

Plainfield Public School District

Science Curriculum: Grade 6 Maxson

2017-2018

NJ Model Curriculum Unit	Dates	NJSL Standards (NGSS)	Essential Questions	Content	Skills	Essential Vocabulary
Unit 0	September	MS-PS1-2	How do scientists think and operate?			Parts of a Lab Report
Unit 1	Mid September -Mid October	MS-LS1-4 MS-LS1-5	<p>What influences the growth and development of an organism?</p> <p>How do characteristic animal behaviors and specific plant structures affect the probability of successful reproduction of animals and plants respectively?</p> <p>How do environmental and genetic factors influence the growth of organisms?</p>	<p>Genetics</p> <p>Growth and Development of organisms</p> <p>Nature vs. Nurture</p> <p>Probable outcome of organisms</p>	Cause and effect (# of butterflies vs. colored plants/plant types) to create arguments for successful reproduction	sperm/egg, flower parts, germination
Unit 2	Mid October - November	MS-LS2-1 MS-LS2-2 MS-LS2-3	<p>How and why do organisms interact with their environment and what are the effects of those interactions?</p> <p>How do changes in the availability of matter and energy impact populations in an ecosystem?</p> <p>How can you explain the stability of an ecosystem by tracing the flow of matter and energy?</p>	<p>Animal interactions (inter/intraspecific)</p> <p>Nature VS Nurture (environmental conditions affect growth of organism)</p> <p>Recycling of matter through decomposers</p> <p>Symbiotic relationships (mutualism/commensalism/parasitism)</p>	<p>Determining populations based on resources</p> <p>Reading food webs and picking out food chains</p> <p>Determining change of species if you eliminate part of a food web (cause and effect)</p>	<p>Competition, commensalism, cooperation, mutualism, predator, prey, symbiosis, matter, energy, food web, niche, resources, population, Decomposers, community, biome, biosphere, species, ecosystem</p>

Unit 3	December - Mid-January	MS-LS2-4 MS-LS2-5 MS-ETS1-1 MS-ETS1-3	<p>What happens to ecosystems when the environment changes?</p> <p>How can a single change to an ecosystem disrupt the whole ecosystem?</p> <p>What limits the number and variety of living things in an ecosystem?</p>	<p>Flow of matter/energy through levels of an ecosystem (photosynthesis → decomposition)</p> <p>Ecosystems change</p> <p>Disruptions have ripple effects (fires, deforestation, disease)</p>	<p>Processing patterns in data to make inferences (population of organism over time and compare to an event)</p> <p>Working backwards from large to small to determine the cause of a larger effect</p>	Succession, limiting factors, carrying capacity, food web, biotic/abiotic factors
Unit 4	Mid-January to February	MS-PS2-1 MS-PS2-2 MS-ETS1-2 MS-ETS1-3 MS-ETS1-4	<p>How can we predict the motion of an object?</p> <p>How does a sailboat work?</p> <p>Who can build the fastest sailboat?</p>	<p>Newton's Laws of Motion</p> <p>Forces (positive and negative based on direction)</p>	<p>Application of laws (modeling)</p> <p>Modeling motion system</p> <p>Create explanation for an event (determining which law is applicable)</p>	<p>Newton's Laws of Motion, force/net force, inertia, motion, Newton, speed, distance, velocity, vector, friction, resistance</p>
Unit 5	Late February to Beginning of April	MS-PS2-3 MS-PS2-4 MS-PS2-5	<p>Is it possible to exert force on an object without touching it?</p> <p>How does a Maglev train work?</p> <p>If you were able to eliminate air resistance and dropped a feather</p>	<p>Fields exist between objects exerting forces upon each other, even without contact</p> <p>Electric and</p>	<p>Develop and use models to provide evidence that field exist between objects</p> <p>Develop and use</p>	<p>Force, cause and effect, systems, system models, gravitational/electric/magnetic forces, attract, repel, magnets</p>

			<p>and hammer at the same time, which would land first?</p>	<p>magnetic forces Gravity depends on mass</p>	<p>models to evaluate the strength of electromagnetic fields. Construct and present arguments using evidence to support the claim that gravity is attractive and depends on mass</p>	
<p>Unit 6</p>	<p>April to mid-May</p>	<p>MS-ESS1-1 MS-ESS1-2 MS-ESS1-3</p>	<p>What patterns in the Earth-Sun-Moon system can be used to explain lunar phases, eclipses of sun and moon, and seasons? What is the role of gravity in the motions within galaxies and solar systems? What are the scale properties of objects in the solar system?</p>	<p>Universe and stars Earth and solar system History of planet Earth Gravity Scale properties of objects Phases, eclipses, and seasons Tides</p>	<p>Develop and use a model to describe patterns in the apparent motions of the sun, moon, and stars in the sky. Develop and use models to explain the relationship between the tilt of the Earth's axis and seasons. Analyze and interpret data to determine similarities and differences among objects in the solar system</p>	<p>Sun, earth, moon, planet, comet, eclipse, solar, lunar, rotation, revolution, axis, tropic of cancer, tropic of capricorn, equator, ellipse, waxing, waning, crescent, gibbous, gravity, seasons, meteor, meteorite, meteoroid, orbit, celestial, angle</p>
<p>Unit 7</p>	<p>May-June</p>	<p>MS-ESS2-4 MS-ESS2-5 MS-ESS2-6</p>	<p>What factors interact and influence weather and climate? What are the processes involved in</p>	<p>Hydrologic cycle Pressure systems</p>	<p>Develop a model describing the cycling of water through Earth's</p>	<p>Pressure, temperature, humidity, thermometer,</p>

			<p>the cycling of water through Earth's systems?</p> <p>What is the relationship between the complex interactions of air masses and changes in weather conditions?</p> <p>What are the major factors that determine regional climates?</p>	<p>Elevation/altitude</p> <p>Weather mapping/patterns</p> <p>Fronts</p> <p>Air currents</p> <p>Masses</p> <p>Gravity</p> <p>Role of the sun</p> <p>Salinity</p> <p>Water currents</p> <p>Global/local Winds</p> <p>Coriolis Effect</p>	<p>systems driven by energy from the sun and gravity</p> <p>Model the water cycle</p> <p>Collect data to serve as the basis for evidence as to how air masses result in changes in weather conditions.</p> <p>Develop and use a model to describe how unequal heating and rotation of earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p>	<p>anemometer, wind vane, barometer, sling psychrometer, precipitation, evaporation, run-off, condensation, fronts, weather, climate, currents, air masses, polar, tropical, maritime, continental, predict, wind, sublimation, salinity, density, land/sea breeze, elevation/altitude, Coriolis Effect, equator, global winds</p>
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