Marietta City Schools

District Unit Planner

Everything on the unit planner must be included on the unit curriculum approval statement.

Science Grade 6

Unit title	*Earth's Changing Landscapes Part 1 Plate Tectonics*	**MYP year**	*1*	**Unit duration (hrs)**	*20 Hours*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): *What will students learn?*

GSE Standards

Standards

S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth processes.

c. Ask questions to identify and communicate, using graphs and maps, the composition, location, and subsurface topography of the world's oceans.

S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.

a. Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.

f. Construct an explanation of how the movement of lithospheric plates, called plate tectonics, can cause major geologic events such as earthquakes and volcanic eruptions. (Clarification statement: Include convergent, divergent, and transform boundaries.)

g. Construct an argument using maps and data collected to support a claim of how fossils show evidence of the changing surface and climate of the Earth.

Prior Student Knowledge: (REFLECTION – PRIOR TO TEACHING THE UNIT)

S5E1. Obtain, evaluate, and communicate information to identify surface features on the Earth caused by constructive and/or destructive processes.

a. Construct an argument supported by scientific evidence to identify surface features (examples could include deltas, sand dunes, mountains, volcanoes) as being caused by constructive and/or destructive processes (examples could include deposition, weathering, erosion, and impact of organisms).

b. Develop simple interactive models to collect data that illustrate how changes in surface features are/were caused by constructive and/or destructive processes.

c. Ask questions to obtain information on how technology is used to limit and/or predict the impact of constructive and destructive processes.

Concepts/Skills to be Mastered by Students

- Plate Tectonics
- Land Features
- Catastrophic Events
- Geologic Time Scale

Key Vocabulary: (KNOWLEDGE & SKILLS)

Earth's Layers	Tectonic Plates	Ocean Floor Features	Volcanoes	Earthquakes
Geosphere Crust Mantle Convection Current Inner Core Outer Core Asthenosphere Lithosphere	Lithospheric Plates or Tectonic plates -Oceanic plates -Continental plates Divergent boundary -Seafloor spreading Convergent boundary -Subduction Transform boundary **History of Tectonic Plates:** Pangaea Continental Drift	Subsurface Topography Continental shelf Continental slope Trench Abyssal plain Guyot Seamount Mid-ocean Ridge Rift Valley Volcano	Magma Lava Ring of Fire Hot Spot Geothermal Energy Igneous Rock	Richter scale Seismic waves Focus Epicenter Frequency Landslide Mass wasting Gravity Tsunami

Year-Long Anchoring Phenomena: (LEARNING PROCESS)
Earth is the only planet in our solar system that is able to support life.

Unit Phenomena (LEARNING PROCESS)
Impossible Trailer - https://www.youtube.com/watch?v=Bgw394ZKsis
Trailer about the 2004 Indian Ocean earthquake and tsunami and a family's struggle to survive. Follow up with I notice I wonder using flipgrid.

Possible Preconceptions/Misconceptions: (REFLECTION – PRIOR TO TEACHING THE UNIT)
You can travel to the center of earth.
Mountains, valleys, and all landforms have always been there and don't change.

Everywhere on earth experiences earthquakes.
The continents were never joined together.
The ocean floor is flat.
The floor of the ocean is only cold.

Key concept	Related concept(s)	Global context
Connections Connections are links, bonds and relationships among people, objects, organisms or ideas.	Transformation (MYP) Energy (MYP/CCC)	**Scientific and Technical Innovation** Students will explore the natural world and its laws; the interaction between people and the natural world; how humans use their understanding of scientific principles; the impact of scientific and technological advances on communities and environments; the impact of environments on human activity; how humans adapt environments to their needs.

Statement of inquiry

Scientific and technical innovations allow us to visualize, model, and explain changes to the Earth's surface.
What causes major geologic events, such as earthquakes and volcanoes, and how do they impact Earth's surface? Why do we see major geologic events in the Ring of Fire?

Inquiry questions

Factual—

What do fossils show scientists?
What landforms are on the ocean floor?
Why does the Earth have layers?

Conceptual—

How do the layers of earth compare?
How do plate movements change the shape of earth's surface?

Debatable-

Would you prefer to live near a volcano or a fault line?

MYP Objectives	Assessment Tasks

*What specific MYP **objectives** will be addressed during this unit?*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*
Sciences **Design**	MYP A: Claim Evidence Reasoning on future movement of plate tectonics and/or Claim Evidence Reason of a geological event MYP B: Earth's Layers Scaled Model Design: Volcano Shelter	**Formative Assessment(s):** Common Formative Assessments: -Earth's Layers - Pangaea, Wegener, Theory of Continental Drift, Theory of Plate Tectonics - Plate Boundaries - Ocean Floor - Volcanoes, Earthquakes **Summative Assessment(s):** Unit Exam
Approaches to learning (ATL)		
Category: Thinking **Cluster:** Critical-Thinking **Skill Indicator:** Use models and simulations to explore complex systems and issues. Gather and organize relevant information to formulate an argument.		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
Earth's layers	Create foldable on earth's layers with facts about density. Introduce science vocabulary of asthenosphere and lithosphere.	Scaffold notes for special education and ESOL
Pangaea, Wegener, Theory of Continental Drift, Theory of Plate Tectonics	Students will learn about the different 4 boundaries, convergent, divergent, transform, subduction by creating a foldable about how the plates move and what it creates.	Scaffold notes for special education and ESOL
Plate Boundaries, Ocean Floor	**Students will use cards to organize** the name, diagram, arrows, explanation and examples to place the plate boundaries in correct places on a chart	Scaffold notes for special education and ESOL
Content Resources		
Discovery Education Science Techbook - Unit 7 Our Solar System and Beyond		