

Course Name		Earth & Space Science			60 Class Periods
School Year		2010/2011			
CE Codes	Unit Name	Classroom Activities	Computer Labs	Videos	Assessments
E1.1A, E1.1B, E1.1C, E1.1D, E1.1E, E1.1f, E1.1g, E1.1h, E1.1i, E1.2A, E1.2B, E1.2C, E1.2D, E1.2E, E1.2f, E1.2g, E1.2h, E1.2i, E1.2j, E1.2k	Tools of Science/Science as a Process	PowerPoint Lecture/Discussion <ul style="list-style-type: none"> The Scientific Process Using ImageJ Seismometers, Telescopes and More: Tools of Earth & Space Scientists Labs <ul style="list-style-type: none"> Density of Hematite – Using a Triple Beam Balance and Finding Volume by Water Displacement Model Seismometer Build Your Own Simple Refracting Telescope 	<ul style="list-style-type: none"> Spreadsheet Lessons Density of Hematite – Finding the average density of a substance from the graph of a line plot for mass and volume measurements. Image J Lessons Polar Bears in Peril – Arctic Sea Ice Analysis 	NONE	<ul style="list-style-type: none"> - Lab Report - Image J Skills Test - Formative assessment probes - Unit One Test

<p>E2.2C, E3.2A, E3.2B, E3.2C, E3.2d, E3.4B, E3.4C, E3.4f, E2.1B, E2.1C, E2.2A, E3.3A, E3.3B, E3.3C, E3.3d, E3.3e, E3.1A, E3.1B, E3.1c, E3.1d, E2.1e, E5.3B, E5.3C, E5.3D, E5.3e, E5.3e, E5.3f, E5.3g</p>	<p>Dynamic Planet</p>	<p>PowerPoint Lecture/Discussion</p> <ul style="list-style-type: none"> Formation of the Earth – Planetary Structure THEMIS Mission Science Plate Tectonics Volcanic Hazards Rock My World: Advanced Rock Cycle The Age of the Earth <p>Labs</p> <ul style="list-style-type: none"> Mapping Magnetic Fields (THEMIS) Jump Rope Generator/Induction in an Aluminum Can Plasticity of the Mantle (Ooblek Lab) Peanut M&M Model of the Earth’s Interior Diet Coke “Eruption” (Effect of dissolved gases on explosivity) Edible Volcanics – Pumice Sea Foam The Rock Cycle Lab Differential Weathering (Baby Ruth Lab) <p>Guided Readings</p> <ul style="list-style-type: none"> The Mantle Moves Us 	<p>These programs are introduced in Earth & Space Science and applied to problem solving exercises in Astronomy and Oceanography</p> <ul style="list-style-type: none"> Seismic Eruption Seismic Wave EQ Locator <p>Seismic Eruption Labs:</p> <ul style="list-style-type: none"> Locating plate boundaries Creating an earthquake depth cross section <p>Other Labs:</p> <ul style="list-style-type: none"> Grain Size in Igneous Rock Spreadsheet Lab The Dating Game: Radioactive Half Life and Dating Techniques <p>http://tea.armadaproject.org/activity/tulley/thedatinggame_student.html</p> <ul style="list-style-type: none"> Radioactive Decay: A Sweet Simulation of a Half-life <p>http://www.sciencenetlinks.com/lessons.cfm?DocID=178</p>	<ul style="list-style-type: none"> Magnetic Storm (NOVA) Miracle Planet: The Heat Within In the Path of a Killer Volcano (NOVA) Planet Earth: The Living Planet 	<ul style="list-style-type: none"> Formation of the Earth – Planetary Structure Quiz THEMIS Mission Science Quiz Plate Tectonics Quiz Volcanic Hazards Quiz Rock My World Quiz Rock Cycle Quiz Radiometric Dating Quiz Relative Dating Quiz Unit 2 Test
<p>E2.1C, E2.3b, E2.3c, E4.1A, E4.1B, E4.1C, E2.2A, E2.2C, E2.2D, E4.3A, E4.3B, E4.3C, E4.3D, E4.3E, E4.3F, E4.3g</p>	<p>Severe Weather</p>	<p>Power Point Lecture/Discussion</p> <ul style="list-style-type: none"> Flooding: Rivers and Lakes Twisters, Floods, Blizzards and Drought: Severe Weather in Michigan <p>Labs</p> <ul style="list-style-type: none"> Porosity & Permeability Lab Finding Dew point Temperature Determining Cloud Height From Dew Point Temperature S’COOL Cloud Observations 	<ul style="list-style-type: none"> Virtual River: River Discharge <p>*Internet connection required</p> <ul style="list-style-type: none"> Water Contamination Vernier Lab Severe Weather Preparedness Video Podcast 	<ul style="list-style-type: none"> Flood! (NOVA) Earth Revealed – Episode 19: Erosion and Deposition Hurricane (NOVA) 	<p>Severe Weather in Michigan Quiz</p> <p>Cloud Formation & Types Quiz</p> <p>Unit 3 Test</p>

<p>E2.2B, E2.2C, E2.2e, E2.2f, E2.4A, E2.4B, E2.4c, E2.4d E2.1B, E2.1C, E2.2C, E2.2e, E4.2A, E4.2B, E4.2c, E4.2d, E4.2e, E4.2f E2.1A, E2.1B, E2.1C, E2.2e, E2.2f, E2.3A, E2.3d, E5.4A, E5.4B, E5.4C, E5.4D, E5.4e, E5.4f, E2.1A, E5.4g</p>	<p>Climate Change and Sustainable Development</p>	<p>PowerPoint Lecture/Discussion</p> <ul style="list-style-type: none"> Global Warming: A Conundrum of Modern Times O-A Interactions Quiz The Thirsty Southwest: Water Supply Issues Michigan Glacial History Resource Development & Sustainability <p>Labs</p> <ul style="list-style-type: none"> Mining in Michigan <i>To Mine Ore Not to Mine</i> – Economics of Mining 	<ul style="list-style-type: none"> To Mine Ore Not to Mine Spreadsheet component Is Our Planet Warming? Spreadsheet Activity Where Did the Ozone Go? (Image J) 	<ul style="list-style-type: none"> Planet Earth: Gifts From the Earth Modern Mining & You If It's Yours, It's Mined Chasing El Nino The Climate Puzzle Mystery of the Megaflood 	<p>Global warming Quiz Climate Change Quiz Mining in Michigan Quiz</p> <p>Unit 4 Test</p>
<p>E5.2A, E5.2B, E5.2C, E5.2D, E5.2e, E5.2f, E5.2g, E5.2h</p>	<p>The Sun and Other Stars</p>	<p>PowerPoint Lecture/Discussion</p> <ul style="list-style-type: none"> Our Dynamic Sun Stellar Life Cycle Light <p>Labs</p> <ul style="list-style-type: none"> H-R Diagram Activity Parallax Lab Introduction to Spectroscopy TLRBSE Solar Spectra Activities THEMIS E/PO Activities <p>Guided Reading</p> <ul style="list-style-type: none"> The Red Giant 	<ul style="list-style-type: none"> Rotational Period of the Sun Blazing Sunspots 	<ul style="list-style-type: none"> Solar Max Blackout! The Planets 	<p>Our Dynamic Sun Quiz Stellar Life Cycle Quiz Light Quiz</p> <p>Unit 5 Test</p>
<p>E5.1A, E5.1b, E5.1c, E5.1d</p>	<p>Cosmology and Earth's Place in the Universe</p>	<p>PowerPoint Lecture/Discussion</p> <ul style="list-style-type: none"> Big Bangs and Black Holes: Cosmic Catastrophes <p>Labs</p> <ul style="list-style-type: none"> Elliptical Orbits <p>Guided Reading</p> <ul style="list-style-type: none"> Hubble's Deep View Nightly Rounds 	<p>Hubble's Law Spreadsheet</p>	<ul style="list-style-type: none"> From Here to Infinity Black Holes 	<p>Big Bangs and Black Holes: Cosmic Catastrophes Quiz</p> <p>Unit 6 Test</p>