# Pacing & Curriculum Guide

## Earth/Space Science 2001310

Contents:

- Earth/Space Science Course Description
- Reading Standards for Literacy in Science and Technical Subjects
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## GENERAL NOTES

English Language Development ELD Standards Special Notes Section:
Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELLs) to communicate information, ideas and concepts for academic success in the content area of Science. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. To access an ELL supporting document which delineates performance definitions and descriptors, please click on the following link: http://www.cpalms.org/uploads/docs/standards/eld/SC.pdf

For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Additional Instructional Resources:
A.V.E. for Success Collection: http://www.fasa.net/iTunesU/index.cfm

# Common Core State Standards for Mathematics Mathematical Practices, Grades K-12

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|---|---|
| MP 1: Make sense of problems and persevere in solving them | Mathematically proficient students will<br>x start by explaining to themselves the meaning of a problem and looking for entry points to its solution.<br>x analyze givens, constraints, relationships, and goals.<br>x make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt.<br>x consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution.<br>x monitor and evaluate their progress and change course if necessary.<br>x explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends.<br>x check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?”<br>x understand the approaches of others to solving complex problems and identify correspondences between different approaches. |

# CCPS Earth/Space Science Curriculum Map (Course Number: 200131

| | Current Textbook Alignment: Pearson Earth Science | Standards |
|---|---|---|
| Quarter 1 | Meteorology and Weather<br><br>Chapter 1.3: Representing Earth's Surface<br>Chapter 17.1: Atmospheric Characteristics<br>Chapter 17.2: Heating the Atmosphere<br>Chapter 17.3: Temperature Controls<br>Chapter 18.1: Water in the Atmosphere<br>Chapter 19.1: Understanding Air Pressure<br>Chapter 20.1: Air Masses<br>Chapter 20.2: Fronts<br>Chapter 20.3: Severe Storms Affect Climate | Meteorology and Weather<br><br>SC.912.N.3.5<br>SC.912.E.7.3<br>SC.912.E.7.4<br>SC.912.E.7.5<br>SC.912.E.7.6<br>SC.912.E.7.7<br>SC.912.E.7.8<br>SC.912.P.10.4<br>SC.912.P.10.16 |
| Quarter 2 | The Rock Cycle<br><br>Chapter 2.1: Matter<br>Chapter 2.2: Minerals<br>Chapter 2.3: Properties of Minerals<br>Chapter 3.1: The Rock Cycle<br>Chapter 3.2: Igneous Rocks<br>Chapter 3.3Sedimentary Rocks<br>Chapter 3.4: Metamorphic Rocks | The Rock Cycle<br><br>SC.912.E.7.3 |
| Quarter 3 | Plate Tectonics and Forces That Shape the Earth<br><br>Chapter 8.4: Earth's Layered Structures<br>Chapter 9.1: Continental Drift<br>Chapter 9.2: Sea-Floor Spreading<br>Chapter 9.3: Thed44.7 (:)-0.7 ( T)-Ce -0.002 4.7 (:)-0.re ft.28 237pnt7 (r 9t2.9 (S) (.)-3.3)2.7 (s)]:s 322.3 (h)3 (a)-3 (3.4 (er)-2.7 ( 9) | |

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Explicit instruction on the Nature of Science is to be embedded throughout this course.

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| Meteorology and Weather | Recommended Pacing: Quarter One |
|---|---|

## Representing Earth's Surface

| Driving Questions | Academic Vocabulary | Resources |
|---|---|---|
| What lines on a graph are used to indicate location?<br>What is the difference in Latitude and Longitude?<br>What are coordinate points on a global and local map, and how are they used? | Latitude<br>Longitude<br>Coordinate points | |

## Standards: Atmospheric Characteristics

SC.912.E.7.1 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.
SC.912.E.7.2 Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oc

| Driving Questions | Academic Vocabulary | | Resources |
|---|---|---|---|
| Compare and contrast weather and climate.<br>Explain why seasonal changes occur. | Ozone<br>Troposphere<br>Stratosphere<br>Mesosphere<br>Thermosphere | Exosphere<br>Summer solstice<br>Winter solstice<br>Fall equinox<br>Spring equinox | |

## Standards: Heating the Atmosphere

SC.912.E.7.1 Differentiate and describe the various interactions among Earth systems, including: atmosphere5.1 (n3e)9 4 240.6 Tm (t)2.6 3(phe)2.1 (r)4.6 (e)9 (5

| Standards: Temperature Controls |
| --- |
| SC.912.E.7.3 |

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| Standards: Understanding Air Pressure | | |
|---|---|---|
| SC.912.E.7.3 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. | | |
| **DrivingQuestions** | **Academic Vocabulary** | **Resources** |
| Describe how the Coriolis Effect influences freely moving objects.<br>Describe how air pressure is exerted on objects. | | |

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## Standards: Severe Storms Affect Climate

SC.912.E.7.8 Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertain

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# The Rock Cycle

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| Standards: The Rock Cycle | |
|---|---|
| SC.912.E.7.1 Analyze the movement of matter and energy through the different biogeochemical cycles, including water and carbon.<br>SC.912.E.7.3 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. | Key Benchmark Clarifications for Earth/Space Science<br>Students will analyze the movement of matter through different biogeochemical cycles.<br>Key Content Limits for Earth/Space Science<br>Items assessing biogeochemical cycles are limited to the water cycle and the carbon cycle.<br>Items referring to the biogeochemical cycles may address but will not assess photosynthesis and cellular respiration in isolation.<br>Scenarios will express energy in joules (J). |
| Driving Questions | |

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| Igneous Rocks | |
|---|---|
| Driving Questions | Academic Vocabulary |

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| Plate Tectonics and Forces That Shape the Ear | Recommended Pacing: Quarter Three |
|---|---|

## Standards: Earth's Layered Structure

SC.912.E.6.1 Describe and differentiate the layers of Earth and the interactions among them.
SC.912.E.6.4 Analyze how specific geologic processes and features are expressed in Florida and elsewhere.
SC.912.E.7.3 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.

| Driving Questions | Academic Vocabulary | Resources |
|---|---|---|
| What are Earth's layers based on composition?<br>What are Earth's layers based on physical properties?<br>How did scientists determine Earth's structure and composition? | Crust<br>Mantle<br>Lithosphere<br>Asthenosphere<br>Outer / Inner Core | |

## Standards: Continental Drift

SC.912.N.1.5 Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome.
SC.912.N.1.6 Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.

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Students will assess the reliability of sources of information according to scientific standards.
Students will identify examples of scientific inferences made from observatio(e)3 ( ev. (e)-T/TT0 1 Tf 9.4)3 (

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| Standards: Sea Floor Spreading | |
|---|---|
| SC.912.N.1.6 Describe how scientific inferences are drawn from scientific observations and provide examples from the content being studied.<br>SC.912.E.6.1 Describe and differentiate the layers of Earth and the interactions among them.<br>SC.912.E.6.2 Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates.<br>SC.912.E.6.4 Analyze how specific geologic processes and features are expressed in Florida and elsewhere.<br>SC.912.E.6.5 Describe the geologic development of the present day oceans and identify commonly found features.<br>SC.912.E.7.3 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere. | (see "Continental Drift standards for more information) |

| | Academic Vocabulary |
|---|---|

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| Driving Questions | Academic Vocabulary | Resources |
|---|---|---|
| Explain the theory of plate tectonics<br>Describe lithospheric plates.<br>Identify the three types of plate boundaries. | Plate<br>Plate Tectonic<br>Divergent boundary<br>Convergent boundary<br>Transform Fault<br>Continental volcanic arc<br>Volcanic island arc. | Video on plate tectonics by Bozeman Science:<br>https://www.youtube.com/watch?v=JmCvjQGSNM&t=185s |
| Standards: Mechanisms of Plate Motions<br>SC.912.E.6.1 | | |

| Standards: Mountain Building and Tectonics |
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| SC.912.E.6.1 Describe and |

| Historical Geology and Evolution | Recommended Pacing: Quarter Four |
|---|---|
| Standards: Discovering Earth's History | |
| SC.912.N.1.5 Describe and provide examples of how similar investigations conducted in many parts of the world result in the same outcome.<br>SC.912.N.2.4 | |

- Items will not assess specific knowledge of the formation of microspheres or th evolution of RNA and DNA.
- Items will not address or assess the endosymbiotic theory.
- Items referring to adaptive radiation, convergent evolution, coevolution, or pu equilibrium should focus on the concepts rather than on the definition of the
- Items referring to the development of language or the manufacturing of tools this development to changes in the skull or brain size.
- Items will not assess types of genetic mutation or how these mutations occur.
- Items referring to comparative anatomy and comparative embryology will assess anatomical similarities such as homologous structures and vestigial organ not require specific knowledge of embryologic stages or structures.
- Items will not require knowledge of changes to specific species or geographi of those species.

| Precambrian Time (Eon) | | |
|---|---|---|
| **Driving Questions** | **Academic Vocabulary** | **Resources** |
| Describe the major geologic developments of Precambrian time.<br>Describe the major developments in the evolution of living things during Precambrian time. | Shields<br>Photosynthesis<br>Stromatolties<br>Prokaryotes<br>Eukaryotes | |
| **Paleozoic Era** | | |
| **Driving Questions** | **Academic Vocabulary** | **Resources** |
| List the kinds of environmental changes that have affected the evolution of life over geologic time.<br>Describe the major developments in Earth's geology and life forms during the Paleozoic era. | Mass extinction<br>Gondwana<br>Laurasia<br>Amphibian<br>Reptile | |
| **Mesozoic Era** | | |
| **Driving Questions** | **Academic Vocabulary** | **Resources** |
| Describe the major developments in Earth's geolog and life forms during the Mesozoic era.<br>State the cause of the mass extinction at the end of the Mesozoic era. | Mammal<br>Gymnosperm | |
| **Cenozoic Era** | | |
| **Driving Questions** | **Academic Vocabulary** | **Resources** |
| Explain why mammals became widespread and successful in the Cenozoic era.<br>Describe the major developments in Earth's geology and life forms during the Cenozoic era. | Milinkovic Cycle | |