We have created a guide to get you started. This is designed to be a starting point that can be tweaked to your individual style/needs. Included in the general plan are the standards/access points, vocabulary, key questions and links to a variety of resources including tutorials, informational text, videos, experiments and sample activities. All of the links in this file are live and clicking on the standard will take you directly to C-Palms.

PowerPoints for Forces that Shape the Earth:

Visual Vocabulary [Click here](http://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3._forces_that_shape_the_earth_visual_vocab.pptx)

Key Questions [Click here](http://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/3._forces_that_shape_the_earth.essential_questions.pptx)

*Drafted by Sarasota County Teachers Dawn Byrne, Jeremy Johnson and Elizabeth Lewis, piloted 2016-17 in 5 classes and general education content review by Betsy Summerlee.*

|  | Forces that Shape the Earth |
| --- | --- |
| **Unit/Topic Standard** | [SC.912.E.6.3:](http://www.cpalms.org/Public/PreviewStandard/Preview/1889) Analyze the scientific theory of plate tectonics and identify related major Key Concepts and features as a result of moving plates.  [SC.912.E.6.2:](http://www.cpalms.org/Public/PreviewStandard/Preview/1864) Connect surface features to surface Key Concepts that are responsible for their formation.  [SC.912.E.6.4:](http://www.cpalms.org/Public/PreviewStandard/Preview/1890) Analyze how specific geologic Key Concepts and features are expressed in Florida and elsewhere. |
| **Access Points** | [SC.912.E.6.In.3:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8228) Relate a cause and effect of movements in Earth’s crust (plate tectonics), such as fault lines in the plates causing earthquakes.  [SC.912.E.6.Su.3:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8229) Recognize that Earth’s crust is broken into parts (plates) that move and cause mountains and volcanoes.  [SC.912.E.6.Pa.2:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8230) Recognize that the surface of Earth can change.  [SC.912.E.6.In.2:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8226) Describe examples of surface features, such as glaciers, valleys, canyons, and dried riverbeds, which are caused by wind and erosion (surface Key Concepts).  [SC.912.E.6.Su.2:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8227) Identify types of surface features, such as hills and valleys.  [SC.912.E.6.Pa.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8225) Identify a surface feature of Earth, such as a hill.  [SC.912.E.6.In.4:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8231) Identify natural geological Key Concepts that change the land and water in Florida, including beach erosion and sinkholes.  [SC.912.E.6.Su.4:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8232) Recognize examples of natural changes to Florida’s land and water, such as beach erosion.  [SC.912.E.6.Pa.2:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8230) Recognize that the surface of Earth can change. |
| **Vocabulary** | plate tectonics, boundaries (convergent, divergent, transform), subduction, fault line, tectonics, continental drift, seafloor spreading, volcanoes, earthquake, glaciation, surface features, mountains, valleys, mechanical weathering, chemical weathering, erosion, deposition, rock cycle, tsunamis, glaciers, beach, waves, rivers, deltas |
| **Key Concepts** | * What are Plate Tectonics and Continental Drift? * What are Plate Boundaries? * How Do Plate Boundaries Affect Volcanoes? * What Happens During a Volcanic Eruption? * How are Mountains Formed? * What Causes Earthquakes? * What is Weathering? How Does it Shape the Earth’s Surface? * What are Erosion and Deposition? How do They Shape the Earth’s Surface? * How do Rivers Shape the Earth’s Surface? * How are Glaciers Formed? * How Does Glaciation Shape the Earth? * How Do Wind and Gravity Shape the Earth? * How Do Waves Shape the Earth? * What is the Rock Cycle? |
| **References** | * Website to observe an animation of the breakup of Pangaea: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0806/es0806page01.cfm?chapter_no=08) * Animation of plate tectonics: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0804/es0804page01.cfm?chapter_no=08) * Observe an animation of volcanism at a subduction zone: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0902/es0902page01.cfm?chapter_no=09) * Observe an animation of volcanism along a rift zone: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0903/es0903page01.cfm?chapter_no=09) * Observe an animation of volcanic islands forming over a hot spot.: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es0904/es0904page01.cfm?chapter_no=09) * Animated guide: Volcanoes: [Click Here](http://news.bbc.co.uk/2/hi/sci/tech/7533964.stm) * Observe an animation of the Himalayas forming: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1105/es1105page01.cfm?chapter_no=11) * Animated guide: Earthquakes: [Click Here](http://news.bbc.co.uk/2/hi/science/nature/7533950.stm) * Animation and text on weathering: [Click Here](https://ees.as.uky.edu/sites/default/files/elearning/module07swf.swf) * Observe how sediments are deposited: [Click Here](https://www.classzone.com/books/earth_science/terc/content/visualizations/es0604/es0604page01.cfm?chapter_no=visualization) * The Grand Canyon: How It Formed video: [Click Here](http://www.pbslearningmedia.org/resource/ess05.sci.ess.earthsys.canyon/the-grand-canyon-how-it-formed/) * How is a delta formed video 4 minutes: [Click Here](https://www.youtube.com/watch?v=tGHAO15hROs) * Observe river erosion creating waterfalls and chasms: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1305/es1305page01.cfm?chapter_no=13) * Glacial advance and retreat animation: [Click Here](http://www.wwnorton.com/college/geo/egeo2/content/animations/18_1.htm) * Overview layers of earth: [Click Here](http://volcano.oregonstate.edu/earths-layers-lesson-1) * Observe an animation showing formation of arch: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1601/es1601page01.cfm?chapter_no=16) * Article on core: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/62609) * Interactive site on plate tectonics: [Click Here](http://www.cpalms.org/Public/PreviewStandard/Preview/1889) * Website gives a short overview on the plate boundaries: [Click Here](http://www.cotf.edu/ete/modules/msese/earthsysflr/plates1.html) * Lesson on plate boundaries with candy bars, teacher video walks you through it: [Click Here](http://www.cpalms.org/Public/PreviewResourcePerspectivesVideo/Preview/130719) * Video from the lesson plan: [Click Here](https://www.youtube.com/watch?v=1-HwPR_4mP4) * Lesson plan about tectonic plates: [Click Here](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/152687) * Seismic Activity - Enrichment/Extension, virtual activity to find the faults: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/28460) * Observe how glaciers erode bedrock surfaces: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1502/es1502page01.cfm?chapter_no=15) * Video from Bill Nye on seafloor spreading: [Click Here](https://www.youtube.com/watch?v=GyMLlLxbfa4) * Examine an example of wave erosion: [Click Here](http://www.classzone.com/books/earth_science/terc/content/visualizations/es1606/es1606page01.cfm?chapter_no=16) * Interactive Rock Cycle Animation: [Click Here](http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page02.cfm) * Land formations lab: [Click Here](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/154305) |