

3 rd Grade Science							
Semester 1				Semester 2			
Quarter 1		Quarter 2		Quarter 3		Quarter 4	
Instructional Segment #1: Playground Forces		Instructional Segment #2: Life Cycles for Survival		Instructional Segment #3: Surviving in Different Environments		Instructional Segment #4: Weather Impacts	
3-PS2-1 ₂ 3-PS2-2 ₁ 3-PS2-3 ₂ 3-PS2-4 3-5-ETS1-1* 3-5-ETS1-2*		3-LS1-1 ₁ 3-LS2-1 ₂ 3-LS3-1 ₁ 3-LS4-2 ₂		3-LS3-2 ₂ 3-LS4-1 ₃ 3-LS4-3 ₂ 3-LS4-4 ₄ 3-5-ETS1-1* 3-5-ETS1-2*		3-ESS2-1 ₁ 3-ESS2-2 ₁ 3-ESS3-1 ₂ 3-5-ETS1-1* 3-5-ETS1-2*	
* = standard is taught more than once within this course							
<u>EP&Cs</u> <u>Connections:</u> n/a	<u>ELD</u> <u>Connections:</u> ELD.PI.3.1, 5, 12	<u>EP&Cs</u> <u>Connections:</u> Principles 1, 2, 3, 4	<u>ELD</u> <u>Connections:</u> ELD.3.PI.9	<u>EP&Cs</u> <u>Connections:</u> Principles 2, 5	<u>ELD</u> <u>Connections:</u> ELD.PI.3.1, 10, 11	<u>EP&Cs</u> <u>Connections:</u> Principles 2, 3, 4, 5	<u>ELD</u> <u>Connections:</u> 3.P1.A.1, 3.P1.A.2, 3.P1.B.5, 3.P1.C.9
CCSS ELA Connections: RI.3.4 ; L.3.4 , 5	CCSS Math Connections: 3.OA.1-7 , MP.5 , 6	CCSS ELA Connections: RI.3.7 ; SL.3.1 , 2 , 3	CSS Math Connections: 3.MD.4	CCSS ELA Connections: W.3.1 , 7 ; RI.3.1 , 3 , 5 , 7 ; SL.3.1	CSS Math Connections: MP.2 , MP.5 ; 3.MD.3	CCSS ELA Connections: W.3.1B , 8 , SL.3.1 , 2 , 3 , 4 , RI.3.1 , 3 , 4 , 5 , 7	CSS Math Connections: MP.5 ; 3.MD.3 , 4

Science & Engineering Practices (SEPs)





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| 1.) Asking questions and defining problems | 5.) Using mathematics and computational thinking |
| 2.) Developing and using models | 6.) Constructing explanations and designing solutions |
| 3.) Planning and carrying out investigations | 7.) Engaging in argument from evidence |
| 4.) Analyzing and interpreting data | 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> Playground Forces	<i>Instructional Segment #2:</i> Life Cycles for Survival	<i>Instructional Segment #3:</i> Surviving in Different Environments	<i>Instructional Segment #4:</i> Weather Impacts
<ul style="list-style-type: none"> • What happens when several different forces push or pull an object at once? • How can an object be pushed or pulled but not move? • What do we need to know to predict the motion of objects? • How can some objects push or pull one another without even touching? 	<ul style="list-style-type: none"> • What is the advantage of having a complicated lifecycle of growth and development? • How do animals' lifecycles help them survive? • How similar are animals and plants to their siblings and their parents? • How does being similar to parents help an animal survive? • Why do some animals live alone while others live in large groups? 	<ul style="list-style-type: none"> • How does the environment affect living organisms? • How do organisms' traits help them survive in different environments? • What happens to organisms when the environment changes? 	<ul style="list-style-type: none"> • What is typical weather in my local region? • How does it compare to other areas of California and the world? • What weather patterns are common for different seasons? • What weather-related hazards are in my region? • How can we reduce weather-related hazards?

Table 4.1. Overview of Instructional Segments for Grade Three

	<p>1 Playground Forces</p>	<p>Students investigate the effects of forces on the motion of playground objects like balls and swings. They use pictorial models to describe multiple forces on objects and predict how they will move as those forces change. They ask questions about how electric and magnetic forces can act without touching and then use them to solve a problem in a design challenge.</p>
	<p>2 Lifecycles for Survival</p>	<p>Students observe lifecycles as well as animals living in groups and then describe how these traits help organisms meet their needs. Students measure different traits to document the differences between offspring, their parents, and other members of their population. Some of these variations make organisms more likely to survive.</p>
	<p>3 Surviving in Different Environments</p>	<p>Students develop a model of the relationship between traits, environment, and survival. Students collect evidence that organisms live in environments that best meet their needs and that changes in the environment can affect the traits and survival of organisms.</p>
	<p>4 Weather Impacts</p>	<p>Students record patterns in weather over the school year and then analyze their data. They learn about weather patterns around the world and design solutions to reduce the impacts of weather hazards right in their own schoolyard.</p>

Sources: epSos.de 2010; Mosdell 2012; U.S. Fish and Wildlife Service 2015; mintchipdesigns 2009.

Retrieved from: [CA Science Framework, ch. 4, pg. 7](#)

3 rd Grade Science- Quarter 1 Overview			
Quarter Topic Focus: Playground Forces			
<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	provide evidence of the effects <u>of balanced and unbalanced forces</u> on the motion of an object.	(<u>Cause and Effect</u>)	3-PS2-1
<u>Make observations and/or measurements</u>	of <u>an objects motion</u> to provide evidence that a pattern can be used to predict future motion	(<u>Patterns</u>)	3-PS2-2
<u>Ask questions to determine</u>	cause and effect relationships <u>of electric or magnetic interactions between two objects not in contact with each other.</u>	(<u>Cause and Effect</u>)	3-PS2-3
<u>Define a simple design problem</u>	that can <u>be solved by applying</u> scientific ideas <u>about magnets</u>	n/a	3-PS2-4
<u>Define a simple design problem</u>	<u>reflecting a need or a want</u> that includes specified criteria for <u>success and constraints on materials, time, or cost</u>	n/a	3-5-ETS1-1
<u>Generate and compare multiple possible solutions</u>	<u>to a problem based</u> on how well each is likely to <u>meet the criteria and constraints of the problem</u>	n/a	3-5-ETS1-2

3 rd Grade Science- Quarter 2 Overview			
Quarter Topic Focus: Lifecycles for Survival			
<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) *colors are associated with SEP (see page 1 for key)
<u>Develop models to describe that</u>	<u>organisms have unique and diverse life cycles</u> but all have in common birth, growth, reproduction, and death	(<u>Patterns</u>)	3-LS1-1
<u>Construct an argument that</u>	<u>some animals</u> form groups that help members survive	(<u>Cause and Effect</u>)	3-LS2-1
<u>Analyze and interpret data to provide evidence that</u>	<u>plants and animals have traits inherited from parents</u>	<u>and that variation of these traits exists</u> in a group of similar organisms (Patterns)	3-LS3-1
<u>Use evidence to construct an explanation for how</u>	<u>the variations in characteristics among individuals of the same species</u>	<u>may provide advantages</u> in surviving, finding mates, and reproducing (Cause and Effect)	3-LS4-2

3 rd Grade Science- Quarter 3 Overview			
Quarter Topic Focus: Surviving in Different Environments			
<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 evidence to support the explanation that</u>	<u>traits can be</u>	<u>influenced by</u> environment (Cause and Effect)	3-LS3-2
<u>Use evidence to construct an explanation for how</u>	<u>the variation in characteristics among individuals of the same species</u>	<u>may provide advantages</u> in surviving, finding mates, and reproducing (Cause and Effect)	3-LS4-1
<u>Construct an argument with evidence that</u>	<u>in a particular habitat some organisms</u>	<u>can survive well</u> , some survive less well, and some cannot survive at all (Cause and Effect)	3-LS4-3
<u>Make a claim about the merit of a solution</u>	<u>to a problem caused when the environment changes and the types of plants</u>	<u>may change</u> (Systems and System Models)	3-LS4-4
<u>Define a simple design problem</u>	reflecting a need or a want <u>that includes specified criteria for success and constraints on materials, time, or cost.</u>	n/a	3-5-ETS1-1
<u>Generate and compare multiple possible solutions</u>	to a problem <u>based on how well each is likely to meet the criteria and constraints of the problem</u>	n/a	3-5-ETS1-2

3 rd Grade Science- Quarter 4 Overview			
Quarter Topic Focus: Weather Impacts			
<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>Represent data in tables and graphical displays to describe</u>	<u>typical weather conditions</u>	<u>expected during a particular season</u> (Patterns)	3-ESS2-1
<u>Obtain and combine information to describe</u>	<u>climates in</u>	<u>different regions of the world</u> (Patterns)	3-ESS2-2
<u>Make a claim about the merit of a design solution</u>	that reduces the impacts of a <u>weather-related hazard</u>	<u>(Cause and Effect)</u>	3-ESS3-1
<u>Define a simple design problem</u>	reflecting a need or a want <u>that includes specified criteria for success and constraints on materials, time, or cost</u>	n/a	3-5-ETS1-1
<u>Generate and compare multiple possible solutions</u>	to a problem <u>based on how well each is likely to meet the criteria and constraints of the problem</u>	n/a	3-5-ETS1-2