

JONES PUBLIC SCHOOLS

6th Grade Science

DATES OF INSTRUCTION*	STANDARDS	BIG IDEAS	ASSIGNMENTS / ACTIVITIES*
August 23 rd	Safety in Science	1. Safety Symbols 2. Lab Safety Rules 3. Accident Procedures 4. Student Safety Contract	1. Safety Symbols 2. Lab Safety Rules 3. Accident Procedures 4. Student Safety Contract
August 24 th	Intro to Laboratory Equipment	1. Triple Beam Balance 2. Metric Ruler 3. Graduated Cylinder	1. Scientific Procedure 2. Hands-on lab equipment demonstration and exploration.
Weeks 1 & 2	MS-PS1-1	1. Gases and liquids are made of molecules that are moving about relative to each other. 2. The change of state that occurs with variations in temperature or pressure can be described and predicted.	https://www.esrl.noaa.gov/gmd/outreach/info_activities/pdfs/Teacher_LA_matter_on_the_move.pdf https://www.esrl.noaa.gov/gmd/outreach/info_activities/pdfs/LA_matter_on_the_move.pdf Heat and Molecules Experiment: https://www.coffeecupsandcrayons.com/simple-heat-experiment/
Weeks 2 & 3	MS-PS3-1	1. Motion is called kinetic energy and is proportional to the mass of the moving object and grows with the square of its speed.	Kinetic & Potential Energy Lab: Toy car ramp

Week 3 & 4	MS-PS3-2	1. When two objects interact, each one exerts a force on the other that can cause energy to be transferred to or from the object.	https://slideplayer.com/slide/12730199/ Sling shot activity
Weeks 5 & 6	MS-PS3-4	1. The amount of energy transfer needed to change the temperature of a matter sample by a given amount depends on the nature of the matter, the size of the sample and environment.	Ice Cube Experiment Compare final water temperatures after different masses of ice melted in the same volume of water with the same initial temperature,
Week 7 & 8	MS-PS3-3	1. Energy is spontaneously transferred out of hotter regions or objects into colder ones.	Hot Spoons Experiment: https://sciencing.com/heat-energy-transfer-experiments-8294154.html
Week 9 & 10	MS-PS2-3	1. What factors affect strength of electric and magnetic forces?	https://www.youtube.com/watch?v=XiHVe8U5PhU Video explains how electricity works 11:39 mins https://www.youtube.com/watch?v=wX9QBwJBI_Y video showing how to make electromagnet - 2:17 mins. https://sciencebob.com/make-an-electromagnet/ written instructions with questions. https://education.jlab.org/qa/electromagnet.html Written instructions with better explanation, but no questions for students to answer.

Week 11 & 12	MS-PS2-5	1. Provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.	Magnet attraction demonstration: https://www.youtube.com/watch?v=MZtTVsIOA9c Magnets defy gravity experiment: https://www.youtube.com/watch?v=bnfTgTVSUnU
Week 13 & 14	MS-LS1-1	1. All living things are made up of cells, which is the smallest unit that can be said to be alive. 2. An organism may consist of one single cell or many different numbers and types of cells.	Microscope and cell lab investigation: The Building Blocks of Life: An Investigation of Cells https://nau.edu/uploadedFiles/Centers-Institutes/Merriam-Powell/Gehring_Lab/_Forms/NGSS%20Cell%20Investigation%20-%20Instructor%20Version.docx
Week 15 & 16		Semester Test Review/Test	Catch-up if behind
Week 17 & 18 (January 7 th , 2019)	MS-LS1-2	1. Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell.	Cell identification and primary role drawing specifically the nucleus, chloroplasts, mitochondria, cell membrane and cell wall.
Week 19 & 20	MS-LS1-3	1. In multicellular organisms, the body is a system of multiple interacting subsystems. 2. These subsystems are groups of cells that work together to form tissues and organs that are	Body system diagram drawing emphasizing the circulatory, excretory, digestive, respiratory, muscular, and nervous systems.

		specialized for particular body functions.	https://www.wsfcs.k12.nc.us/cms/lib/NC01001395/Centricity/Domain/8472/Body%20Systems%20Interactions%20chart.pdf https://docs.google.com/presentation/d/1wKIVbOhUlksRRExXJg4fNHlsW4rPbEcxZFnBcwZNf8/edit#slide=id.p84
Week 20 & 21	MS-LS1-6	1. Plants, algae and many microorganisms use the energy from light to make sugars from carbon dioxide from the atmosphere and water through photosynthesis, which releases oxygen.	<p>Role of photosynthesis in the cycling of matter:</p> <p>https://prezi.com/dlvzpqsftsql/what-is-the-role-of-photosynthesis-in-the-cycling-of-matter/</p> <p>Tracing movement of matter and flow of energy diagram:</p> <p>http://www.edquest.ca/pdf/sia71-2notes.pdf</p>
Week 22 & 23	MS-LS2-3	1. Food webs are models that demonstrate how matter and energy is transferred between producers, consumers and decomposers as the three groups interact within an ecosystem.	<p>Matter and energy flow in ecosystems diagram drawing:</p> <p>https://image.slidesharecdn.com/shekharfinalppt-121122111108-phpapp01/95/biogeochemical-cycle-and-impact-of-anthropogenic-activity-by-shashi-shekhar-singh-sesjnunew-delhi-3-638.jpg?cb=1353582903</p> <p>https://www.slideshare.net/deaWeek26 & 37wscience/food-webs-photosynthesis-q-and-a?next_slideshow=1</p>

Week 24 & 25	MS-ESS2-4	<p>1. Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation, crystallization, precipitation, and downhill flows.</p> <p>2. Global movements of water and its changes in form are propelled by sunlight and gravity.</p>	<p>Videos: https://www.youtube.com/watch?v=iohKd5FWZOE</p> <p>https://pmm.nasa.gov/education/videos/water-water-everywhere</p> <p>Water cycle diagrams/worksheets: http://www.6aming.com/academics/water-cycle-diagram-worksheet-for-middle-school/</p> <p>*Best one: http://www.6aming.com/academics/water-cycle-diagram-with-explanation/</p>
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Week 26 & 27	MS-LS2-4	<p>1. Ecosystems are dynamic in nature.</p> <p>2. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.</p>	<p>Video: Elements of Biology Ecosystems Organisms and Their Environment https://www.youtube.com/watch?v=oeu--qFN2g4</p> <p>Ecosystems and Changes to populations slide show: http://slideplayer.com/slide/6871927/</p>
Week 28 & 29	MS-LS2-2	<p>1. Predatory interactions may reduce the number or eliminate whole populations.</p> <p>2. Mutually beneficial interactions may become so interdependent that each organism requires the other for survival.</p>	<p>Videos -Predator/Prey: https://www.youtube.com/watch?v=E5nfVsZcjDc</p> <p>Mutualism - symbiotic relationship: https://www.ck12.org/earth-science/roles-in-an-ecosystem/enrichment/Symbiosis%3A-A-Surprising-Tale-of-Species-Cooperation/?referrer=concept_details</p>

			<p>Roles in Ecosystem summary: https://www.ck12.org/earth-science/roles-in-an-ecosystem/studyguide/Roles-in-an-Ecosystem-Study-Guide/?referrer=concept_details Lions, Antelope, Grass growth: http://gwydir.demon.co.uk/jo/games/lion/index.htm</p>
Week 30 & 31	MS-LS2-5	<ol style="list-style-type: none"> 1. Ecosystem dynamics, functioning and resilience. 2. Biodiversity and humans. 3. Developing possible solutions for maintaining biodiversity and ecosystem services. 	<p>Water Filtration Challenge: https://www.jpl.nasa.gov/edu/teach/activity/water-filtration-challenge/ Nutrient Cycle: https://www.thinglink.com/scene/786693194979999746 Soil Erosion Video: https://study.com/academy/lesson/soil-erosion-effects-prevention.html</p>
Week 32 & 33	MS-ESS3-3	<ol style="list-style-type: none"> 1. Human activities have significantly altered the biosphere, sometimes damaging or destroying natural habitats and causing extinction of other species. 2. Typically as human populations and pre-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise. 	<p>Human impact on environment: https://www.slideshare.net/wamplerjames/08-human-impacts-design-a-method-part-i-day-8 Humans affect on biodiversity: https://www.youtube.com/watch?v=wXJiHr8jWBs Dam removal: http://link.brightcove.com/services/player/bcpid660572737001?bckey=AQ~~,AAAAmZfSubE~,RcH_vKEgcc8H4dTxFK_bcbVM8tx2ZgwW&bctid=1745558069001</p>

Week 34, 35, 36		Catch-Up if needed Semester Test Review/Test	

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