

8<sup>th</sup> Earth Science  
Curriculum Mapping  
2019-2020  
Mark Joachim

<b>Unit:</b> <i>Nature of Science</i>		<b>Time:</b> <i>August 2019</i>
<b>Standards Taught</b>		
<ul style="list-style-type: none"> <li>• <i>Identify scientific methods.</i></li> <li>• <i>Define science and Earth science.</i></li> </ul>		
<b>Differentiation/Assessment:</b>	<b>Classroom Management and Environment:</b>	<b>What will the students be doing?</b>
<i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i>	<i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i>	<i>Discuss the limits of science. Define and .</i>
<b>Prior Knowledge Needed</b>	<b>Vocabulary</b>	<b>Assessments</b>
<i>Students have a limited foundation in science that they will draw upon in this course.</i>	<i>scientific method SI units constant control independent variables dependent variables scientific theory hypothesis ethics bias scientific law</i>	<i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i>
<b>Reflection:</b> <i>This chapter is a review of science concepts from previous courses.</i>	<b>Essential Questions:</b> <ul style="list-style-type: none"> <li>• <i>Why is science always changing?</i></li> <li>• <i>What are scientific methods?</i></li> <li>• <i>Why does an experiment need to be repeatable?</i></li> <li>• <i>?</i></li> </ul>	
<b>Relevance:</b>	Students learn to understand the world around them.	

<b>Unit:</b> <i>Earth's Air and Water</i>		<b>Time:</b> <i>September- November 2019</i>
<b>Standards Taught</b>		
<ul style="list-style-type: none"> <li>• <i>MS-ESS2-1, MS-ESS2-4 MS-ESS2-5, MS-ESS2-6,</i></li> <li>• <i>MS-ESS-1, MS-ESS-6,</i></li> <li>• <i>MS-ESS1-1,</i></li> </ul>		
<b>Differentiation/Assessment:</b>	<b>Classroom Management and Environment:</b>	<b>What will the students be doing?</b>
<i>Students who needed the extra help received guided notes, extra individual</i>	<i>The classroom is set up using student tables, with 2 students per table. The students move into different</i>	<i>Students will explain what causes air pressure. Identify gases in Earth's atmosphere.</i>

<p><i>practice, modified questions and shortened tests.</i></p>	<p><i>groups for labs and group projects.</i></p>	<p><i>Describe what happens to the energy from the Sun. Explain how solar heating and water vapor in the atmosphere affect weather. Check the relative humidity in several locations to compare differences. Demonstrate how the Coriolis affects the wind movement across USA. Describe the density of water.</i></p>
<p><b>Prior Knowledge Needed</b></p>	<p><b>Vocabulary</b></p>	<p><b>Assessments</b></p>
<p><i>Students have a limited foundation in science that they will draw upon in this course.</i></p>	<p><i>Atmosphere, troposphere Ionosphere, ozone layer UV – ultraviolet radiation CFC – chlorofluorocarbon radiation, convection conduction, hydrosphere condensation, Coriolis effect jet stream, sea breeze land breeze, weather, humidity, relative humidity dew point, fog, precipitation, air mass, front, tornado, hurricane, blizzard, meteorologist, station model, isotherm, isobar, climate, tropics, polar zone, temperate zone, adaptation, hibernation, El Nino, greenhouse effect, global warming, deforestation, Basin, salinity, upwelling, tidal range, tide, continental shelf, continental slope, abyssal plain, mid-ocean ridge, chemosynthesis, benthos, nekton,</i></p>	<p><i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i></p>
<p><b>Reflection:</b> <i>This unit is important in the study of the atmosphere, and the forces that drive the weather, and changing weather.</i></p>	<p><b>Essential Questions:</b></p> <ul style="list-style-type: none"> <li>• <i>Why do wind systems determine major weather patterns on Earth?</i></li> <li>• <i>What causes air pressure?</i></li> <li>• <i>How can weather affect your daily activities?</i></li> <li>• <i>Why do air masses, pressure systems and fronts cause weather to change?</i></li> <li>• <i>What climates allow or does not allow all organisms to live and thrive there?</i></li> <li>• <i>How much of the Earth is covered by oceans?</i></li> </ul>	
<p><b>Relevance:</b></p>	<p>The sun provides energy to Earth's atmosphere, allowing life to exist.</p>	

<b>Unit:</b> <i>Earth's Materials</i>		<b>Time:</b> <i>December - January 2019</i>
<b>Standards Taught</b>		
<ul style="list-style-type: none"> <li>• <i>MS- PS1-1, MS-PS1-2, MS-PS1-3, MS- PS1-5,</i></li> <li>• <i>MS-ESS2-1, MS-ESS2-2, MS-ESS2-3,</i></li> <li>• <i>MS-ESS3-1,</i></li> </ul>		
<b>Differentiation/Assessment:</b>	<b>Classroom Management and Environment:</b>	<b>What will the students be doing?</b>
<i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i>	<i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i>	<i>Students will: Describe characteristics that all minerals share. Explain how minerals form. Draw and describe the internal structure of an atom. Identify useful elements that are contained in all minerals.</i>
<b>Prior Knowledge Needed</b>	<b>Vocabulary</b>	<b>Assessments</b>
<i>Students have a limited foundation in science that they will draw upon in this course.</i>	<i>Matter, crystal, magma, silicate, specific gravity, ore, foliated, nonfoliated, rock cycle, igneous, metamorphic, intrusive extrusive, sedimentary rock, compaction, cementation, basaltic, granitic, fossil fuel, coal, oil, petroleum, natural gas, Reserve, nuclear energy, solar energy, wind farm, hydroelectric energy, geothermal energy, recycling, mineral resource.</i>	<i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i>
<b>Reflection:</b> <i>They began to understand just how elements combine to form compounds</i>	<b>Essential Questions:</b> <ul style="list-style-type: none"> <li>• <i>How are minerals used in our everyday life?</i></li> <li>• <i>What impact do atoms have on our lives?</i></li> <li>• <i>What causes atoms to combine to form new substances?</i></li> <li>• <i>How is a rock different from a mineral?</i></li> </ul>	
<b>Relevance:</b>	The students will gain a simple knowledge of what elements combine, and why they combine.	

<b>Unit:</b> <i>The Changing Surface of the Earth</i>		<b>Time:</b> <i>February - March 2020</i>
<b>Standards Taught</b>		
<ul style="list-style-type: none"> <li>• <i>MS-ESS2-1, MS-ESS2-3, MS-ESS2-4</i></li> <li>• <i>MS-ESS3-1,</i></li> </ul>		
<b>Differentiation/Assessment:</b>	<b>Classroom Management and Environment:</b>	<b>What will the students be doing?</b>

<i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i>	<i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i>	<i>Designing stream tables for erosion and for slowing down erosion. Explain how climate affects weathering. Describe soil characteristics.</i>
<b>Prior Knowledge Needed</b>	<b>Vocabulary</b>	<b>Assessments</b>
<i>Students have a limited foundation in science that they will draw upon in this course.</i>	<i>Weathering, mechanical, chemical, ice wedging, oxidation, soil, humus, horizon, soil profile, litter, leaching, no-till farming, contour farming, terracing, erosion, deposition, mass movement, slump, creep, plucking, till, moraine, outwash, deflation, abrasion, loess, dune, runoff, channel, aquifer, drainage basin, permeable, impermeable, water table, geyser, longshore current.</i>	<i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i>
<b>Reflection:</b> <i>They made the connection with the weathering of the roads and potholes.</i>	<b>Essential Questions:</b> <ul style="list-style-type: none"> <li>• <i>How is soil formed?</i></li> <li>• <i>How is chemical weathering different from mechanical weathering?</i></li> <li>• <i>What is the difference between erosion and deposition?</i></li> <li>• <i>What can we do to slow the effects of erosion?</i></li> </ul>	
<b>Relevance:</b>	Understanding how the surface of the earth changes and erodes the soil, and why not building on steep slopes is important.	

<b>Unit:</b> <i>Earth's internal Process</i>		<b>Time:</b> <i>April – May 2020</i>
<b>Standards Taught</b>		
<ul style="list-style-type: none"> <li>• MS-ESS2-2, MS-ESS2-3,</li> <li>• MS-PS3-1,</li> <li>• MS-PS4-1, MS-PS4-2</li> </ul>		
<b>Differentiation/Assessment:</b>	<b>Classroom Management and Environment:</b>	<b>What will the students be doing?</b>
<i>Students who needed the extra help received guided notes, extra individual practice, modified questions and shortened tests.</i>	<i>The classroom is set up using student tables, with 2 students per table. The students move into different groups for labs and group projects.</i>	<i>The students will understand how seafloor spreading helps explain why continents moved apart. Watch the movie San Andreas and be able to describe reality and entertainment with results and the aftermath of an earthquake.</i>
<b>Prior Knowledge Needed</b>	<b>Vocabulary</b>	<b>Assessments</b>
<i>Students have a limited foundation in science that they will draw upon in this course.</i>	<i>Continental drift, Pangaea, seafloor spreading, plate tectonics, plate, lithosphere, asthenosphere, convection current, fault, normal fault, reverse fault, strike-slip fault, seismic wave, focus, primary wave, secondary wave, surface wave, epicenter, seismograph, liquefaction, tsunami, magnitude,</i>	<i>Students will answer questions in class, participate in discussions, daily assignments, group work, labs, and take chapter tests.</i>
<b>Reflection:</b> <i>Students understand the need for safety in seismic safe structures in highly populated areas.</i>	<b>Essential Questions:</b> <ul style="list-style-type: none"> <li>• <i>What evidence is there for seafloor spreading?</i></li> <li>• <i>What happens when plates collide, diverge or move past each other?</i></li> <li>• <i>Why does a transform fault not cause a tsunami?</i></li> <li>• <i>Where do most earthquakes occur?</i></li> <li>• <i>How is the epicenter of an earthquake located?</i></li> </ul>	
<b>Relevance:</b>	Understanding what causes earthquakes and what can possibly be done to minimize the damage and casualties from earthquakes.	