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 Earth’s Composition:

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

Key Questions [Click here](http://accesstoflsresources.weebly.com/uploads/2/3/7/3/23739164/2._earths_composition.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.*

|  | Earth’s Composition |
| --- | --- |
| **Unit/Topic Standard** | [SC.912.E.7.3:](http://www.cpalms.org/Public/PreviewStandard/Preview/1895) Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.[SC.912.E.7.1:](http://www.cpalms.org/Public/PreviewStandard/Preview/1893) Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.[SC.912.E.6.1:](http://www.cpalms.org/Public/PreviewStandard/Preview/1863) Describe and differentiate the layers of Earth and the interactions among them. |
| **Access Points** | [SC.912.E.7.In.3:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8239) Describe the interactions among the atmosphere, hydrosphere, and biosphere, including how air, water, and land support living things and how air temperature affects water and land temperatures. [SC.912.E.7.Su.3:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8240) Recognize components of the atmosphere, the hydrosphere, and the biosphere. [SC.912.E.7.Pa.3:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8241) Recognize that humans, plants, and animals live on the Earth (biosphere). [SC.912.E.7.In.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8233) Identify cycles that occur on Earth, such as the water and carbon cycles, and the role energy plays in them.[SC.912.E.7.Su.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8234) Recognize the phases of the water cycle that occur on Earth and the role energy plays in the water cycle. [SC.912.E.7.Pa.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8235) Recognize that clouds release rain (part of the water cycle). [SC.912.E.6.In.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8223) Describe the three layers of Earth (core, mantle, and crust). [SC.912.E.6.Su.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8224) Recognize the three layers of Earth (core, mantle, and crust).[SC.912.E.6.Pa.1:](http://www.cpalms.org/Public/PreviewAccessPoint/Preview/8225) Identify a surface feature of Earth, such as a hill.  |
| **Vocabulary** | Atmosphere, hydrosphere, biosphere, geosphere, water, carbon, oxygen, energy, nitrogen cycle, carbon cycle, water cycle, organisms, plants, Earth, crust , mantle, outer core, inner core |
| **Key Concepts** | * What are the Earth systems and how do they interact with each other?
* What are the different layers of the Earth?
* How does energy transfer affect the interactions of the Earth’s layers?
* What is the water cycle/hydrologic cycle?
* What is the Carbon Cycle?
* What is the Nitrogen Cycle?
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| **References** | * Overview of the layers of earth: [Click Here](http://volcano.oregonstate.edu/earths-layers-lesson-1)
* Article on core: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/62609)
* How are Earth’s spheres interacting, a slide presentation: [Click Here](http://www.classzone.com/books/earth_science/terc/content/investigations/es0103/es0103page01.cfm)
* Interactive site to learn more about the earths layers: [Click Here](http://www.divediscover.whoi.edu/anatomy/index.html)
* How do we know about layers deep in the Earth? Slide show with animations: [Click Here](http://www.classzone.com/books/earth_science/terc/content/investigations/es0402/es0402page02.cfm)
* Interactive site on the Water Cycle: [Click Here](https://pmm.nasa.gov/education/videos/tour-water-cycle)
* Interactive site with links on parts of the water cycle, can choose beginner, intermediate or advanced settings: [Click Here](http://water.usgs.gov/edu/watercycle-kids-adv.html)
* Animation of the Carbon Cycle, interactive: [Click Here](http://www.kscience.co.uk/animations/carbon_cycle.htm)
* Interactive animation of the nitrogen cycle: [Click Here](https://www.classzone.com/books/ml_science_share/vis_sim/em05_pg20_nitrogen/em05_pg20_nitrogen.swf)
* The Habitable Planet - The Atmosphere. Lesson Plan with a comprehensive atmosphere unit, including notes, online activities, 29 minute video, and an interactive carbon lab: [Click Here](http://www.cpalms.org/Public/PreviewResourceUrl/Preview/50331)
* How Does Melting Ice Affect Sea Level? Experiment: [Click Here](http://www.cpalms.org/Public/PreviewResourceExternal/Preview/32962)
* Videos on:
	+ Aquifers: Kent Koptiuch talks about aquifers and the importance of water quality.
	+ Watershed: Kent Koptiuch talks about watersheds and water quality.
	+ [Click Here](http://www.cpalms.org/Public/PreviewStandard/Preview/1895)
* Banana River Fish Kill Report, describe various interactions between the atmosphere, geosphere, and hydrosphere and their effect on the biosphere of the Banana River: [Click Here](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/154993)
* The Struggle of Mountains: Erosion vs. Plate Tectonics, informational text: [Click Here](http://www.cpalms.org/Public/PreviewStandard/Preview/1895)
* Climate Can Grind Down Mountains Faster Than They Can Rebuild. Informational text: [Click Here](http://www.cpalms.org/Public/PreviewStandard/Preview/1895)
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