

Unit: Plate Tectonics
Essential Question & Learning Goals

Essential Question:

- How do the Earth's tectonic plates move, and what can result from their movement?

Learning Goals:

By the end of this unit you should be able to:

- Understand how energy is transferred through Earth's layers.
- Describe the layers of the Earth.
- Relate landforms to seismic and volcanic activity.
- Relate locations of seismic & volcanic activity to tectonic plates.
- Explain the Theory of Plate Tectonics.

Vocabulary:

Crust
Mantle
Inner Core
Outer Core
Tectonic Plate
Divergent Boundary
Convergent Boundary
Transform Fault Boundary
Lithosphere
Asthenosphere
Ocean trench
Fault
Mid-ocean ridge
Seafloor spreading
Earthquake
Seismic waves
P wave
Subduction
S wave
Lava
Volcano
Magma
Surface wave
Rift valley

Minnesota Academic Standards in Science:

8.1.3.4.1: Use maps, satellite images and other data sets to describe patterns and make predictions about local and global systems in Earth science contexts.

8.2.3.1.1: Explain how seismic waves transfer energy through the layers of the Earth and across its surface.

8.3.1.1.1: Recognize that the Earth is composed of layers, and describe the properties of the layers, including the lithosphere, mantle and core.

8.3.1.1.2: Correlate the distribution of ocean trenches, mid-ocean ridges and mountain ranges to volcanic and seismic activity.

8.3.1.1.3: Recognize that major geological events, such as earthquakes, volcanic eruptions and mountain building, result from the slow movement of tectonic plates.

Learning Target Checklist:

	Learning Target	Mastered on QUIZ	Mastered on TEST
<u>1</u>	I can name and describe the layers of the Earth.		
2	I can explain how different seismic waves move through the Earth's layers.		
<u>3</u>	I can explain the geologic events, landforms, and the relative motions that occur at plate boundaries.		
4	I can explain whether a geologic process at a plate boundary is constructive or destructive.		
5	I can explain why scientific research is limited by constraints such as money, politics, and ethics.	n/a	n/a
6	I can identify and analyze geologic features on a map or satellite image.	n/a	n/a