Marietta City Schools

2024-2025 District Unit Planner

Science Grade 6

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

GSE Standards

Standards

S6E3. Obtain, evaluate, and communicate information to recognize the significant role of water in Earth's 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, and 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, and volcanoes) 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
- Geological 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 can support life.

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

Possible Preconceptions/Misconceptions: (REFLECTION – PRIOR TO TEACHING THE UNIT)
You can travel to the center of the 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
Cause and Effect	**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, and 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?

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 the 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*	***Relationship** between summative assessment task(s) and statement of inquiry:*	*List of common formative and summative assessments.*

unit?		
Sciences **Design**	MYP A: Unit 2 Exam MYP B- Plate Tectonics Edible Lab	**Mid-Unit Assessment(s):** -Earth's Layers and Plate Tectonics **Summative Assessment(s):** MYP B- Plate Tectonics Edible Lab Unit Exam
Approaches to Learning (ATL)		
Category: Research and Thinking **Cluster:** Critical-Thinking **Skill Indicator:** Collect, record, and verify data; Collect and analyze data to identify solutions and make informed decisions; Make guesses, ask" what if" questions, and generate testable hypotheses.		

Learning Experiences Add additional rows below as needed.		
Objective or Content	**Learning Experiences**	**Personalized Learning and Differentiation**
a. Ask questions to compare and contrast the Earth's crust, mantle, and inner and outer core, including temperature, density, thickness, and composition.	Layers of the Earth Hands-On Activity: Students will compare and contrast the Earth's layers, including facts about density. They will create and ask each other questions to confirm their understanding of the content.	Scaffold notes for special education and ESOL, remediation activities in Discovery Ed Introduce the science vocabulary of asthenosphere and lithosphere. Extensions- Activities in Discovery Ed
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.	Pangaea Hands-On Activity: After analyzing data to create Pangaea, students will verbalize and/or write a CER about how fossils and changes in the earth's surface are evidence of Continental Drift.	Scaffold notes for special education and ESOL, remediation activities in Discovery Ed Extensions- Activities in Discovery Ed
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.)	Plate Boundaries Hands-On Activity: Students will compare and contrast plate boundaries, including names, diagrams, arrows, explanations, and examples of geological features (continental and oceanic) and natural disasters caused by plate movement.	Scaffold notes for special education and ESOL, remediation activities in Discovery Ed Extensions- Activities in Discovery Ed
Content Resources		
Discovery Education Science Techbook - Unit 1 Earth's History and Unit 2 Earth's Structure; BrainPop, Edpuzzle		