Science Scope and Sequence

Unit	Unit Name	Phenomenon/ Essential Question	Science and Engineering Practices (Skills)	Essential Vocabulary	NE State Standards	Assessment(s)
Unit 1	Energy https://www.generationgenius.com/videolessons/heat-transfer-of-thermal-energy-video-for-kids/ https://www.generationgenius.com/videolessons/engineering-design-process-video-for-kids/ https://www.generationgenius.com/videolessons/potential-vs-kinetic-energy-video-for-kids/ https://thewonderofscience.com/msps33#phenomena	How can energy be transferred from one object or system to another?	Apply scientific principles to design, construct, and test a device Define the criteria and constraints of a design problem Plan an investigation Construct, use, and present arguments	• heat • thermal energy • conduction • convection • radiation • density • temperature • circulating • waves • engineering • defining the problem • design criteria • design constraints • research • optimizing design solutions • mechanical engineers • civil engineers • electrical engineers • chemical engineers • energy • kinetic energy • potential energy • gravity • energy transfer • energy conversion • kinetic energy formula • proportional • exponential growth	SC.6.4.1.A SC.6.4.1.B SC.6.4.1.C SC.6.4.1.D	

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Unit 2	Earth Systems https://www.generationgenius.com/videolessons/water-cycle-video-for-middle-school/ https://thewonderofscience.com/msess24#phenomena	How does water move through Earth's systems?	Develop a model	• evaporation • precipitation • condensation • gravity • sun energy • groundwater • water vapor • water droplets • crystallization	SC.6.13.5.A	
Unit 3	Weather and Climate https://www.generationgenius.com/videolessons/air-masses-and-weather-fronts-video-for-kids/ https://www.generationgenius.com/videolessons/climate-zones-and-ocean-currents-video-for-kids/ https://www.generationgenius.com/videolesso	What factors interact and influence weather and climate?	Collect data Develop and use a model Ask questions Analyze and interpret data	• air mass • humidity • prevailing winds • convection cell • weather front • cold front • warm front • stationary front • occluded front • atmospheric circulation • thermal energy • climate zones • latitude • ocean current • climate • convection cell • density • light intensity • salinity • weather • climate • greenhouse gasses • greenhouse effect • fossil fuels • consequence • glacier	SC.6.12.4.A SC.6.12.4.B SC.6.12.4.C SC.6.12.4.D	

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	ns/climate-change-video-for-kids/ https://www.generationgenius.com/videolessons/predicting-natural-disasters-video-for-kids/ https://thewonderofscience.com/instructional-resources/2017/12/19/weather-and-climate-2			• renewable resources • biofuel • natural disaster • earthquake • tectonic plates • tsunami • tornado • hurricane • seismologist • seismograph • volcanologist • meteorologist		
Unit 4	Cells https://www.generationgenius.com/videolessons/plant-and-animal-cells-video-for-kids/ https://www.generationgenius.com/videolessons/multicellular-organisms-video-for-kids/	What evidence is there to show the relationship between structure and function of living things?	Provide evidence that living things are made of cells. Describe the function of a cell as a whole and in cell parts. Use supporting evidence to show how the body is a system of interacting subsystems composed of groups of cells. Gather info to show sensory receptors respond to stimuli by sending messages to the brain.	• cell • organelle • nucleus • cytoplasm • cell membrane • cell wall • mitochondria • lysosome • vacuole • chloroplast • multicellular • unicellular • tissue • xylem • organ • system • brain • sense receptors • blood vessels	SC 6.6.2A SC 6.6.2B SC 6.6.2C SC 6.6.2D	

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	https://thewonderofscience.com/msls13#phenomena			• villi		
Unit 5	Growth and Reproduction of Organisms https://www.generationgenius.com/videolessons/natural-selection-video-for-kids/ https://www.generationgenius.com/videolessons/competition-in-ecosystems-video-for-kids/ https://www.generationgenius.com/videolessons/reproduction-of-living-things-video-for-kids/ https://thewond	What evidence is there to show the inheritance and variation of traits?	Use evidence to form an argument how plant and animal adaptations affect the probability of successful reproduction. Construct a scientific explanation for how environmental and genetic factors influence growth. Use a model to describe how asexual reproduction results in offspring with identical genetic info and sexual reproduction results in offspring with genetic variation.	• natural selection • variation • trait • gene • artificial selection • bacteria • e. coli • mutation • Charles Darwin • biologist • competition • resources • organism • environment • environmental factors • genetic factors • camouflage • ecosystem • invasive species • wildlife biologist • asexual reproduction • sexual reproduction • chromosome • fertilization • gene • allele • dominant allele • recessive allele • punnett square • geneticist	SC6.9.3A SC6.9.3B SC6.9.3C	

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