

# MARLBORO CENTRAL SCHOOL DISTRICT - CURRICULUM MAP

## Subject: Physical Setting: Earth Science (Regents)

Title or Topics (Unit organizing idea)	Concepts (NYSED Performance Indicators)	Skills	Major Assessments (Tests, projects, etc.)	Time Frame (Number of weeks)
<b>Introduction: Graphing Density Math in Science Lab Format Prior Knowledge</b>	Density Rate of Change Inverse vs Direct Relationships Cyclic Events Classification Chart Reading  STD 1 Math KI 1,2,3	Mass Objects in grams Find volume of regular and irregular objects Calculate density Graph data and identify relationships from graph Apply concepts to real world phenomena Solving problems and old Regents questions on the topics of density, rate of change, and graphing/chart reading  STD 1 Science KI 1,2,3	Density related activities Demonstrations; Fish tank Blocks Liquids Gasses Lava lamp Convection  Intro to Planetarium Facility  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)	~3
<b>Measuring Earth / Topography / Mapping</b>	Latitude/Longitude (1.1c) Time Zones Topographic Maps (2.1q) Gradient Field Maps Profile Maps  STD 6 KI 2,3	Reading latitude and longitude on maps Reference Table reading of charts Reading and drawing topographic maps Constructing a field map Drawing isolines (isotherms, isobars, contour lines) Calculate gradient Draw Profile Maps Working with map scales and measuring distances	Topographic Map Making Profile Map Making Constructing a Field Map  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)	~3
<b>Rocks and Minerals</b>	Igneous Rocks Sedimentary Rocks Metamorphic Rocks Rock Cycle (3.1b,c) Minerals (Physical Properties and Methods of Identification) (3.1a) STD 6 KI 2	Identify Minerals Identify Rocks Reading Reference Table charts	Rock Identification Mineral Identification  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)	~4

<p><b>Dynamic Crust</b></p>	<p>Earthquakes (2.1j,k) Seismic waves Earth's interior sections Plate Tectonics (2.1 l,m,n,o) Lithosphere and Asthenosphere Convergent, Divergent, and Transform Plate boundaries Mid Ocean Ridges and Subduction Zones Hot Spots Emergency Preparedness (STD 7 KI 1,2)STD 6 KI 5</p>	<p>Locate the epicenter of an earthquake using P and S wave information Reference Table chart reading Use the Mercalli and Richter Scales Plot earthquakes and volcanoes and see the pattern with plate boundaries Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)</p>	<p>Locate an Earthquake Epicenter  Richter and Mercalli Scales  Evidence for Plate Tectonics  Distribution of Earthquakes and Volcanoes</p>	<p>~3</p>
<p><b>Weathering/ Erosion/ Deposition</b></p> <p><b>Landscapes</b></p>	<p>Weathering Erosion Deposition (2.1 r,s,t,u,v,w) Erosional Agents  <ul style="list-style-type: none"> <li>• Water/Wave Action</li> <li>• Wind</li> <li>• Glaciers</li> <li>• Gravity</li> </ul>           Landscapes and Landscape Regions (Plains, Plateaus, and Mountains) (2.1p)</p>	<p>Reference Table chart reading Diagram Stream Profiles and Stream Cross Sections Relate the difference between erosion and deposition on stream bends  (STD 6 KI 1)</p>	<p>Weathering Rates Stream Development Stream Table Landforms Models  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)</p>	<p>~3</p>
<p><b>Earth History</b></p>	<p>Relative Age Correlation Unconformity Absolute Age Half-Life and Radioactive Dating Geologic Time Scale Evolution – of Life and the Earth itself) Contact Metamorphism  STD 4 1.2 e,f,h,i,j STD 6 KI 3</p>	<p>Be able to order the sequence of layers in an outcrop with the laws of relative aging Correlate different rock layers Use index fossils to Correlate Calculate Half-Life problems Determine the age of a sample using radioactive dating</p>	<p>Correlation Fossil (Index) Study Half Life  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)</p>	<p>~5</p>

<b>Meteorology</b>	Weather Patterns (2.1a,h) Atmosphere Parts (2.1b) Weather Variables – Temperature, Pressure, moisture and Wind) (2.1c) Humidity Dewpoint (2.1d,e,f) High and Low Pressure Systems Instruments to measure weather variables (2.1 d) Wind Patterns Seasonal weather changes r Fronts Source Regions (2.1g) Tornadoes/Hurricanes (2.1h,i) Emergency Preparedness	Read Weather Maps Construct weather maps Predict future weather for an area using weather maps Draw and read weather station models Use the Reference Table charts to calculate dewpoint and relative humidity Reference Table chart reading Graph weather variables and determine relationships between variables Reading weather instruments (thermometer, psychrometer, barometer) Map the path of hurricanes and tornadoes Analyze wind patterns and ocean current Diagram frontal boundary cross sections Draw frontal boundaries on a weather map	LONG TERM PROJECT: Tracking Hurricanes (STD 2 KI 1,2,3)  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)	~4
<b>Climate</b>	Hydrologic Cycle Porosity Permeability Capillarity Runoff Infiltration (1.2 g) Insolation (Angle/Duration) Factors Affecting Climate Convection and Radiation El Niño Greenhouse Effect (2.2 a,b,c,d) STD 6 KI 6	Reference Table chart reading Diagram how angle and duration of insolation changes throughout the seasons on a plastic hemisphere Graph carbon dioxide levels in the atmosphere and relate this phenomenon to the greenhouse effect	Factors Affecting Climate Rates of Infiltration Porosity, Permeability and Capillarity  Quizzes and Tests based on Regents Questions (Multiple Choice and Free/Constructed Response)	~3

<b>Astronomy</b>	Motions of Celestial Objects (Day, Year) (1.1a) Rotation – 15°/hr (1.1d,e) Revolution Seasons (1.1 f,g,h) Universe (origin) (1.2a) Doppler Effect Galaxy Star Formation (1.2b) Solar System (Parts) (1.2c,d) Planets, Eccentricity (1.1b,c) Moon – tides, phases eclipses (1.1a,i) STD 6 KI 3, 4, 5	Reference Table Chart reading Working with a celestial sphere to draw the path of sun (sun’s motions) throughout various seasons Reading Spectral Lines Reference Table Chart reading Draw ellipses Calculate eccentricity Make scale model of the solar system  Planetarium visits	Seasons Daily and Yearly Motions of the Sun  Sun’s motion in Planetarium  Planetarium visits  Quizzes and Tests based on Regents Questions (MC and Constructed Response) Ellipses and Eccentricity Moon’s Phases/Eclipses Spectroscopy Quizzes and Tests based on Regents Questions	~5
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