

Lesson Topic: Unit 3 Part 1 Plate Tectonics

Grade level: 6th

Length of lesson: 10 days, 50-60min class periods

Content Standards

MS-ESS2-1 (DCI B and C): Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process. Plate Tectonics and Large-Scale System Interactions

MS-ESS1.C Tectonic Processes ?

Understanding (s)/goals

Structure of the Earth - layers

Essential Question(s):

- How does the movement of tectonic plates impact the surface of Earth?

Student objectives (outcomes):

Students will be able to: Model

Assessment Evidence

Performance Task(s):

Show how the movement of tectonic plates impact (change) the surface of Earth over time.

Demonstrate this concept using a type of model or simulation.

Other Evidence:

Learning Plan

Learning Activities:

- Teach Vocabulary Concepts: geosphere, continental shelf, plate tectonics, mid ocean ridge, trench, convergent plate boundary, divergent plate boundary, transform plate boundary, asthenosphere, lithosphere, oceanic crust, continental crust, convection current
- Earth's Layers Lab with clay (Harcourt pg. D4)
- phet.colorado.edu/en/simulation/legacy/plate-tectonics (plate boundaries)
- Plate Tectonic Puzzle - Wegener (father of continental drift that led to plate tectonics)
volcanoes.usgs.gov/about/edu/dynamicplanet/wegener
- Edible tectonics

Resources

<http://www.bozemanscience.com/ngs-ess2a-earth-materials-systems>

Students who demonstrate understanding can:

MS-ESS1-1. Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. [Clarification Statement: Examples of models can be physical, graphical, or conceptual.]

The performance expectations above were developed using [the following elements from the NRC document *A Framework for K-12 Science Education*](#):

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Developing and Using Models Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.</p> <ul style="list-style-type: none"> Develop and use a model to describe phenomena. (MS-ESS1-1) 	<p>ESS1.A: The Universe and Its Stars</p> <ul style="list-style-type: none"> Patterns of the apparent motion of the sun, the moon, and stars in the sky can be observed, described, predicted, and explained with models. (MS-ESS1-1) This model of the solar system can explain eclipses of the sun and the moon. Earth’s spin axis is fixed in direction over the short-term but tilted relative to its orbit around the sun. The seasons are a result of that tilt and are caused by the differential intensity of sunlight on different areas of Earth across the year. (MS-ESS1-1) 	<p>Patterns</p> <ul style="list-style-type: none"> Patterns can be used to identify cause-and-effect relationships. (MS-ESS1-1) <p>Systems and System Models</p> <ul style="list-style-type: none"> Models can be used to represent systems and their interactions. (MS-ESS1-2) <p>-----</p> <p>Connections to Nature of Science</p> <p>Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation. (MS-ESS1-1)</p>

Connections to this grade band:

MS.PS1.A (MS-ESS2-1)

Common Core State Standards Connections:

ELA/Literacy -

SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. (MS-ESS2-1)