

RSU # 38 CURRICULUM GUIDE

Grade 9 SCIENCE: Earth Systems Science 17-18

<u>Unit</u>	<u>Graduation Standard</u>	<u>Priority Outcomes</u>	<u>Unit</u>	<u>Graduation Standard</u>	<u>Outcomes</u>
<u>I. Earth Systems' Chemistry</u> (6-8 weeks)	PHYSICAL SCIENCE :	PS1-1 Predict subatomic particles for elements using information from the Periodic Table Target: Use the periodic table to predict properties of elements and justify a prediction based on valance electrons Target: Use the periodic table to create simple (binary) ionic and covalent (including polar covalent) compounds Target: Explain/predict the outcome of a chemical reaction and justify your answer	<u>III. Plate Tectonics</u> (4-5 weeks)	EARTH and SPACE SCIENCE:	ESS2-1a Explain how data (i.e. nuclear, surface features) provides evidence of past changes in earth's crust
		ESS2-1b Identify patterns in data about rock ages, volcanism, and changes in earth's surface.			
		ESS2-1c Explain how the model created in a lab parallel changes in the exterior and interior of the earth.			
		ESS2-1d Compare densities of ocean crust and continental crust and explain the relationship to subduction			
		ESS.3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity			
<u>II. Water : Properties & Effects on Earth Materials & Processes</u>	EARTH and SPACE SCIENCE	ESS 2-5 Plan and conduct an investigation of the properties of water and it's effect on earth's materials and surface processes	<u>IV. Earth History</u> (2-3 weeks)	EARTH and SPACE SCIENCE	ESS1-6ESS1-6a Create a timeline to construct a record of earth's formation and early history.
		ESS1-6b Infer from data an argument about the simultaneous coevolution of Earth's systems and life on Earth			
		PHYSICAL SCIENCE			PS1-8 ESS1-4 Interpret radiometric data from a graph and explain it's use in dating materials
			<u>V. Climate</u>	EARTH and SPACE SCIENCE	ESS 2-3 Show in a model how thermal convection is involved in changes in different layers of the earth

			<p><u>V.</u> <u>Climate</u> <u>(cont.)</u></p>	<p>EARTH and SPACE SCIENCE</p>	<p>ESS 2-4 Interpret a model to describe how variations in the flow of energy into and out Earth's systems may result in changes in climate</p> <p>ESS2-6 Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere</p>	
					<p>ESS 3-1 Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity</p>	
					<p>ESS 3-5 Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems</p>	
					<p>ESS 3-6 Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity</p>	
					<p>Engineering and Technology</p>	<p>ETS1-Analyze a situation regarding criteria and constraints for engineered solutions that account for societal needs and wants</p>
						<p>Apply practices of engineering by following a process of designing and testing a product</p>