

# Curriculum Map

## Earth Science - High School

Month	Content	Skills	Assessment
September	<ul style="list-style-type: none"> <li>• Science is a format process to use to observe, classify, and analyze the environment.</li>   <li>• The purpose of science is to describe, analyze, &amp; predict the extent &amp; impact of change.</li>   <li>• Many changes in nature are cyclic &amp; therefore predictable.</li>   <li>• Much of our difficulty with prediction is due to the complex relationships among many variables.</li> </ul>	<ul style="list-style-type: none"> <li>• Use instruments to measure observable properties.</li>   <li>• Use the metric system to record &amp; manipulate measurements.</li>   <li>• Classify &amp; record observations on the basis of concise criteria.</li>   <li>• Draw inferences on relationships among observations.</li>   <li>• Construct graphs that illustrate relationships between 2 variables.</li>   <li>• Use graphs to predict how a change in one variable will affect another variable.</li>   <li>• Construct isoline maps.</li>   <li>• Use isoline maps to compute gradients of various field quantities.</li> <li>• Inter-relationships between the gradient of a field quantity &amp; observations of the mapped area</li> </ul>	<ul style="list-style-type: none"> <li>• Measurement labs - mass, volume, density</li> <li>• Use lab equipment to measure quants.</li>   <li>• shoe box lab - observation &amp; inference</li> <li>• Use observations to draw an inference.</li> <li>• diagram &amp; graph interpretations</li>   <li>• multiple choice questions - review sheets, quizzes, tests</li>   <li>• open notebook quizzes</li> <li>• All test questions are Regents quest.</li>   <li>• isotherm lab</li>   <li>• sunspot lab - graphing &amp; prediction</li>   <li>• review / quiz / test</li>   <li>• extra credit review sheet</li>   <li>• Regents questions</li>   <li>• open notebook quizzes</li>   <li>• topic test of Regents questions</li> </ul>

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Month	Content	Skills	Assessment
September (continued)	<ul style="list-style-type: none"> <li>• Observations that lead to inferences on the shape of the earth</li> <li>• Latitude &amp; longitude</li> <li>• Contour maps</li> </ul>	<ul style="list-style-type: none"> <li>• Identify observations that lead to inferences on Earth's shape.</li> <li>• Explain how the identified observations lead to inferences on earth's exact shape.</li> <li>• Explain how positions on earth's surface are determined.</li> <li>• Determine positions on earth's surface.</li> <li>• Describe an area using a contour map.</li> </ul>	<ul style="list-style-type: none"> <li>• topographic map labs</li> <li>• polaris lab</li> <li>• multiple choice quiz/ review sheet/test</li> <li>• topic test of Regents test questions</li> <li>• open notebook quizzes</li> <li>• lab practical on identifying positions using latitude &amp; longitude</li> </ul>
October	<ul style="list-style-type: none"> <li>• Geocentric model of the universe vs. heliocentric model of the solar system</li> <li>• Causes of the changing seasons</li> <li>• Our position in space relative to celestial objects</li> </ul>	<ul style="list-style-type: none"> <li>• Identify celestial observations that lead to inferences on our position in space.</li> <li>• Describe two different models of celestial motion that can be developed from the same set of observations.</li> <li>• Explain why one model has more validity than the other model.</li> <li>• Use the chosen model to describe &amp; predict changes that occur on earth.</li> </ul>	<ul style="list-style-type: none"> <li>• labs on orbital shapes, dynamics, &amp; effects of earth's orbit (seasons &amp; changing daylight periods).</li> <li>• open ended questions dealing with the analysis of diagrams of celestial models</li> <li>• multiple choice quiz, review, test using Regents test questions</li> </ul>

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November	<ul style="list-style-type: none"> <li>• The solar electromagnetic spectrum</li>   <li>• Energy transfer processes</li>   <li>• Insolation &amp; energy in earth's atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>• Identify energy forms omitted by the sun.</li>   <li>• Contrast the effects of different energy wave lengths on earth's temperature.</li>   <li>• Describe conduction, convection, &amp; radiation as different energy transfer processes.</li>   <li>• Identify relationships between the sun's position in the sky &amp; surface temperatures on earth.</li>   <li>• Explain why our warmest &amp; coldest times of the year do not coincide with our periods of maximum &amp; minimum energy received from the sun.</li> </ul>	<ul style="list-style-type: none"> <li>• labs on conduction, convection, &amp; the solar spectrum</li>   <li>• lab on the relationship between surface characteristics &amp; energy absorption</li>   <li>• multiple choice quiz, review, test using Regents test questions</li>   <li>• solar altitude lab</li>   <li>• Analyze diagrams of solar angles &amp; their heating effect.</li>   <li>• open ended questions on diagrams of energy transfer processes</li>   <li>• review, quiz, test using Regents questions</li> </ul>

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December	<ul style="list-style-type: none"> <li>• Energy transfer in earth's atmosphere</li> <li>• Air mass characteristics</li> <li>• Frontal systems</li> <li>• Moisture in the atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>• Determine weather related variables.</li> <li>• Forecast tomorrow's weather using data gathered today.</li> <li>• Describe weather along different kinds of fronts.</li> <li>• Describe &amp; explain atmospheric changes related to energy &amp; moisture transfers within the atmosphere.</li> </ul>	<ul style="list-style-type: none"> <li>• labs on weather related variables such as dew point &amp; relative humidity</li> <li>• labs on frontal system stimulations &amp; their effect on our local weather</li> <li>• diagram &amp; graph analysis of relationships between temperature, humidity, &amp; air pressure</li> <li>• quiz / review / test using Regents questions</li> </ul>
January	<ul style="list-style-type: none"> <li>• Water cycle</li> <li>• Water budgets</li> <li>• Climate types based on temperature &amp; humidity.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify soil characteristics such as porosity, permeability, &amp; capillarity.</li> <li>• Infer &amp; describe relationships between soil characteristics &amp; the water cycle.</li> <li>• Calculate, graph, &amp; interpret a local water budget using simulated data.</li> <li>• Describe climates on the basis of temperature &amp; moisture.</li> <li>• Derive climate types on the basis of latitude, elevation, topography, prevailing winds, &amp; ocean currents.</li> </ul>	<ul style="list-style-type: none"> <li>• ground water lab that stimulates porosity, permeability, &amp; capillary action.</li> <li>• water budget lab that deals with precipitation &amp; evapotranspiration</li> <li>• causes of climate lab</li> <li>• open ended diagram &amp; simulation questions that relate water budgets to climate</li> <li>• multiple choice Regents questions</li> </ul>

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February	<ul style="list-style-type: none"> <li>• Weathering processes</li> <li>• Erosional processes</li> <li>• Depositional processes</li> </ul>	<ul style="list-style-type: none"> <li>• Contrast physical &amp; chemical weathering processes.</li> <li>• Given a climate type, identify the dominant form of weathering.</li> <li>• Relate erosion &amp; deposition to specific topographical features.</li> </ul>	<ul style="list-style-type: none"> <li>• rock abrasion &amp; weathering rates labs</li> <li>• stream processes lab that deals with erosion</li> <li>• agents of erosion lab that relates sediment characteristics to the agent that moved the sediment</li> <li>• multiple choice Regents ques.</li> </ul>
March	<ul style="list-style-type: none"> <li>• The rock cycle</li> <li>• Mineral identification</li> <li>• Rock classification</li> </ul>	<ul style="list-style-type: none"> <li>• Identify minerals on the basis of their physical characteristics.</li> <li>• Classify &amp; identify rocks on the basis of their physical characteristics.</li> <li>• Use a rock's physical characteristics &amp; the rock cycle to infer &amp; explain the specific processes that formed the rock.</li> </ul>	<ul style="list-style-type: none"> <li>• mineral identification lab</li> <li>• labs on identifying igneous, sedimentary, &amp; metamorphic rocks</li> <li>• lab exam on rocks &amp; minerals</li> <li>• multiple choice Regents ques.</li> <li>• quiz on a computer program for rocks &amp; minerals</li> </ul>

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April	<ul style="list-style-type: none"> <li>• Plate tectonics</li> </ul>	<ul style="list-style-type: none"> <li>• Identify regional bedrock structures that indicate crustal movement.</li> <li>• Give regional bedrock structure, identify the related crustal movements.</li> <li>• Explain the relationship between surface topography &amp; crustal plate movement.</li> <li>• Given simulated data, identify the location of an earthquake epicenter.</li> <li>• Describe the earth's interior on the basis of seismic wave studies.</li> <li>• Describe the inferred mechanism that causes crustal plate movement.</li> </ul>	<ul style="list-style-type: none"> <li>• plate tectonics lab that relates earthquake locations with plate boundaries</li> <li>• epicenter lab on locating an earthquake epicenter</li> <li>• diagram interpretation on inferences about the type of plate boundary</li> <li>• multiple choice Regents questions</li> <li>• quiz on the plate</li> <li>• tectonics computer program</li> </ul>

