

2 nd Grade Science							
Semester 1				Semester 2			
Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Instructional Segment #1: Landscape Shapes		Instructional Segment #2: Landscape Materials		Instructional Segment #3: Landscape Changes		Instructional Segment #4: Biodiversity in Landscapes	
2-ESS2-3 ₁ 2-ESS2-2 ₁		2-PS1-1 ₁ 2-PS1-2 ₂ 2-PS1-3 ₅ 2-PS1-4 ₂ K-2-ETS1-3		2-ESS1-1 ₇ 2-ESS2-1 ₇ K-2-ETS1-2 ₆		2-LS2-1 ₂ 2-LS4-1 2-LS2-2 ₆	
* = standard is taught more than once within this course (Note: none in this grade level)							
<u>EP&Cs Connections:</u> n/a	<u>ELD Connections:</u> ELD.PI.2.6, ELD.PI.2.10	<u>EP&Cs Connections:</u> Principles 1, 2, 3, 4, 5	<u>ELD Connections:</u> ELD.PI.2.6, 10, 11, ELD.PII.2.5	<u>EP&Cs Connections:</u> n/a	<u>ELD Connections:</u> ELD.PI.2.6, 11	<u>EP&Cs Connections:</u> Principle 2	<u>ELD Connections:</u> ELD.PI.2.2, 6, ELD.PII.2.6
<u>CA History/SS:</u> K.4.4, 1.2.3, 2.2.1							
CCSS ELA Connections: W.2.2 , W.2.7-8 , W.2.10 , SL.2.2 , SL.2.4e	CCSS Math Connections: 2.MD.10 , 2.G.1-2	CCSS ELA Connections: RI.2.3 , 8 ; W.2.1 , 8 ; L.2.6	CSS Math Connections: n/a	CCSS ELA Connections: RI.2.1 , 3	CSS Math Connections: n/a	CCSS ELA Connections: W.2.3 , 4 , 7 , 8 , 10	CSS Math Connections: n/a

Science & Engineering Practices (SEPs)





- 1.) [Asking questions and defining problems](#)
- 2.) [Developing and using models](#)
- 3.) [Planning and carrying out investigations](#)
- 4.) [Analyzing and interpreting data](#)
- 5.) [Using mathematics and computational thinking](#)
- 6.) [Constructing explanations and designing solutions](#)
- 7.) [Engaging in argument from evidence](#)
- 8.) [Obtaining, evaluating and communicating information](#)

Crosscutting Concepts (CCCs)

- 1.) [Patterns](#)
- 2.) [Cause and Effect](#)
- 3.) [Scale, Proportion, Quantity](#)
- 4.) [Systems and System Models](#)
- 5.) [Energy and Matter](#)
- 6.) [Structure and Function](#)
- 7.) [Stability and Change](#)

Guiding Questions:			
<i>Instructional Segment #1:</i> Landscape Shapes	<i>Instructional Segment #2:</i> Landscape Materials	<i>Instructional Segment #3:</i> Landscape Changes	<i>Instructional Segment #4:</i> Biodiversity in Landscapes
<ul style="list-style-type: none"> • How can we describe the shape of land and water on Earth? 	<ul style="list-style-type: none"> • How can we describe different materials? • How are materials similar and different from one another? • What sort of changes can happen to materials? • How do the properties of the materials relate to their use? 	<ul style="list-style-type: none"> • What evidence do natural processes leave behind as they shape the Earth? • How do the material properties of rocks affect what happens to them in landscapes? 	<ul style="list-style-type: none"> • How can we determine what plants need to grow? • How do plants depend on animals? • How many types of living things live in a place? How can we tell?

Table 3.5. Overview of Instructional Segments for Grade Two

	<p>1 Landscape Shapes</p>	<p>Students represent landscapes with 3-D physical models and 2-D maps. They recognize patterns in the shapes and locations of landforms and water bodies. They ask questions about how these features formed.</p>
	<p>2 Landscape Materials</p>	<p>Students learn to describe differences in material properties. They explain how material properties can change, especially focusing on changes caused by changing temperature. Some of these changes can be reversed while others cannot. Students relate the properties of materials to how they can be used. Properties important to landscapes and landforms include the strength of materials and their ability to absorb water.</p>
	<p>3 Landscape Changes</p>	<p>Some changes on Earth occur quickly while others occur slowly. Students investigate several processes that sculpt landforms and then create engineering solutions that slow down those changes.</p>
	<p>4 Biodiversity in Landscapes</p>	<p>Different landscapes support different types and quantities of life. Students investigate the needs of plants and engineer models that mimic their pollination and seed dispersal structures. They then ask questions about how plant needs are met in the physical conditions of different habitats.</p>

Source: M. d'Alessio; Giel 2007; Woelber 2012; Abbe 2005.

Retrieved from: [CA Science Framework, Chapter 3, pg. 75](#)

2nd Grade Science- Quarter 1 Overview			
Quarter Topic Focus: Landscape Shapes			
<u>Science & Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	Performance Expectation (PE)
How students will demonstrate their understanding...	What students will understand...	How students will connect their understanding across units and courses... (Why they should know it)	A complete standard (SEP + DCI + CCC = PE) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Obtain information</u> to	identify where <u>water is found</u> on Earth and that it can be solid or liquid.	(<u>Patterns</u>)	2-ESS2-3
<u>Develop a model</u> to	represent the shapes and <u>kinds of land and bodies of water</u> in an area.	(<u>Patterns</u>)	2-ESS2-2

2nd Grade Science- Quarter 2 Overview			
Quarter Topic Focus: Landscape Materials			
<u>Science & Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	<u>Performance Expectation (PE)</u>
How students will demonstrate their understanding...	What students will understand...	How students will connect their understanding across units and courses... (Why they should know it)	A complete standard (SEP + DCI + CCC = PE) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Plan and conduct an investigation</u> to	describe and classify <u>different kinds of materials</u> by their observable properties.	(<u>Patterns</u>)	2-PS1-1
<u>Analyze data</u>	obtained from testing different materials to determine which materials have the <u>properties that are best suited for an intended purpose</u> .	(<u>Cause and Effect</u>)	2-PS1-2
Make observations to <u>construct an evidence-based account</u> of	how <u>an object made of a small set of pieces can be disassembled and made into a new object</u> .	(<u>Energy and Matter</u>)	2-PS1-3
<u>Construct an argument</u> with evidence that	some changes in matter, caused by mixing, heating, or cooling <u>can be reversed and some cannot</u> .	(<u>Cause and Effect</u>)	2-PS1-4
<u>Analyze data</u> from tests	of two objects designed to <u>solve the same problem</u> to compare the strengths and weaknesses of how each performs.	n/a	K-2-ETS1-3

2 nd Grade Science- Quarter 3 Overview			
Quarter Topic Focus: Landscape Changes			
<u>Science & Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	Performance Expectation (PE)
How students will demonstrate their understanding...	What students will understand...	How students will connect their understanding across units and courses... (Why they should know it)	A complete standard (SEP + DCI + CCC = PE) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Use information from several sources</u> to provide	evidence that Earth events <u>can occur quickly or slowly</u> .	(<u>Stability and Change</u>)	2-ESS1-1
<u>Compare</u>	<u>multiple solution designs</u> to slow or prevent <u>wind or water from changing</u> the shape of the land.	(<u>Stability and Change</u>)	2-ESS2-1
<u>Develop a simple sketch, drawing, or physical model</u>	<u>to illustrate</u> how the shape of an object helps it function to solve a give problem.	(<u>Structure and Function</u>)	K-2-ETS1-2

2 nd Grade Science- Quarter 4 Overview			
Quarter Topic Focus: Biodiversity in Landscapes			
<u>Science & Engineering Practice (SEP)</u>	<u>Disciplinary Core Idea (DCI)</u>	<u>Crosscutting Concept (CCC)</u>	Performance Expectation (PE)
How students will demonstrate their understanding...	What students will understand...	How students will connect their understanding across units and courses... (Why they should know it)	A complete standard (SEP + DCI + CCC = PE) <small>*colors are associated with SEP (see page 1 for key)</small>
<u>Plan and conduct an investigation</u>	to <u>determine if plants need sunlight and water to grow.</u>	(<u>Cause and Effect</u>)	2-LS2-1
<u>Make observations</u>	of plants and animals to compare the <u>diversity of life in different habitats.</u>	n/a	2-LS4-1
<u>Develop a simple model</u> that	<u>mimics the function of an animal</u> in <u>dispersing seeds or pollinating plants.</u>	(<u>Structure and Function</u>)	2-LS2-2