiation, mostly in the form of visible light.										
	6.4.c	Heat from Earth's interior reaches the surface primarily through convection.										
	6.4.d	Convection currents distribute heat in the atmosphere and oceans										

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	6.4.e	Differences in pressure, heat, air movement, and humidity result in changes of weather.										
5.0 ECOLOGY: Organisms in ecosystems exchange energy and nutrients among themselves and with the environment	6.5.a	Energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.										
	6.5.b	Matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.										
	6.5.c	Populations of organisms can be categorized by the functions they serve in an ecosystem										
	6.5.d	Different kinds of organisms may play similar ecological roles in similar biomes.										
	6.5.e	The number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition.										
6.0 RESOURCES: Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation	6.6.a	The utility of energy sources is determined by factors that are involved in converting these sources to useful forms and the consequences of the conversion process.										
	6.6.b	Different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests, and know how to classify them as renewable or nonrenewable.										
	6.6.c	The natural origin of the materials used to make common objects										
7.0 INVESTIGATION AND EXPERIMENTATION: Scientific progress is made by asking meaningful questions and conducting careful investigations. (relates to other standards above)	6.7.a	Develop a hypothesis.										
	6.7.b	Select and use appropriate tools and technology (including calculators, computers, balances, spring scales, microscopes, and binoculars) to perform tests, collect data, and display data.										
	6.7.c	Construct appropriate graphs from data and develop qualitative statements about the relationships between variables.										
	6.7.d	Communicate the steps and results from an investigation in written reports and oral presentations.										
	6.7.e	Recognize whether evidence is consistent with a proposed explanation										
	6.7.f	Read a topographic map and a geologic map for evidence provided on the maps and construct and interpret a simple scale map.										
	6.7.g	Interpret events by sequence and time from natural phenomena (e.g., the relative ages of rocks and intrusions).										
	6.7.h	Identify changes in natural phenomena over time without manipulating the phenomena (e.g., a tree limb, a grove of trees, a stream, a hillslope).										