Curriculum Map
Year Long Theme: The Power of Change
Concept: Changes in Science

6th Grade	September	October	November	December	January	February	March	April	May	June
Component	Earth Changes			Physcial Changes		Life Changes				
Unit	Scientific Processes	Weather	Weathering and Erosion	Engineering and Design Month!	Phases of Matter	Cells	Body Systems	Intro to Genetics		Amazing Race of Science
Unit Description	Scientific Method, variables, how to write a lab report, various science skills practice	The roles of water (water cycle, winds, landforms, ocean temp and currents, variations in density); weather and climate influenced by sun, ocean, atmosphere, ice, landforms	Human impacts on Earth's systems; negative and positive impacts on changes in Earth's environments; human population increases so do negative impacts to Earth Bio Eugence W. Hilgard (soil scientist)	To understand the 7 steps of design and to create a Rube Goldberg Machine using the design process.	definitions of energy; conservation of energy and energy transfer; thermal energy; kinetic energy related to temp.; construct/test device that maximizes or minimizes solar energy William Thomson aka Lord Kelvin (kinetic theory)	All living things are made of cells; living and non-living; made of one or many cells; cell organelles and cell membrane; body is multiple interacting subsystems- cells-tissues-organs; circulatory, excretory, digestive, respiratory, muscular, nervous (sensory receptors and signals to brain), skeletal		Growth and development of organisms in animals and plants; how genetic factors and local conditions affect the growth of plants; affects of environmental conditions affect different animal groups (fertilizers, drought, etc.); asexual and sexual reproduction in plants using punnett squares, diagrams; inheritance of traits and variations of traits		Review of science topics learned throughout the school year
Core Knowledge Correlation	N/A	Oceans- trenches, surface, subsurface land features Science Bio: Alfred Wegener, Gabriel Fahrenheit	N/A	N/A	Energy, Heat and Energy Transfer Science Bio: Marie Curie, Lewis Latimer	Science Bio: Robert Hooke	lymphatic, circulatory, immune systems; bacterial and viral diseases	Cell Division and Genetics- Greogor Mendel, double helix, mitosis and meiosis, genetic engineering, "Rosalind Franklin, Watson and Crick "		N/A

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7th Grade	September	October	November	December	January	February	March	April	May	June
Component	Earth Changes				Physical Changes		Life Changes			
Unit	The Nature of Science	Earth's Systems are related: Geosphere, Atmosphere, Hydrosphere, Biosphere		Earth and Human Activity: Exploring non-renewable energy sources	Introduction to Chemistry		Everchanging Ecosystems and Biomes		Cells and Plants	STEM Sports
Unit Description	Scientific Method, variables, practicing lab report writing, focus on inference and observation as well as graphing	energy flowing and matter cycling in all Earth's processes; water's movement causes weathering and erosion, land's changing surface and underground formations, tectonic processes related to ocean floor at trenches, rocks and fossil investigations related to land and water patterns; natural resources; Natural hazards related to geologic forces		Humans depend on Earth's land, ocean, atmosphere and biosphere for many different resources. Minerals, fresh water and biosphere resources are limited, and many are not renewable or replaceable over human lifetimes. These resources are distributed unevenly around the planet as a result of past geologic processes	structures and properties of matter; atom arrangement; solids with repeating subunits such as crystals, physical and chemical properties; chemcial reactions-original regrouped into new substances; reactants; how substances react chemically; conservation of matter; chemical reactions release or store energy; testing and designing solutions on a device that either releases or absorbs thermal energy by chemcial processes		Interdependent relationships in ecosystems; growth of populations limited due to resource access; Predicting consistent patterns of interactions in different ecosystems in terms of relationship between biotic and abiotic components (i.e.competitive, predatory, mutually benefical, etc); ecosystem dynamics, functioning and resilience; biodiversity and humans, developing possible solutions		tracing movement of matter and energy flow in organisms; energy in chemical processes and everyday life (i.e. photosynthesis and respiration); develop models to describe how food is rearranged through chemical reactions	Review of science topics and engineering
Core Knowledge Correlation	N/A	N/A		N/A	Chemical Bonds-Metallic, Covalent, Ionic, Oxidation, Reductions, Acids, Bases, Catalyst Science Bio: Lavoisier, Meitner "Atomic Structure- Theories of Matter, Start of modern chemistry Science Bio: Demetri Mendelev, Neils Bohr "		N/A		Chemistry and Food Respiration-Photosynthesis, animal respiration Bio: Robert Hooke	N/A

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8th Grade	September	October	November/December	Janurary	February	March/April/May	June
Component	Earth Changes			Physical Changes		Life Changes	
Unit	Science and Engineering	Astronomy	Sustainable Communities	Electricity/Magnetism/Waves and Sound	Roller Coaster Physics	The Code of Life: Evolution/Adaptation/Genetic Mutations	Summer Science STEM Olympics
Unit Description	Scientific Method, variables, practicing lab report writing, focus on inference and observation as well as graphing. Integration and application of engineering standards.	Earth, Moon, Sun-lunar phases, eclipses sun and moon; role of gravity in the solar system, scale of objects in the solar system The solar system formed from a nebular cloud of dust and gas 4.6 Ga (billion years ago). The Earth has changed through time and and has been affected by both catastrophic (e.g., earthquakes, meteorite impacts, volcanoes) and gradual geologic events (e.g., plate movements, mountain building) as well as the effects of biological evolution (formation of an oxygen atmosphere). Geologic time can be determined through both relative and absolute dating.	Increases in human pop. With consumption of natural resources impacting Earth's systems Students use their research skills to determine all of the ways that global warming can impact life on Earth.	Factors that affect strength of electric and magnetic forces, gravitational interactions are attractive, mass of objects; Forces of a distance fields through space waves-wavelength, frequency, and amplitude; wave properties, electromagnetic radiation; digitalized signals for information transmission	Newton's Third Law; the greater the mass of object, the greater the force; kinetic energy; potential energy	Common Ancestry and Diversity (fossil record); Anatomical similarities, Comparisions of embryological development, Natural Selection, Selective Breeding, Adaptation Students will work through a variety of genetics concepts and review/practice different science skills	STEM and engineering activities and review
Core Knowledge Correlation	N/A	Gravity, Stars, Galaxies Science Bio: Isaac Newton, Caroline Herschel	N/A	Electricity-flow, charges, static Earth's magnetism Science Bio: Charles Steinmet, James Maxwell, Mary Sommerville Electromagnetic Radiation Properties of waves-speed, frequency, amplitude Science bio: Dorothy Hodgkin	Forces, Motion, Density, Buoyancy, Work, Power, Types of Energy Science Bio: Albert Einstein	Evolution- Natural Selection, Extinction, Speciation Science Bio: Charles Darwin	N/A