

Kalkaska High School Curriculum Map

Subject: Earth Science

Primary Grade Level: 9th

Month	Unit/Topic of Study	Standards	Key Vocabulary	KAGAN/Test Taking and Reading Strategies	Math Skills	Writing in the Content Area	Assessments
Sept	Organizing Principles	HS-ESS2-2.	biogeochemical cycles biosphere carbon cycle mountain belts nitrogen cycle core crust Earth Systems Science earthquakes geosphere hydrosphere lithosphere mantle mantle convection	Talk to the text modeling and first tries Read pair share modeling and first tries Rally Robin Rally Coach	Metric conversions	Declare and support a hypothesis with evidence or refute with evidence.	Latitude Longitude Quiz Earth Structure Quiz Earth History Quiz Contour Quiz Topographic Quiz Unit Test
Oct	Rock Forming Processes	HS-ESS1-6	contact metamorphism cooling crystallization metamorphic rocks metamorphism molten rock deposition erosion extrusive foliation grain shape grain size igneous rocks intrusive lithification magma	Text annotations and talk to the text. Fan and Pick	Scientific notation and exponents.	Claim, evidence, and reasoning.	Thin Section Quiz Igneous Identification Quiz Rock Environment Quiz Metamorphic Comparison Quiz Igneous Lab Quiz Sedimentary Lab Quiz Metamorphic Lab Quiz Unit Test
Nov	Discerning Earth History	HS-ESS1-6	absolute age dating C-14 Cretaceous-Tertiary (K-T) cross-cutting relationships	Read pair share modeling and first tries	Design of 4 graphs Statistics	Hypothesis/ Claims required 3-4	Relative Aging Quiz Index Fossil Quiz

			<p>decay rates evolution of life geologic dating geologic events geologic time geologic time scale half-life index fossils principle of original horizontality radioactive decay radioactive elements radioactive isotopes radioactive substance radiometric dating</p>	Mix Pair Share Rally Coach		point support and wrap up continue in each lab as is standard	Mass Extinction Quiz Unit 3 Test
Dec	Plate Tectonics and Volcanoes	HS-ESS1-5	<p>aging ocean plates biosphere chemical composition continental collision convection core crust density driving energy driving force earthquakes explosivity geologic features geosphere global positioning system hydrosphere lithosphere magma magmatic activity</p>	<p>Read pair share modeling and first tries</p> <p>Quiz-Quiz-Trade</p>	Pattern identification and modeling of statistical data.	Essay: Formulate an argument for an evacuation.	<p>Boundaries quiz Plate features quiz Viscosity quiz Unit 4 assessment</p>
Jan	Earthquakes and Earth's Interior	HS-ESS2-1	<p>asthenosphere body waves concentric layers continental crust convection crust earthquakes elastic rebound theory gravity inner core intensity internal sources of energy lithosphere lower mantle magnetic field</p>	<p>Text annotations and talk to the text.</p> <p>Showdown</p>	<p>Pattern identification and modeling of statistical data.</p> <p>Triangulation</p>	Claim, evidence, and reasoning.	<p>Seismic Wave Quiz Map and Rock Quiz Earth's Interior Quiz Travel Time Quiz Unit 5 Assessment</p>

			<p>Magnitude outer core plates primary seismic waves properties of waves P-waves</p>				
Feb	Cosmology and Earth's Place in Space	HS-ESS1-2	<p>age of universe big bang theory cosmic background radiation cosmological redshift doppler redshift expanding universe light spectrum Milky Way Galaxy motion of solar system nebular cloud scale of universe spiral arm structure of universe</p>	<p>Text annotations and talk to the text.</p> <p>Find the Fib</p>	Kepler's Laws of Planetary Motion	Claim, evidence, and reasoning.	<p>EM Spectrum Quiz HR Diagram Quiz Doppler Shift Quiz</p>
March	Sun and other Stars	HS-ESS1-1	<p>auroras Hertzsprung-Russell (H-R) diagram life cycle of stars nuclear fusion nuclear reactions power disturbances radio and satellite communication release of energy solar energy</p>	<p>Text annotations and talk to the text.</p> <p>Quiz-Quiz-Trade</p>	<p>Statistics Pie Graph/percent creation</p>	Claim, evidence, and reasoning.	<p>Sun Quiz Stellar Cartoon Quiz Solar Scale Quiz Periodic Table Quiz Astronomy Unit Assessment</p>
April	Hydrogeology	HS-ESS3-3	<p>aquifers biogeochemical biosphere freshwater reservoirs glaciers groundwater hydrogeology hydrosphere inputs land use outputs recharge residence times rivers streams</p>	<p>Text annotations and talk to the text.</p> <p>Rally Coach</p>	Wastewater treatment plant flowchart	Claim, evidence, and reasoning.	<p>Watershed Quiz Porosity Quiz School Forest Tour Quiz GIS Quiz Hydrogeology Assessment</p>

			<p>surface water lakes sustainability water quality wetlands</p>				
May	Resources and the Environment	HS-ESS3-1	<p>biomass chemical energy conduction convection coral reef deforestation ethanol external energy sources fossil fuels geothermal energy hydroelectric energy mechanical energy nonrenewable energy pollution renewable energy resources solar energy</p>	<p>Text annotations and talk to the text.</p> <p>Sand-Up, Hand-Up, Pair-Up</p>	Carbon dioxide production graphs.	Claim, evidence, and reasoning.	<p>Eutrophication Quiz Electricity Theory Quiz Hypoxia Essay</p>
June	Weather and Climate	HS-ESS2-4	<p>adaptive capacity atmosphere atmospheric change biogeochemical cycles biosphere carbon carbon cycle carbon dioxide climatic zones climate change climate change models climate system conduction convection coral bleaching greenhouse effect greenhouse gases human industrialization hydrosphere ice core methane natural mechanisms nitrous oxide organic matter</p>	<p>Text annotations and talk to the text.</p> <p>Quiz-Quiz-Trade</p>	Tree core data analysis.	Claim, evidence, and reasoning.	<p>Electricity Quiz Lightning Quiz TPC Quizzes Fronts Quiz Weather Map Quiz Climate Graph Quiz</p>