Overview of ESS Unit 3 Restless Earth

Content Focus	Duration	Instructional Outcomes
Introduction to Project: Geological Trip? *Students will be presented with RFP and Project Scoring Tool.*	2 Days	• Students will learn to specify criteria and constraints for the design of the project. • Students will identify several places around the world where plates interact and explain the unique geological features associated with the different types of plate movement. **Geological Trip Project Connection:** *Students will be introduced to different locations around the world with interesting tectonic environments. Students will begin to identify the plate boundaries and plate motion at each location and describe the geological feature at each location.*
Plate Tectonics *Internal energy is the driving force of the movement and those interactions influence other parts of the Earth System and affect human activities.*	8 Days	• Students will explain changes in Earth's surface using plate tectonics. They will explain the theory of plate tectonics using evidence from crustal plate composition, mantle circulation, divergent/convergent/transform fault boundaries, subduction zones, trenches, island arcs, and mountain building. • Students will describe continental drift by explaining evidence of rocks, structures, climate, fossil evidence and jigsaw fit. • Students will explain sea floor spreading using age evidence, mantle circulation, outer core circulation/magnetic reversals, seismic activity, volcanism, mountain building, and ocean ridges. **Geological Trip Project Connection:** *In order for students to correctly identify and explain plate interactions they will need to investigate how we know the plates are moving and the types of movement.*
Earthquakes *Studying patterns in earthquakes are vital to understanding the effects that Earth's internal processes have on its surface and living systems.*	10 Days	• Students will explain changes in Earth's surface using plate tectonics and the theory of plate tectonics using seismic activity as evidence. **Geological Trip Project Connection:** *Students will identify that earthquakes occur along plate boundaries. Students will use this information to explain how an earthquake's energy travels through the Earth and the impact it has on the RFP's identified geological features.*
Volcanoes *Volcanoes are an important factor in understanding the internal energy that is the driving force of the movement of tectonic plates.*	7 Days	• Students will explain changes in Earth's surface using plate tectonics and the theory of plate tectonics using volcanism as evidence. **Geological Trip Project Connection:** *Students will identify that volcanoes occur along plate boundaries. They will then use this information to support which specific locations, given in their RFP, have this active geological process and feature.*
Geological Trip Project Evaluation *Final Projects will be displayed and evaluated*	1 Days	• Students will learn that design is a creative planning process that leads to useful systems and that design usually requires taking constraints into account. *Students will apply the knowledge they have gained throughout the entire unit sequence to create their travel brochures.*