

Swain CORE (Semester-long) Curriculum Map for (6th Grade SCIENCE)

Transfer Goals:

Students will be able to independently use their learning to:

- Apply knowledge of the sciences to engage in writing and discussions.
- Conduct investigations, individually and collaboratively, to answer questions.
- Think critically and analytically to evaluate scientific claims for validity.
- Willingly take intellectual risks without fear of failure.

Unit #/Name	Scientific Process	Biology/ Ecology	Earth Science	Chemistry/ Thermal Energy	Physical Science	Solar System
Big Idea	Scientific Method Using lab equipment SI Measurement	1. Plants 2. Ecosystems	1. Earth Structure 2. Soil 3. Earthquakes/ Volcanoes 4. Stewardship	1. Atoms 2. Changes of State 3. Properties of Matter 4. How Heat Moves	Sound Waves Light Waves Properties of Waves	Earth-Sun-Moon System Exploration Solar System
Timeline	8 Days, throughout the semester	15 Days	16 Days	11 days	20 Days	10 Days
State Standards	Science as Inquiry	6.L.1 Understand the structures, processes and behaviors of plants that enable them to survive and reproduce. 6.L.2 Understand the flow of energy through ecosystems and the responses of	6.E.2 Understand the structure of the earth and how interactions of constructive and destructive forces have resulted in changes in the surface of the Earth over time and the effects of the lithosphere on	6.P.2 Understand the structure, classifications and physical properties of matter. 6.P.3 Understand characteristics of energy transfer and interactions of matter and energy.	6.P.1 Understand the properties of waves and the wavelike property of energy in earthquakes, light and sound waves.	6.E.1 Understand the earth/moon/sun system, and the properties, structures and predictable motions of celestial bodies in the Universe.

		populations to the biotic and abiotic factors in their environment.	humans.			
Related Competencies/ NGSS	MS-ETS1-1 Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2 Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. MS-ETS1-3 Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the	6.L.1.1 Summarize the basic structures and functions of flowering plants required for survival, reproduction and defense. 6.L.1.2 Explain the significance of the processes of photosynthesis, respiration, and transpiration to the survival of green plants and other organisms. 6.L.2.1 Summarize how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within food chains and food webs (terrestrial and aquatic) from producers to consumers to decomposers.	6.E.2. Summarize the structure of the earth, including the layers, the mantle and core based on the relative position, composition and density. 6.E.2.2 Explain how crustal plates and ocean basins are formed, move and interact using earthquakes, heat flow and volcanoes to reflect forces within the earth. 6.E.2.3 Explain how the formation of soil is related to the parent rock type and the environment in which it develops. 6.E.2.4 Conclude that the good health of humans requires: monitoring the lithosphere, maintaining soil	6.P.2.1 Recognize that all matter is made up of atoms and atoms of the same element are all alike, but are different from the atoms of other elements. 6.P.2.2 Explain the effect of heat on the motion of atoms through a description of what happens to particles during a change in phase. 6.P.2.3 Compare the physical properties of pure substances that are independent of the amount of matter present including density, melting point, boiling point, and solubility to properties that are dependent on the amount of matter present to include volume, mass and weight.	6.P.1.1 Compare the properties of waves to the wavelike property of energy in earthquakes, light and sound. 6.P.1.2 Explain the relationship among visible light, the electromagnetic spectrum, and sight. 6.P.1.3 Explain the relationship among the rate of vibration, the medium through which vibrations travel, sound and hearing.	6.E.1.1 Explain how the relative motion and relative position of the sun, Earth and moon affect the seasons, tides, phases of the moon, and eclipses. 6.E.1.2 Explain why Earth sustains life while other planets do not based on their properties (including types of surface, atmosphere and gravitational force) and location to the Sun. 6.E.1.3 Summarize space exploration and the understandings gained from them.

	criteria for success. MS-ETS1-4Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.	6.L.2.2 Explain how plants respond to external stimuli (including dormancy and forms of tropism) to enhance survival in an environment. 6.L.2.3 Summarize how the abiotic factors (such as temperature, water, sunlight, and soil quality) of biomes (freshwater, marine, forest, grasslands, desert, Tundra) affect the ability of organisms to grow, survive and/or create their own food through photosynthesis.	quality and stewardship.	6.P.3.1 Illustrate the transfer of heat energy from warmer objects to cooler ones using examples of conduction, radiation and convection and the effects that may result. 6.P.3.2 Explain the effects of electromagnetic waves on various materials to include absorption, scattering, and change in temperature. 6.P.3.3 Explain the suitability of materials for use in technological design based on a response to heat (to include conduction, expansion, and contraction) and electrical energy (conductors and insulators).		
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