

August through October

Student Learning Expectation Number	Student Learning Expectation (SLE)	Vocabulary
NS.1.5.1	Make accurate observations Comprehend science processes by making accurate observations by applying appropriate senses and/or tools.	observation, accurate
NS.1.5.2	Identify and define components of experimental design used to produce empirical evidence Comprehend experimental design by ID and defining the five components of an experiment.* hypothesis* replication* sample size* appropriate use of control* use of standardized variables	hypothesis, control, sample size, replication, variables, scientific method, experiment, empirical evidence, data, problem,
NS.1.5.3	Calculate mean, median, mode, and range from scientific data using SI units	mean, median, mode, range, metric units of measure, average
NS.1.5.4	Interpret scientific data using, data tables/charts, bar graphs, circle graphs, line graphs, stem and leaf plots, and Venn diagrams	data tables/charts, bar graphs, circle graphs, line graphs, stem and leaf plots, and Venn diagrams
NS.1.5.5	Communicate results and conclusions from scientific inquiry	conclusions
NS.1.5.7	Summarize the characteristics of science *explanations are based on observations, evidence, and testing* hypotheses must be testable* understandings and/or conclusions may change with additional empirical data*scientific knowledge must have peer review and verification before acceptance	observations, evidence, testing, hypothesis, conclusions
NS.1.5.8	Explain the role of observation in the development of a theory observations and new evidence allow for continuous changes in scientific theory	theory, evidence
NS.1.5.9	Define and give examples of hypotheses	hypotheses
LS.2.5.1	Compare the cell theory to the characteristics of a scientific theory	cell theory, scientific theory, cell
LS.2.5.2	Examine cells on a microscopic level	microscope, microscopic
LS.2.5.3	Describe the similarities of basic cell functions in all organisms	cell function; animal cell, plant cell

LS.2.5.4	Model and identify the parts of animal cells and plant cells:-cell wall-cell membrane-nucleus-cytoplasm-chloroplast	organelle, cell wall, cell membrane, nucleus, cytoplasm, chloroplast
LS.2.5.5	Compare and contrast plant and animal cells	
LS.2.5.6	Conduct investigations to separate plant pigments from the cell *describe the differences between chlorophyll and plant pigments	pigments, chlorophyll
LS.2.5.7	Identify the role of chlorophyll in the process of photosynthesis *recognize that chlorophyll is contained inside chloroplasts	photosynthesis
LS.2.5.8	Explain and illustrate photosynthesis *identify the components of photosynthesis: carbon dioxide, water, sunlight*identify the by-products of photosynthesis: glucose (sugar), oxygen, water	carbon dioxide, water, oxygen, glucose, sun light (energy)
LS.2.5.9	Explain cellular respiration	cellular respiration, mitochondria
LS.2.5.10	Conduct investigations demonstrating the process of cellular respiration	
LS.2.5.11	Investigate careers, scientists, and historical breakthroughs related to cells	

WESTSIDE MIDDLE SCHOOL 5th GRADE SCIENCE CURRICULUM MAP

October through November

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LS.4.5.1	Distinguish among and model: -organisms-populations-communities-ecosystems-biosphere	organism, population, community, ecosystem, biosphere
LS.4.5.2	Identify the transfer of energy using energy pyramids:-terrestrial-aquatic *describe the transfer of energy from the sun to producers/plants, producers to consumers, and consumer to consumer	terrestrial, aquatic, energy, energy pyramid, transfer, producer, consumer, decomposer
LS.4.5.3	Design food webs in specific habitats to show the flow of energy within communities:-terrestrial-aquatic *recognize the transfer of energy between organisms in a food chain*categorize organisms by the function they serve in ecosystems and food webs	habitat, energy, categorize, food web, food chain
LS.4.5.4	Evaluate food webs under conditions of stress: -overgrazing -overpopulation -natural disaster -introduction of non-native species -human impact/urban development	
LS.4.5.5	Examine the role of limiting factors on the carrying capacity of an ecosystem: -food-space-water-shelter	limiting factors, carrying capacity, space

LS.4.5.6	Describe and diagram the nitrogen cycle in ecosystems	nitrogen, nitrogen cycle, decomposer, herbivore, carnivore, omnivore
LS.4.5.7	Describe and diagram the carbon cycle in ecosystems	Carbon cycle
LS.4.5.8	Describe and diagram the carbon dioxide-oxygen cycle in ecosystems	carbon dioxide-oxygen cycle
LS.4.5.9	Conduct investigations demonstrating the role of the carbon dioxide-oxygen cycle in ecosystems	
LS.4.5.10	Analyze the concept of conservation of mass as related to the amount of matter in an ecosystem *point out the transfer of energy within the cycles of an ecosystem *identify the states of matter *give examples of the states of matter within an ecosystem	conservation, mass, matter, conservation of mass
LS.4.5.11	Create ecosystems in which plants can exist without animals *list the components of terrestrial and aquatic ecosystems*review the limiting factors on the carrying capacity of an ecosystem: food, space, water, shelter	
LS.4.5.12	Conduct investigations in which plants are encouraged to thrive *review the limiting factors on the carrying capacity of an ecosystem: food, space, water, shelter	
LS.4.5.13	Construct, compare, and contrast environments in open and closed aquaria	open aquaria, closed aquaria, biotic (living), abiotic (non-living)
LS.4.5.14	Categorize organisms by the function they serve in ecosystems and food webs:-predator/prey-parasitism-producer/consumer/decomposer-scavenger-herbivore/carnivore/omnivore	predator, prey, parasite, parasitism, scavenger, herbivore, carnivore, omnivore
LS.4.5.15	Conduct field studies identifying and categorizing organisms in a given area of an ecosystem	field study, data, conclusion, observation
LS.4.5.16	Evaluate positive and negative human effects on ecosystems	Positive effects, negative effects
LS.4.5.17	Describe and illustrate various symbiotic relationships:-parasitism-mutualism-commensalism	symbiotic, relationship, parasitism, mutualism, commensalism
LS.4.5.18	Investigate careers, scientists, and historical breakthroughs related to populations and ecosystems	

WESTSIDE MIDDLE SCHOOL 5th GRADE SCIENCE CURRICULUM MAP

November through December

Student Learning Expectation Number	Student Learning Expectation (SLE)	Vocabulary
PS.5.5.1	Identify the relationship of atoms to all matter all matter is made of atoms	atoms, matter
PS.5.5.2	Conduct scientific investigations on physical properties of objects	physical properties
PS.5.5.3	Identify common examples of physical properties :*length*mass*area*perimeter*texture*taste*odor*color*elasticity	Length, mass, area, perimeter, texture, taste, odor, color, elasticity
PS.5.5.4	State characteristics of physical changes * keep in mind the substance's chemical make-up remains unchanged	physical changes
PS.5.5.5	Identify characteristics and common examples of physical changes * melting, tearing, cutting, breaking, freezing	
PS.5.5.6	Explain how heat influences the states of matter of a substance :*solid*liquid*gas*plasma	states of matter, solid, liquid, gas, plasma
PS.5.5.7	Demonstrate the effect of changes in the physical properties of matter	
PS.5.5.8	Model the motion and position of molecules in solids, liquids, and gases in terms of kinetic energy	physical changes, molecules, kinetic energy, potential energy
PS.5.5.9	Conduct investigations demonstrating expansion and contraction	expansion, contraction

PS.5.5.10	Investigate scientists, careers, and historical breakthroughs related to physical properties, physical changes, and states of matter	chemistry, chemist, physics, physicist
PS.6.5.1	Classify simple machines lever, wheel & axle, pulley, incline plane, wedge, & screw	lever, wheel & axle, pulley, incline plane, wedge, & screw, simple machines
PS.6.5.2	Conduct investigations using-levers -pulleys-inclined planes/ramps-wedges-screws-wheels & axles	
PS.6.5.3	Relate simple machines to inventions and discoveries	
PS.6.5.4	Compare and contrast potential energy and kinetic energy as applied to motion	potential energy, kinetic energy, motion
PS.6.5.5	Classify real world examples as potential energy or kinetic energy as applied to motion	
PS.6.5.6	Conduct investigations using potential energy and kinetic energy	
PS.6.5.7	Investigate careers, scientists, and historical breakthroughs related to simple machines and potential and kinetic energy.	engineers, physicists

WESTSIDE MIDDLE SCHOOL 5th GRADE SCIENCE CURRICULUM MAP

December through February

Student Learning Expectation Number	Student Learning Expectation (SLE)	Vocabulary
NS.1.5.5	Communicate results and conclusions from scientific inquiry	
PS.7.5.1	Summarize how light can interact with matter through absorption, refraction, and reflection	light, matter, absorption, refraction, reflection
PS.7.5.2	Investigate how light travels and interacts with an object or material	
PS.7.5.3	Conduct investigations demonstrating how an object can be seen absorption and reflection	
PS.7.5.4	Design and conduct investigations of transparent, translucent, and opaque as applied to light	transparent, translucent, opaque

PS.7.5.5	Investigate physical interactions of light and matter and the effect on color perception-refraction-absorption-transmission-scattering	perception, matter, color, white light, refraction, absorption, transmission, scattering
PS.7.5.6	Investigate careers, scientists, and historical breakthroughs related to light energy	physics, physicist
ESS.10.5.1	Compare the physical characteristics of the sun to other stars:-size-color-brightness	physical characteristics, stars, size, color, brightness, magnitude
ESS.10.5.2	Demonstrate the order of planets and other space objects in our solar system * asteroids, satellites, comets, meteors	planets, satellites, asteroids, meteors, comets
ESS.10.5.3	Compare the properties of planets in our solar system:-size-shape-density-atmosphere-average distance from the sun-orbital path-moons-surface-composition	size, shape, density, atmosphere, average distance, orbital path, moons, surface, composition, astronomical distance
ESS 10.5.4	Distinguish between mass and weight *describe how mass and weight are measured*explain the relationship between weight and gravity*explain that mass is constant	mass, weight, metric, kilograms, gravity
ESS.10.5.5	Compare the human body's mass to weight on Earth, the moon, and other planets in our solar system	
ESS.10.5.6	Investigate careers, scientists, and historical breakthroughs related to planets	

WESTSIDE MIDDLE SCHOOL 5th GRADE SCIENCE CURRICULUM MAP

February through March

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NS.1.5.4	Interpret scientific data using, data tables/charts, bar graphs, circle graphs, line graphs, stem and leaf plots, and Venn diagrams	data tables/charts, bar graphs, circle graphs, line graphs, stem and leaf plots, and Venn diagrams
NS.1.5.6	Develop and implement strategies for long-term, accurate data collection	
ESS.8.5.1	Identify some basic elements composing minerals:-silicon-oxygen-iron-sodium-chlorine-calcium-carbon-hydrogen-aluminum	elements, minerals, silicon, oxygen, iron, sodium, chlorine, calcium, carbon, hydrogen, aluminum
ESS.8.5.2	Investigate the growth of crystals	

ESS.8.5.3	Identify characteristics of minerals :* naturally formed solid* most are inorganic or formed from materials that were never alive* regular, repeating patterns of particles	mineral, inorganic, particle
ESS.8.5.4	Conduct investigations on mineral properties:-luster-hardness (Moh's Scale)-streak-acid test for calcite-fluorescence	minerals, properties, Moh's Hardness Scale, luster, streak, acid test, fluorescence
ESS.8.5.5	Identify the following minerals: -halite (salt)-feldspar-sulfur-quartz-diamonds-gypsum-calcite-talc-hematite (iron)-precious metals (gold, silver)	
ESS.8.5.6	Identify minerals found in Arkansas:-bauxite-diamonds-quartz-galena	
ESS.8.5.7	Identify characteristics of sedimentary, igneous, and metamorphic rocks	characteristics, sedimentary, igneous, metamorphic
ESS.8.5.8	Compare and contrast by investigation characteristics of the three basic types of rocks	characteristics, sedimentary, igneous, metamorphic
ESS.8.5.9	Classify the three basic types of rocks	
ESS.8.5.10	Investigate careers, scientists, and historical breakthroughs related to minerals and rocks	geology, geologist
ESS.8.5.11	Investigate the formation of soil	weathering, erosion, rock cycle, humus, top soil, decay, nutrients
ESS.8.5.12	Conduct investigations on sedimentation.	heat, pressure, weathering, erosion
ESS.8.5.13	Describe and illustrate the rock cycle	rock cycle, weathering, erosion, deposition, heat, pressure, process, continuous, sedimentary, metamorphic, igneous, magma
ESS.9.5.1	Explain and give examples of how physical evidence from fossils supports the theory that Earth has changed over time	fossil, continental drift, rock layers, mold, cast, imprint, trace, petrified, preserved, carbon film
ESS.9.5.2	Analyze fossil record evidence about plants and animals that lived long ago * some plants and animals are extinct species and others have undergone changes	fossil, rock layers, mold, cast, imprint, trace, petrified, preserved, carbon film, extinct
ESS.9.5.3	Infer the nature of ancient environments based on fossil record evidence	environment, fossil, fossil record, infer