Sixth Grade Unit 4 – Plate Tectonics and Fossils

Code	Statements & Expectations	Page	Learning Targets I can …
E.SE.M.5	**Plate Tectonics – The lithospheric plates of the Earth constantly move, resulting in major geological events, such as earthquakes, volcanic eruptions, and mountain building.**	5	
E.SE.06.51	Explain plate tectonic movement and that the lithospheric plates move centimeters each year.	5	
E.SE.06.52	Demonstrate how major geological events (earthquakes, volcanic eruptions, mountain building) result from these plate motions.	6	**E.SE.06.52.a** I can demonstrate how plate motions cause earthquakes. **E.SE.06.52.b** I can demonstrate how plate motions cause volcanic eruptions. **E.SE.06.52.c** I can demonstrate how plate motions cause mountain building.
E.SE.06.53	Describe layers of the Earth as lithosphere (crust and upper mantle) convecting mantle, and a dense metallic core.	7	**E.SE.06.53.a** I can label and describe the layers of the Earth as crust and upper mantle, convection, mantle, and dense metallic core.
E.ST.M.3	**Fossils – Fossils provide important evidence of how life and environmental conditions have changed in a given location.**	7	
E.ST.06.31	Explain how rocks and fossils are used to understand the age and geological history of the Earth (timelines and relative dating, rock layers).	7	**E.ST.06.31.a** I can use rocks and fossils to explain geological history and age of the earth.
E.ST.M.4	**Geologic Time – Earth processes seen today (erosion, mountain building, and glacier movement) make possible the measurement of geologic time through methods such as observing rock sequences and using fossils to correlate the sequences at various locations.**	8	

E.ST.06.41	Explain how Earth processes (erosion, mountain building, and glacier movement) are used for the measurement of geologic time through observing rock layers.	8	**E.ST.06.41.a** I can explain how erosion is used to measure geologic time in rock layers. **E.ST.06.41.b** I can explain how mountain building is used to measure geologic time in rock layers. **E.ST.06.41.c** I can explain how glacier movement is used to measure geologic time in rock layers.
E.ST.06.42	Describe how fossils provide important evidence of how life and environmental conditions have changed.	9	

Inquiry Process	**Learning Targets (I can …)**
S.IP.06.11 Generate scientific questions based on observations, investigations, and research about the plate tectonic movement.	**S.IP.06.11.a** I can create scientific questions based on observations, investigations, and research.
S.IP.06.12 Design and conduct scientific investigations into erosion, mountain building, and glacier movement.	**S.IP.06.12.a** I can describe limitations in personal and scientific knowledge.
S.IP.06.13 Use tools and equipment (spring scales, stop watches, meter sticks and tapes, models, hand lens, thermometer, sieves, microscopes) appropriate for observations and scientific investigations into earthquakes, volcanoes, and mountain building.	**S.IP.06.13.a** I can identify the need for evidence in making scientific decisions.
S.IP.06.14 Use metric measurement devices in model building for investigations into major geological events.	**S.IP.06.14.a** I can use metric measurement devices.
S.IP.06.15 Construct charts and graphs from data and observations of models of geological events, fossils, and erosion.	
S.IP.06.16 Identify patterns in data.	
Inquiry Analysis and Communication	
S.IA.06.11 Analyze information from data tables and graphs to answer questions about the formation of volcanoes, mountains, and earth processes.	

S.IA.06.12 Evaluate data, claims, and personal knowledge through collaborative science discourse about the theory of tectonic plates and the importance of evidence through fossils.	
S.IA.06.13 Communicate and defend findings of observations and investigations into major geological events and earth processes using evidence.	
S.IA.06.14 Draw conclusions from sets of data from multiple trials of scientific investigation of major geological events and earth processes.	
S.IA.06.15 Use multiple sources of information to evaluate strengths and weaknesses of claims, arguments, or data regarding plate tectonics and the evidence provided by fossils.	
Reflection and Social Implications	
S.RS.06.11 Evaluate the strengths and weaknesses of claims, arguments, and data regarding plate tectonics and the evidence provided by fossils.	
S.RS.06.12 Describe limitations in personal and scientific knowledge regarding plate tectonics and the history of the Earth.	
S.RS.06.13 Identify the need for evidence in making scientific decisions.	
S.RS.06.14 Evaluate scientific explanations based on current evidence and plate tectonics and evidence from fossils.	
S.RS.06.15 Demonstrate plate movement, formation of mountains and volcanoes, and the occurrence of earthquakes through various illustrations, models, exhibits, and activities.	**S.RS.06.15.a** I can models scientific concepts through illustration, performances, models, exhibits, and activities.
S.RS.06.16 Design solutions to problems using technology.	
S.RS.06.18 Describe what science and technology can and cannot reasonably contribute to the study of major geological events and determining the history of the Earth.	
S.RS.06.19 Describe how science and technology have advanced because of the contributions of many people throughout history and across cultures.	