



Meridian District #15 Curriculum Map

Teacher Name:

Grade: 9-10

Subject Area: Integrated Science



Month	Topic/Content	Skill	Standard	Instruction/Resources	Assessments
August-Sept	Safety Scientific Method The Early Solar System The Moon Current research in astronomy Martian soil potential Transpiration in plants	<u>Safe lab practices</u> <u>Measurement</u> review mm, cm, cm ² , cm ³ , meniscus, mL <u>Applying</u> the scientific method through laboratory activities <u>Graphing</u> lab data <u>Sequencing</u> the formation of the solar system and the formation of the moon <u>Contrasting</u> historical contributions to astronomy, growth of plants in Martian simulant soil and standard potting soil <u>Modeling</u> crater formation, Kepler's First Law of Planetary Motion, Newton's Law of Gravitation, Solar eclipse orientation <u>Communicating</u> information from recent astronomical research through a Google Slides presentation to the class	HS-PS2-2 HS-PS2-4 HS-PS3-2 HS-LS1-3 HS-ESS1-4 HS-ESS1-6	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts STEM lab - soil comparison Lab equipment Kahoot Eggspert electronic review White Board review	Open note checks Text section review questions Independent communication project on Google Slides Group and independent laboratory activities Crossword reviews Review games Content tests

October	<i>Martian soil potential</i> <i>Transpiration in plants</i> - continued The study of light Spectroscopy The Doppler Effect Types of lab telescopes Space telescopes The sun - structure, energy Nuclear fusion	<u>Comparison/Contrast</u> of lab results between peas grown in Martian soil simulant and Earthen soil <u>Modeling</u> the impact of planetary distance on gravitation <u>Modeling</u> red shift and the Doppler Effect <u>Identifying</u> the technical capacity of the James Webb Telescope <u>Graphing</u> sunspot cycles <u>Modeling</u> nuclear fusion <u>Modeling</u> stellar parallax	HS-PS1-8 HS-PS4-1 HS-PS4-3 HS-PS4-4 HS-PS4-5 HS-ESS1-1 HS-ESS1-3 HS-ESS1-4	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment NASA's James Webb tutorial <i>Scope It Out!</i> Kahoot Eggspert electronic review White Board review	Open note checks Text section review questions Online NASA tutorial Group and independent laboratory activities Crossword reviews Review games Content tests
Nov	Properties of stars Stellar parallax Stellar magnitude Stellar evolution Types of galaxies Hubble's Law The Big Bang	<u>Modeling</u> binary stars <u>Modeling</u> stellar parallax <u>Analysis</u> of the Hertzsprung-Russell (H-R) diagram <u>Plotting</u> stars from a constellation onto an H-R diagram	HS-PS1-8 HS-ESS1-1 HS-ESS1-2 HS-ESS1-3 HS-ESS1-6	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment Kahoot Eggspert electronic review White Board review	Open note checks Text section review questions Group and independent laboratory activities Crossword reviews Review games

					Google Forms online test review Content tests
Dec	Chemistry of minerals Properties of minerals Mineral identification techniques Classification of rocks Rock origins Rock cycle Cave formation Semester exam review/testing	<u>Utilize</u> the Periodic Table to identify elements in a mineral. <u>Analyze</u> subscripts and parentheses in a chemical formula to determine the ratio of elements in a mineral. <u>Identify</u> the properties of minerals through laboratory experimentation - streak, scratch, hardness, luster, density <u>Rank</u> minerals by hardness using the Moh's Hardness Scale <u>Identify</u> groups of rocks based on characteristics such as crystal size <u>Model</u> chemical weathering of sedimentary rocks/cave formation	HS-PS1-6 HS-ESS1-5 HS-ESS2-1 HS-ESS2-2 HS-ESS2-3 HS-ESS2-5	Notes on Google Slides Videos to reinforce major concepts Flowchart to accompany the rock type videos <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment Kahoot Eggspert electronic review White Board review Semester exam Vocabulary review study guide	Open note check Text section review questions Group and independent laboratory activities Crossword reviews Review games Google Forms online test review Content test Semester exam
January	Mining analysis - CAT Decatur Local lakes Water cycle Streamflow Erosion Deposition Floods Groundwater/Aquifers	<u>Perform</u> a cost-benefit analysis for two mines <u>Research and present</u> information on local lakes for origin/purpose <u>Investigate</u> soil permeability through gravitational <u>filtration</u>	HS-LS2-7 HS-ESS2-2 HS-ESS2-5 HS-ESS3-1 HS-ESS3-2 HS-ESS3-4	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Champaign public works website - Mahomet aquifer Google Classroom	Open note check Text section review questions Group and independent laboratory

	Soil permeability Glaciers Deserts Alluvial Fans	<u>Assess</u> the protection and conservation of water in an aquifer - both for drinking and for crop irrigation <u>Model</u> flash flooding/alluvial fan formation in the desert		Lab instruction and data handouts Lab equipment Kahoot White Board review	activities Crossword reviews Review games Content test
Feb	Earthquakes Deformation Measuring earthquakes Earthquake hazards Earth's interior structure Continental drift Sea-floor spreading Plate tectonics Plate boundaries	<u>Model</u> seismic waves in liquid and solid media <u>Construct</u> a model building and subject the design to an earthquake. <u>Graph</u> speed data of primary and secondary waves <u>Construct</u> a model magnetometer and test its function against a simulated ocean floor <u>Model</u> the Great Rift Valley by creating faults in cheese and exerting tension forces	HS-PS2-3 HS-PS3-2 HS-PS3-5 HS-PS4-5 HS-ESS1-5 HS-ESS2-1 HS-ESS2-2 HS-ESS3-1	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment Kahoot Eggspert electronic review White Board review	Open note checks Text section review questions Group and independent laboratory activities Crossword reviews Google Forms online test review Review games Content tests
March	Plate tectonics review Mountain formations Characteristics of magma Viscosity Structure and types of volcanic cones Fossil types	<u>Map</u> the primary fossils that provided evidence of continental drift <u>Map</u> the movement of the Pacific Plate over the Hawaiian hot spot <u>Model</u> the flow of viscous	HS-LS4-1 HS-LS4-2 HS-LS4-3 HS-LS4-5 HS-ESS1-5 HS-ESS1-6 HS-ESS2-1	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts	Open note checks Text section review questions Group and

	Conditions for fossilization Rocky Mountain fossil discoveries and history of the range (undersea)	lava vs. free-flowing lava <u>Graph</u> the melting point of rock that will become lava <u>Identify</u> fossils from models and image search	HS-ESS2-2 HS-ESS2-3 HS-ESS2-7	Lab equipment Kahoot Eggspert electronic review White Board review	independent laboratory activities Crossword reviews Google Forms online test review Review games Content tests
April	Radioactive dating Geologic time scale eons, eras, periods, epochs Tar pit fossil history (PreACT Prep) Geologic development Evolution timeline of major groups Atmospheric development Phanerozoic life Paleozoic Mesozoic Cenozoic Cretaceous extinction Mammalian timeline	<u>Construct</u> a model of radioactive decay using half-life <u>Utilize</u> the microscope to draw detailed images of unicellular life (<u>Practice</u> PreACT strategies 3-4 days ahead of the testing date.) <u>Plot the timeline</u> of Earth's history and color it on a 100-inch strip of adding machine tape.	HS-PS1-8 HS-LS2-5 HS-LS2-8 HS-LS4-1 HS-LS4-2 HS-LS4-5 HS-ESS1-5 HS-ESS1-6 HS-ESS2-1	Notes on Google Slides Videos to reinforce major concepts <i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment Eggspert electronic review White Board review	Open note check Text section review questions Group and independent laboratory activities Crossword reviews Google Forms online test review Review games
May	Geologic time test review Weather and meteorology air pressure	<u>Construct</u> the frame of a hot air balloon. <u>Engineer the balloon bag</u>	HS-LS2-6 HS-ESS2-2 HS-ESS2-4	Notes on Google Slides Videos to reinforce major concepts	Review games Content test

	wind air masses frontal boundaries storm development thunderstorms tornadoes hurricanes	to allow for buoyancy and flight due to changes in air pressure. <u>Differentiate</u> the heating of both water and land by heating fixed quantities of water and sand. <u>Explore</u> the cooling pattern of fixed quantities of water and sand and tie the conclusions to weather over continents and weather near the shoreline.	HS-ESS2-5 HS-ESS3-5 HS-ESS3-1	<i>Earth Science</i> Textbook Google Classroom Lab instruction and data handouts Lab equipment Vocabulary review study guide Kahoot White Board review	Group and independent laboratory activities Google Forms online test review Semester Exam
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