



Marietta City Schools

District Unit Planner

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

Science Grade 6

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|------------|---|----------|---|---------------------|----------|
| Unit title | <i>Earth's Changing Landscapes Part 1 Plate Tectonics</i> | 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 | Lithospheric | Subsurface | Magma | Richter scale |
| Crust | Plates or | Topography | Lava | Seismic waves |
| Mantle | Tectonic plates | Continental shelf | Ring of Fire | Focus |
| Convection | -Oceanic plates | Continental slope | Hot Spot | Epicenter |
| Current | -Continental plates | Continental Trench | Geotherma | Frequency |
| Inner Core | plates | slope | I Energy | Landslide |
| Outer Core | Divergent boundary | Abyssal plain | Igneous Rock | Mass wasting |
| Asthenosphere | -Seafloor spreading | Guyot | | Gravity |
| Lithosphere | Convergent boundary | Seamount | | Tsunami |
| | -Subduction | Mid-ocean Ridge | | |
| | Transform boundary | Rift Valley | | |
| | | Volcano | | |
| | History of Tectonic Plates: | | | |
| | Pangaea | | | |
| | Continental Drift | | | |

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.

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 | | |
| <p>Factual—</p> <p>What do fossils show scientists? What landforms are on the ocean floor? Why does the Earth have layers?</p> <p>Conceptual—</p> <p>How do the layers of earth compare? How do plate movements change the shape of earth's surface?</p> <p>Debatable-</p> <p>Would you prefer to live near a volcano or a fault line?</p> | | |
| MYP Objectives | Assessment Tasks | |
| <i>What specific MYP objectives will be addressed during this</i> | <i>Relationship between summative assessment task(s) and statement of inquiry:</i> | <i>List of common formative and summative assessments.</i> |

| <i>unit?</i> | | |
|--|---|---|
| Sciences Design | MYP A: Unit 2 Exam MYP B- Plate Tectonics Edible Lab or MYP C: Earth's Layers Scaled Model | <u>Formative Assessment(s):</u> Common Formative Assessments: - Earth's Layers - Plate Tectonics <u>Summative Assessment(s):</u> 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. | | |

| <u>Learning Experiences</u> Add additional rows below as needed. | | |
|--|--|--|
| Objective or Content | Learning Experiences | Personalized Learning and Differentiation |
| Earth's layers | Layers of the Earth Hands-On Activity: Compare and contrast earth's layers including facts about density. Introduce science vocabulary of asthenosphere and lithosphere. | Scaffold notes for special education and ESOL, remediation activities in Discovery Ed Extensions- Activities in Discovery Ed |
| Pangaea, Wegener, Theory of Continental Drift, Theory of Plate Tectonics | Pangaea Hands-On Activity: After analyzing data to create pangaea students will verbalize and/or write a CER about Continental Drift | Scaffold notes for special education and ESOL, remediation activities in Discovery Ed Extensions- Activities in Discovery Ed |
| Plate Boundaries, Ocean Floor | Compare and contrast plate boundaries- sort the name, diagram, arrows, explanation 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 | | |