



Science made for the Next Generation

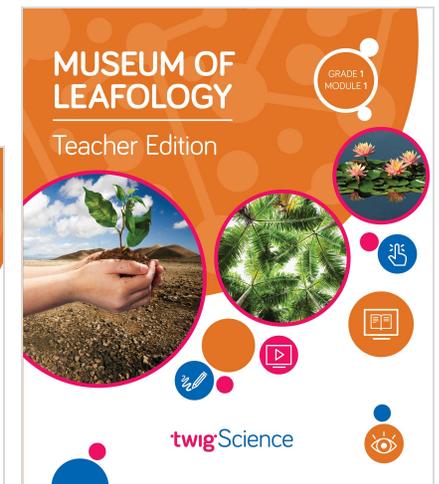
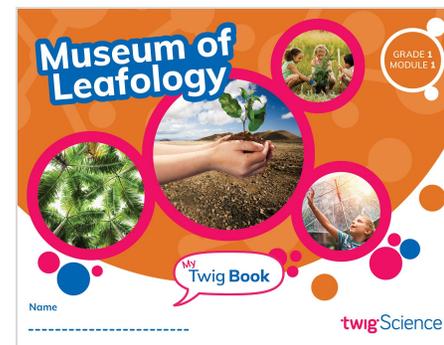
Twig Science was built from the ground up for the California NGSS by award-winning STEM education specialists.

Reviewing our program, you'll find:

- A clear conceptual flow across the program, clearly set out in the program CA NGSS Framework Alignment
- Modules that bundle different scientific disciplines including engineering and environmental principles and concepts (as defined by the CDE), aligned 1:1 with the segments of the California Framework
- Phenomena and investigative problems at the heart of each module, with Grade Scope and Sequence tables that show how the dimensions flow and build in sophistication across each grade
- Module Contents that tell the story of how students apply the three dimensions in a module, with Driving Questions that scaffold their learning journey
- Three-dimensional lessons and assessments that clearly outline the dimensions applied.

This is why we score so highly on NGSS-based rubrics such as NextGen TIME Paper screen evaluation.

This rubric has been completed at a program level, and is designed to highlight where you can find evidence for the Designed for NGSS: Foundations Rubric in whatever module you choose to evaluate. The rubric includes citations to the printed Teachers Edition and Twig Book (Student Edition).



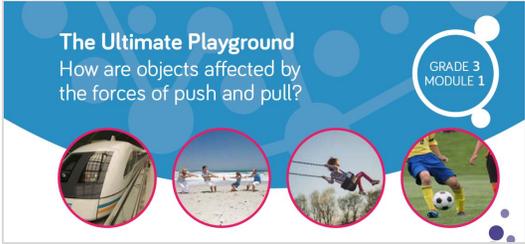
Designed for the NGSS: Foundations	High Quality 5	Medium Quality 3	Low Quality 1
<p>F1. Presence of Phenomena/Problem. The materials include phenomena/problems that have the potential to drive students learning toward the targeted learning goals in the following ways:</p> <ul style="list-style-type: none"> phenomena/problems in the materials are to be relevant to students; explanations for phenomena connect to the three dimensions; solutions to problems connect to the three dimensions. 	<p>The materials include phenomena/problems that have strong <i>potential</i> to drive student learning toward the targeted learning goals.</p>	<p>The materials include phenomena/problems that have some <i>potential</i> to drive student learning toward the targeted learning goals.</p>	<p>The materials include phenomena/problems that have limited <i>potential</i> to drive student learning toward the targeted learning goals.</p>
<p>F2. Presence of Three Dimensions. The materials include opportunities for students to develop and use the three dimensions, such that:</p> <ul style="list-style-type: none"> the DCIs, SEPs, and CCCs are present and have the potential to support student learning toward the targeted learning goals for each dimension; when engineering design is a learning focus, it is integrated with other appropriate dimensions (i.e., engineering is not isolated). 	<p>The materials consistently provide opportunities for students to develop and use the three dimensions.</p>	<p>The materials occasionally provide opportunities for students to develop and use the three dimensions.</p>	<p>The materials rarely provide opportunities for students to use the three dimensions.</p>
<p>F3. Presence of Logical Sequence. Materials demonstrate appropriate sequencing of three dimensions when:</p> <ul style="list-style-type: none"> they include a targeted set of DCIs, SEPs, and CCCs within a sequence; the sequence is clear and logical across the DCIs; the SEPs and CCCs are potentially sufficient and appropriate for students to figure out the phenomena or problems. 	<p>The materials consistently exhibit a clear, logical, and appropriate sequence across the three dimensions.</p>	<p>The materials occasionally exhibit a clear, logical, and appropriate sequence across the three dimensions.</p>	<p>The materials rarely exhibit a clear, logical, and appropriate sequence across the three dimensions.</p>

Designed for NGSS: Foundations Rubric

Analyze Evidence

Directions:

1. Review the Designed for NGSS: Foundations Rubric.
2. Reflect on the evidence (or lack of evidence) that you and your team gathered and represented.
3. Record strengths and limitations for each criterion based on your evidence. Cite specific examples.

Strengths	
F1. Presence of Phenomena /Problems	
<p>Every module in Twig Science has an overarching Module Phenomenon or Investigative Problem that drives student learning.</p>	 <p style="text-align: center; color: #e91e63;">Grade 3 Module 1 Module Phenomenon</p>

Each module is built around an engaging storyline that places the phenomena and problems in real-world contexts. For example, in Grade 1 Module 1, students curate their own Museum of Leafology to explore why some plants are different and others are the same. In Grade 3 Module 1, they make sense of how objects are pushed or pulled by designing their own Ultimate Playground. While in Grade 5 Module 2, students go undercover at Yellowstone National Park to figure out how matter and energy move through an ecosystem. At the start of each module, students are shown a movie-style trailer video, which captivates their imagination for the challenge ahead.



Grade 1 Module 1 Museum of Leafology Trailer video



Grade 3 Module 1 The Ultimate Playground Trailer video



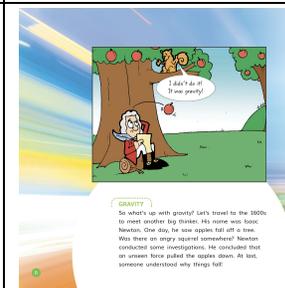
Grade 5 Module 2 Yellowstone: Uncovered Trailer video

Every module is broken down into chapters called Driving Questions, which students complete in a sequence. These are identified at the start of every Teacher Edition in the **Module Contents (TE pp.ii-iii)**. The phenomena and problems that students investigate in each DQ scaffolds their acquisition of the DCIs, SEPs, and CCCs that are required to master the Module Phenomenon or Investigative Problem.

Module Introduction	1	Driving Question 3	69
Module Contents	ii	How are seeds dispersed?	
Collaborative Think Tank	iv	Performance Expectations: EETS Use mathematics to design a solution to a human problem by extending how plants and/or animals use their external parts to help them survive, grow, and meet their needs. K-2 ETS-2 Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem. K-2 ETS-3 Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.	
Built for CA NGSS	v	Students explain the many ways that plants use to distribute seeds away from the parent plant. In science, students tackle an Engineering Design Challenge to design and build seeds for dispersal by wind. They test and present the results of their design before asking a Seeds Room to the Museum of Landology.	
Spark Student Curiosity	xv	Resources and Assessments	70
K-6 Program Components	vi	Overview	70
Access for All	viii	Resources and Assessments	71
3-D Assessments	ix	Differentiated Instruction	74
NGSS Science Levelled Readers	x	Lesson 1 Seed Explorers	76
Module ELA Connections	xii	Lesson 2 By Wind, Animal, or Water?	84
Module Hands-On Lab Kit	xiii	Lesson 3 Act like a Scientist!	92
Driving Question 1	1	Lesson 4 Design Your Own Seed	98
What is a plant?		Lesson 5 Build Your Own Seed	106
Students explore what it takes to be a good scientist. How the young scientists investigate the concept of being and naming things, with an emphasis on plants. They go outside to photograph plants and then begin an observation experiment by planting some seeds.		Lesson 6 Blowin' in the Wind	112
Overview	2	Lesson 7 The Seeds Room	118
Resources and Assessments	3	Driving Question 4	125
Differentiated Instruction	4	How are young and adult plants alike and different?	
Lesson 1 Be a Scientist!	5-6	Performance Expectations: EETS Use mathematics to compare an object that occurs that young plants and animals use like, but not exactly like, their parents. Students observe the seedlings they planted and record similarities and differences. Then students explore plants in nature, identifying plants they find, focusing on comparing and contrasting young and adult plants of the same type.	
Lesson 2 Is it Living?	12	Resources and Assessments	126
Lesson 3 Plants Are Amazing!	20	Overview	127
Lesson 4 Sleepy Seeds	26	Resources and Assessments	127
Driving Question 2	35	Differentiated Instruction	128
How do plants use their parts to grow and survive?		Lesson 1 How Are Seedlings Similar?	130
Students use the microscope to investigate how plants use their parts to grow and survive. They begin making the first course in the Museum of Landology: the Plant Parts Room.		Lesson 2 How Are Seedlings Different?	136
Overview	36	Lesson 3 Compare and Contrast Amazing Plants	142
Resources and Assessments	37	Lesson 4 Compare Seedlings and Their Parents	148
Differentiated Instruction	38	Overview	126
Lesson 1 A Little Sprout	39-40	Resources and Assessments	127
Lesson 2 From Roots to Fruits	48	Differentiated Instruction	128
Lesson 3 Be a Plant Builder!	56	Lesson 1 How Are Seedlings Similar?	130
Lesson 4 The Plant Parts Room	64	Lesson 2 How Are Seedlings Different?	136
Scientist and Engineer Investigation Experience:		Lesson 3 Compare and Contrast Amazing Plants	142
Digital Investigation		Lesson 4 Compare Seedlings and Their Parents	148
Guided Investigation		Overview	126
Hands-On Investigation		Resources and Assessments	127
Reading for Evidence		Differentiated Instruction	128
3-D Assessment		Lesson 1 How Are Seedlings Similar?	130
Video Investigation		Lesson 2 How Are Seedlings Different?	136

Module Contents TE pp.ii-iii

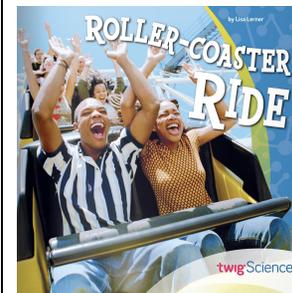
In addition, each module is complemented with a magazine-style **Leveled Reader** (available in four levels, plus Spanish) that provides additional exposure to relevant phenomena/problems, as well as interviews with scientists and engineers from diverse backgrounds. Packed with stunning images, cartoons, and jokes, they are designed to appeal to students from a diverse range of learning abilities.



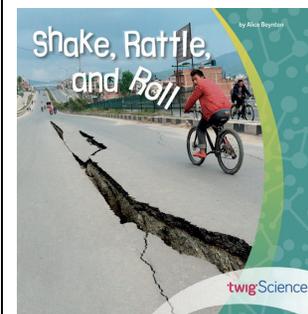
Roller-Coaster Ride (Grade 3 Module 1 Leveled Reader p.6)



Our Leafy Friends (Grade 1 Module 1 Leveled Reader Cover)



Roller-Coaster Ride (Grade 3 Module 1 Levelled Reader Cover)



Shake, Rattle, and Roll (Grade 4 Module 4 Levelled Reader Cover)



Where Are the Bees? (Grade 2 Module 4 Levelled Reader p. 14)

F2. Presence of Three Dimensions

Students are supported to use the three dimensions with increasing sophistication to make sense of the Module Phenomenon, answer the Driving Questions, and complete the learning activities.

Every DCI, SEP, and CCC that is addressed in each lesson is clearly identified in the Teacher Edition at the start of the lesson, as are the **3-D Learning Objectives**.

3-D LEARNING OBJECTIVES

Students will:

- Investigate the effects of magnetic fields and magnetic poles on two magnets
- Understand the interactions between two magnets, use them to locate a hidden magnet, and determine the magnet's orientation
- Summarize ideas about magnetic forces and form a response to the Driving Question.

Grade 3 Module 1 DQ4L4 3-D Learning Objectives TE p. 222

In the Student Edition (called the Twig Book), the **"I can" statements** for each Driving Question explain the three dimensions in student-friendly language.

Across each full grade, the class creates their own Science Tools poster, which tracks when students first use a SEP and when they later apply it to different contexts. By the time they have completed the last module in the grade, students will have used the SEPs explicitly many times. This metacognitive activity helps students think about the practices they are using and how they help them make sense of phenomena and solve problems.

I can...

- Work well in a team
- Identify whether forces are balanced or unbalanced based on an object's motion.

3-PS2-1

Grade 3 Module 1 DQ2 "I can... statements" TB p. 37

The SEPs the students use in each learning activity are labeled at point of use in the Student Edition (called the **Twig Book**), in grade-appropriate language.

LESSON 3 Stay on Track!

Challenge

Communicate Information Write about a ride that uses pushes and pulls. **Ultimate Playground.**

Reflect

Construct Explanations Draw a picture about how a push or pull changes the direction of the swing.

Word Wall

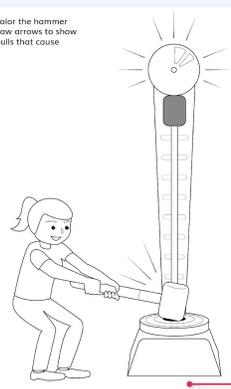
- push
- pull
- direction
- force

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Grade 3 Module 1 DQ1L3 Labeled SEPs TB p. 21

LESSON 4 A Heavyweight Force

Use Models Color the hammer in the picture. Draw arrows to show the pushes and pulls that cause it to move.



Word Wall

- gravity

Driving Question 1 | Lesson 4

Grade 3 Module 1 DQ1L4 Labeled SEPs TB p. 22

F3. Presence of Logical Sequence

The front cover of every Teacher Edition contains the **CA NGSS Framework Alignment**. It sets out a clear and logical sequence for the Performance Expectations across the Twig Science K–6 modules. It also illustrates how the 29 K–6 modules align directly to the 29 K–6 CA Framework Segments.

GRADE	CA FRAMEWORK SEGMENT	MODULE	MODULE PHENOMENON	PERFORMANCE EXPECTATIONS
GRADE K	Plants and Animal Needs	My Big Nature Adventure	Different plants and animals live in different places.	K-LS1-1, K-ESS3-1
	Pushes and Pulls	Marble Run Engineer	What happens when we push, pull, and drop objects? How can we change their direction and speed?	K-PS2-1, K-PS2-2, K-2-ETS1-1, K-2-ETS1-2, K-ESS3-2
GRADE 1	Weather Patterns	Be Prepared	How do we observe weather and collect data to describe weather patterns over time?	K-ESS2-1, K-ESS2-2, K-PS3-1, K-PS3-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3
	Animals and Plants Can Change Their Environment	I Can	How can I protect the environment from changes that harm it?	K-ESS2-2, K-ESS3-3, K-2-ETS1-1
GRADE 1	Plant Shapes	Museum of Landology	How are all plants alike and how are they different?	1-LS1-1, 1-LS1-2, K-2-ETS1-1, K-2-ETS1-2, K-ESS3-2
	Animal Sounds	Animal Reporters	How do animals use their body parts, communicate with their young, and make sounds?	1-LS1-1, 1-LS1-3, 1-PS4-1, 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2
GRADE 1	Shadows and Lights	Shadow Town	Why is the town of Rajan in a shadow?	1-PS4-2, 1-PS4-3
	Patterns of Motion of Objects in the Sky	Patterns in the Sky	What patterns do we observe in the sky?	1-ESS1-1, 1-ESS1-2
GRADE 2	Landscape Shapes	My Journey West	How can we understand and describe the land and water on Earth?	2-ESS2-2, 2-ESS2-3
	Landscape Materials	Master of Materials	How can we describe materials as different from one another and understand how their properties relate to their use?	2-PS1-1, 2-PS1-2, 2-PS1-3, 2-PS1-4, K-2-ETS1-2, K-2-ETS1-3
GRADE 2	Landscape Changes	Save the Island	How do natural processes shape the Earth?	2-ESS1-1, 2-ESS1-2, K-2-ETS1-2
	Biodiversity in Landscapes	A Garden for Life	How do living things in an environment depend on one another and what do they need to grow?	2-LS2-1, 2-LS2-2, 2-LS4-1, K-2-ETS1-2
GRADE 3	Playground Forces	The Ultimate Playground	How are objects affected by the forces of push and pull?	3-PS2-1, 3-PS2-2, 3-PS2-3, 3-PS2-4, 3-8-ETS1-1, 3-8-ETS1-2
	Life Cycles for Survival	Welcome to the Biosphere	How do plants' and animals' life cycles help them survive?	3-LS1-1, 3-LS1-3, 3-LS3-1, 3-LS4-2
GRADE 3	Surviving in Different Environments	How to Survive on Ice Age	What is the relationship between an organism and its environment?	3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 3-ESS2-4, 3-ESS3-1, 3-8-ETS1-2, 3-8-ETS1-3
	Weather Impacts	Weather Warning HQ	What is the weather like around the world?	3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 3-8-ETS1-1
GRADE 4	Car Crashes	Egg Racers	What happens to energy when objects collide?	4-PS3-1, 4-PS3-3, 3-8-ETS1-3
	Renewable Energy	Sparks Energy	How do people produce and transfer energy for their use?	4-ESS3-1, 4-PS3-2, 4-PS3-4
GRADE 4	Scaping Landscapes	Time-Travelling Tour Guides	How have weathering and erosion sculpted some of Earth's most interesting landscapes?	4-ESS1-1, 4-ESS1-3, 4-ESS2-2, 4-ESS2-3, 3-8-ETS1-2
	Earthquake Engineering	Earthquake Engineering	How can engineering help make earthquakes less dangerous?	4-PS4-1, 4-ESS2-2, 4-ESS2-3, 3-8-ETS1-2, 3-8-ETS1-3
GRADE 4	Animal Senses	How do the many parts of my body work together to help me live in the world?	4-LS1-1, 4-LS1-2, 4-PS2-2, 4-PS4-1, 4-PS4-2, 4-PS4-3, 3-8-ETS1-1	
	What is Matter Made Of?	Matter Mysteries Hotline	What is matter made of?	4-PS1-1, 4-PS1-3, 4-PS1-4, 3-8-ETS1-3
GRADE 5	From Matter to Organisms	Yellowstone: Uncovered	How do matter and energy move through an ecosystem?	5-LS1-1, 5-LS1-3, 1-PS3-1
	Interacting Earth Systems	H2O Response Team	Why do some places lock fresh water and what can we do to protect it?	5-ESS2-1, 5-ESS2-2, 5-ESS2-3, 3-8-ETS1-1, 3-8-ETS1-2, 3-8-ETS1-3
GRADE 5	Patterns in the Night Sky	Cosmic Guidebook	What patterns do we notice when we observe the stars?	5-PS4-1, 5-ESS1-1, 5-ESS1-2, 5-ESS1-3
	Systems and Sub-systems in Earth and Life Science	BioFact Systems Worldwide	How do human body systems and subsystems work together?	MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS1-4, MS-ETS1-1, MS-ETS1-2
GRADE 6	Earth System Interactions	Destination Earthwork	Weather and climate vary around the world, but we can use science and past trends to predict them.	MS-ESS2-1, MS-ESS2-2, MS-ESS2-3, MS-PS3-1, MS-PS3-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3
	Causes and Effects of Regional Climates	The Red List	How do the environment and genetics affect animals and plants?	MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS1-4, MS-LS1-5, MS-LS1-6, MS-LS1-7, MS-LS1-8, MS-LS1-9, MS-LS1-10, MS-LS1-11, MS-LS1-12, MS-LS1-13, MS-LS1-14, MS-LS1-15, MS-LS1-16, MS-LS1-17, MS-LS1-18, MS-LS1-19, MS-LS1-20, MS-LS1-21, MS-LS1-22, MS-LS1-23, MS-LS1-24, MS-LS1-25, MS-LS1-26, MS-LS1-27, MS-LS1-28, MS-LS1-29, MS-LS1-30, MS-LS1-31, MS-LS1-32, MS-LS1-33, MS-LS1-34, MS-LS1-35, MS-LS1-36, MS-LS1-37, MS-LS1-38, MS-LS1-39, MS-LS1-40, MS-LS1-41, MS-LS1-42, MS-LS1-43, MS-LS1-44, MS-LS1-45, MS-LS1-46, MS-LS1-47, MS-LS1-48, MS-LS1-49, MS-LS1-50, MS-LS1-51, MS-LS1-52, MS-LS1-53, MS-LS1-54, MS-LS1-55, MS-LS1-56, MS-LS1-57, MS-LS1-58, MS-LS1-59, MS-LS1-60, MS-LS1-61, MS-LS1-62, MS-LS1-63, MS-LS1-64, MS-LS1-65, MS-LS1-66, MS-LS1-67, MS-LS1-68, MS-LS1-69, MS-LS1-70, MS-LS1-71, MS-LS1-72, MS-LS1-73, MS-LS1-74, MS-LS1-75, MS-LS1-76, MS-LS1-77, MS-LS1-78, MS-LS1-79, MS-LS1-80, MS-LS1-81, MS-LS1-82, MS-LS1-83, MS-LS1-84, MS-LS1-85, MS-LS1-86, MS-LS1-87, MS-LS1-88, MS-LS1-89, MS-LS1-90, MS-LS1-91, MS-LS1-92, MS-LS1-93, MS-LS1-94, MS-LS1-95, MS-LS1-96, MS-LS1-97, MS-LS1-98, MS-LS1-99, MS-LS1-100

CA NGSS Framework Alignment

The cover also contains the grade-specific **Scope and Sequence**, which clearly identifies the sequence of the modules, as well as the three dimensions that each module targets. Cross-curricular connections are also included.

Grade 1	Module	CA Framework Segment	Performance Expectations
1	My Big Nature Adventure	LS1-1	K-LS1-1, K-ESS3-1
1	Be Prepared	ESS2-1, ESS2-2, PS3-1, PS3-2, ETS1-1, ETS1-2, ETS1-3	K-ESS2-1, K-ESS2-2, K-PS3-1, K-PS3-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3
1	I Can	ESS2-2, ESS3-3	K-ESS2-2, K-ESS3-3, K-2-ETS1-1
1	Museum of Landology	LS1-1, LS1-2, ETS1-1, ETS1-2	1-LS1-1, 1-LS1-2, K-2-ETS1-1, K-2-ETS1-2, K-ESS3-2
1	Animal Reporters	LS1-1, LS1-3, PS4-1, PS4-4, ETS1-1, ETS1-2	1-LS1-1, 1-LS1-3, 1-PS4-1, 1-PS4-4, K-2-ETS1-1, K-2-ETS1-2
1	Shadow Town	PS4-2, PS4-3	1-PS4-2, 1-PS4-3
1	Patterns in the Sky	ESS1-1, ESS1-2	1-ESS1-1, 1-ESS1-2
2	My Journey West	ESS2-2, ESS2-3	2-ESS2-2, 2-ESS2-3
2	Master of Materials	PS1-1, PS1-2, PS1-3, PS1-4, ETS1-2, ETS1-3	2-PS1-1, 2-PS1-2, 2-PS1-3, 2-PS1-4, K-2-ETS1-2, K-2-ETS1-3
2	Save the Island	ESS1-1, ESS1-2, ESS1-3, ETS1-2	2-ESS1-1, 2-ESS1-2, 2-ESS1-3, K-2-ETS1-2
2	A Garden for Life	LS2-1, LS2-2, LS4-1, K-2-ETS1-2	2-LS2-1, 2-LS2-2, 2-LS4-1, K-2-ETS1-2
3	The Ultimate Playground	PS2-1, PS2-2, PS2-3, PS2-4, ETS1-1, ETS1-2	3-PS2-1, 3-PS2-2, 3-PS2-3, 3-PS2-4, 3-8-ETS1-1, 3-8-ETS1-2
3	Welcome to the Biosphere	LS1-1, LS1-3, LS3-1, LS4-2	3-LS1-1, 3-LS1-3, 3-LS3-1, 3-LS4-2
3	How to Survive on Ice Age	ESS2-1, ESS2-2, ESS2-3, ESS2-4, ETS1-2, ETS1-3	3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 3-ESS2-4, 3-8-ETS1-2, 3-8-ETS1-3
3	Weather Warning HQ	ESS2-1, ESS2-2, ESS2-3, ETS1-1	3-ESS2-1, 3-ESS2-2, 3-ESS2-3, 3-8-ETS1-1
4	Egg Racers	PS3-1, PS3-3, 8-ETS1-3	4-PS3-1, 4-PS3-3, 3-8-ETS1-3
4	Sparks Energy	ESS3-1, PS3-2, PS3-4	4-ESS3-1, 4-PS3-2, 4-PS3-4
4	Time-Travelling Tour Guides	ESS1-1, ESS1-3, ESS2-2, ESS2-3, 8-ETS1-2	4-ESS1-1, 4-ESS1-3, 4-ESS2-2, 4-ESS2-3, 3-8-ETS1-2
4	Earthquake Engineering	PS4-1, ESS2-2, ESS2-3, 8-ETS1-2, 8-ETS1-3	4-PS4-1, 4-ESS2-2, 4-ESS2-3, 3-8-ETS1-2, 3-8-ETS1-3
4	Super Survivors	LS1-1, 4-LS1-2, PS2-2, PS4-1, 4-PS4-2, 4-PS4-3, 8-ETS1-1	4-LS1-1, 4-LS1-2, 4-PS2-2, 4-PS4-1, 4-PS4-2, 4-PS4-3, 3-8-ETS1-1
5	Matter Mysteries Hotline	PS1-1, PS1-3, PS1-4, 8-ETS1-3	4-PS1-1, 4-PS1-3, 4-PS1-4, 3-8-ETS1-3
5	Yellowstone: Uncovered	LS1-1, 5-LS1-3, PS3-1	5-LS1-1, 5-LS1-3, 1-PS3-1
5	H2O Response Team	ESS2-1, ESS2-2, ESS2-3, 8-ETS1-1, 8-ETS1-2, 8-ETS1-3	5-ESS2-1, 5-ESS2-2, 5-ESS2-3, 3-8-ETS1-1, 3-8-ETS1-2, 3-8-ETS1-3
5	Cosmic Guidebook	PS4-1, ESS1-1, 5-ESS1-2	5-PS4-1, 5-ESS1-1, 5-ESS1-2, 5-ESS1-3
6	BioFact Systems Worldwide	MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS1-4, MS-ETS1-1, MS-ETS1-2	MS-LS1-1, MS-LS1-2, MS-LS1-3, MS-LS1-4, MS-ETS1-1, MS-ETS1-2
6	Destination Earthwork	ESS2-1, ESS2-2, ESS2-3, MS-PS3-1, MS-PS3-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3	MS-ESS2-1, MS-ESS2-2, MS-ESS2-3, MS-PS3-1, MS-PS3-2, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3
6	The Red List	MS-LS1-1, MS-LS1-4, MS-LS1-5	MS-LS1-1, MS-LS1-4, MS-LS1-5, MS-LS1-6, MS-LS1-7, MS-LS1-8, MS-LS1-9, MS-LS1-10, MS-LS1-11, MS-LS1-12, MS-LS1-13, MS-LS1-14, MS-LS1-15, MS-LS1-16, MS-LS1-17, MS-LS1-18, MS-LS1-19, MS-LS1-20, MS-LS1-21, MS-LS1-22, MS-LS1-23, MS-LS1-24, MS-LS1-25, MS-LS1-26, MS-LS1-27, MS-LS1-28, MS-LS1-29, MS-LS1-30, MS-LS1-31, MS-LS1-32, MS-LS1-33, MS-LS1-34, MS-LS1-35, MS-LS1-36, MS-LS1-37, MS-LS1-38, MS-LS1-39, MS-LS1-40, MS-LS1-41, MS-LS1-42, MS-LS1-43, MS-LS1-44, MS-LS1-45, MS-LS1-46, MS-LS1-47, MS-LS1-48, MS-LS1-49, MS-LS1-50, MS-LS1-51, MS-LS1-52, MS-LS1-53, MS-LS1-54, MS-LS1-55, MS-LS1-56, MS-LS1-57, MS-LS1-58, MS-LS1-59, MS-LS1-60, MS-LS1-61, MS-LS1-62, MS-LS1-63, MS-LS1-64, MS-LS1-65, MS-LS1-66, MS-LS1-67, MS-LS1-68, MS-LS1-69, MS-LS1-70, MS-LS1-71, MS-LS1-72, MS-LS1-73, MS-LS1-74, MS-LS1-75, MS-LS1-76, MS-LS1-77, MS-LS1-78, MS-LS1-79, MS-LS1-80, MS-LS1-81, MS-LS1-82, MS-LS1-83, MS-LS1-84, MS-LS1-85, MS-LS1-86, MS-LS1-87, MS-LS1-88, MS-LS1-89, MS-LS1-90, MS-LS1-91, MS-LS1-92, MS-LS1-93, MS-LS1-94, MS-LS1-95, MS-LS1-96, MS-LS1-97, MS-LS1-98, MS-LS1-99, MS-LS1-100
6	Class of the Future	ESS3-3, MS-ESS3-3, MS-LS1-4, MS-ETS1-4, MS-LS1-5, MS-ETS1-1	MS-ESS3-3, MS-ESS3-4, MS-LS1-4, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3

Grade 1 Scope and Sequence (TE Inside Cover)

The **Module Contents** of each Teacher Edition (pp.ii-iii) clearly identifies which Performance Expectations are addressed in each Driving Question, and how the three dimensions build on each other.

Grade 1 Module 1 Module Contents

The **Performance Expectation Progressions table** in the back cover of every Teacher Edition highlights prior experience of the three dimensions in earlier grades, as well as future exposure in later grades.

MUSEUM OF LEAFOLOGY
Performance Expectation Progressions Framework Segment: Plant Shapes

Museum of Leafology covers two California NGSS Performance Expectations (PEs) in Life Sciences (1-LS1-1 and 1-LS1-2) and three in Engineering Design (K-2-ETS1-1, K-2-ETS1-2, and K-2-ETS1-3).

Together, these PEs explore the structure and function of plants' external parts and the inheritance and variation of traits in plants. These are investigated further in Grade 1, Module 2, Animal Reporters, with the focus shifting from plants to animals.

PRIOR KNOWLEDGE	PROGRESSION				
	CURRENT GRADE	FUTURE KNOWLEDGE	GRADE 3	GRADE 4	GRADE 6
KINDERGARTEN Module 1 K-2-ETS1-1 My Big Robot Adventure Students are introduced to plants. They care for plants, identifying that plants need sunlight, air, and water. They talk about living and non-living things.	GRADE 1 Module 1 1-LS1-1 1-LS1-2 1-LS1-3 1-LS1-4 1-LS1-5 1-LS1-6 1-LS1-7 1-LS1-8 1-LS1-9 1-LS1-10 1-LS1-11 1-LS1-12 1-LS1-13 1-LS1-14 1-LS1-15 1-LS1-16 1-LS1-17 1-LS1-18 1-LS1-19 1-LS1-20 1-LS1-21 1-LS1-22 1-LS1-23 1-LS1-24 1-LS1-25 1-LS1-26 1-LS1-27 1-LS1-28 1-LS1-29 1-LS1-30 1-LS1-31 1-LS1-32 1-LS1-33 1-LS1-34 1-LS1-35 1-LS1-36 1-LS1-37 1-LS1-38 1-LS1-39 1-LS1-40 1-LS1-41 1-LS1-42 1-LS1-43 1-LS1-44 1-LS1-45 1-LS1-46 1-LS1-47 1-LS1-48 1-LS1-49 1-LS1-50 1-LS1-51 1-LS1-52 1-LS1-53 1-LS1-54 1-LS1-55 1-LS1-56 1-LS1-57 1-LS1-58 1-LS1-59 1-LS1-60 1-LS1-61 1-LS1-62 1-LS1-63 1-LS1-64 1-LS1-65 1-LS1-66 1-LS1-67 1-LS1-68 1-LS1-69 1-LS1-70 1-LS1-71 1-LS1-72 1-LS1-73 1-LS1-74 1-LS1-75 1-LS1-76 1-LS1-77 1-LS1-78 1-LS1-79 1-LS1-80 1-LS1-81 1-LS1-82 1-LS1-83 1-LS1-84 1-LS1-85 1-LS1-86 1-LS1-87 1-LS1-88 1-LS1-89 1-LS1-90 1-LS1-91 1-LS1-92 1-LS1-93 1-LS1-94 1-LS1-95 1-LS1-96 1-LS1-97 1-LS1-98 1-LS1-99 1-LS1-100	GRADE 2 Module 4 2-LS1-1 2-LS1-2 2-LS1-3 2-LS1-4 2-LS1-5 2-LS1-6 2-LS1-7 2-LS1-8 2-LS1-9 2-LS1-10 2-LS1-11 2-LS1-12 2-LS1-13 2-LS1-14 2-LS1-15 2-LS1-16 2-LS1-17 2-LS1-18 2-LS1-19 2-LS1-20 2-LS1-21 2-LS1-22 2-LS1-23 2-LS1-24 2-LS1-25 2-LS1-26 2-LS1-27 2-LS1-28 2-LS1-29 2-LS1-30 2-LS1-31 2-LS1-32 2-LS1-33 2-LS1-34 2-LS1-35 2-LS1-36 2-LS1-37 2-LS1-38 2-LS1-39 2-LS1-40 2-LS1-41 2-LS1-42 2-LS1-43 2-LS1-44 2-LS1-45 2-LS1-46 2-LS1-47 2-LS1-48 2-LS1-49 2-LS1-50 2-LS1-51 2-LS1-52 2-LS1-53 2-LS1-54 2-LS1-55 2-LS1-56 2-LS1-57 2-LS1-58 2-LS1-59 2-LS1-60 2-LS1-61 2-LS1-62 2-LS1-63 2-LS1-64 2-LS1-65 2-LS1-66 2-LS1-67 2-LS1-68 2-LS1-69 2-LS1-70 2-LS1-71 2-LS1-72 2-LS1-73 2-LS1-74 2-LS1-75 2-LS1-76 2-LS1-77 2-LS1-78 2-LS1-79 2-LS1-80 2-LS1-81 2-LS1-82 2-LS1-83 2-LS1-84 2-LS1-85 2-LS1-86 2-LS1-87 2-LS1-88 2-LS1-89 2-LS1-90 2-LS1-91 2-LS1-92 2-LS1-93 2-LS1-94 2-LS1-95 2-LS1-96 2-LS1-97 2-LS1-98 2-LS1-99 2-LS1-100	GRADE 3 Module 2 3-LS1-1 3-LS1-2 3-LS1-3 3-LS1-4 3-LS1-5 3-LS1-6 3-LS1-7 3-LS1-8 3-LS1-9 3-LS1-10 3-LS1-11 3-LS1-12 3-LS1-13 3-LS1-14 3-LS1-15 3-LS1-16 3-LS1-17 3-LS1-18 3-LS1-19 3-LS1-20 3-LS1-21 3-LS1-22 3-LS1-23 3-LS1-24 3-LS1-25 3-LS1-26 3-LS1-27 3-LS1-28 3-LS1-29 3-LS1-30 3-LS1-31 3-LS1-32 3-LS1-33 3-LS1-34 3-LS1-35 3-LS1-36 3-LS1-37 3-LS1-38 3-LS1-39 3-LS1-40 3-LS1-41 3-LS1-42 3-LS1-43 3-LS1-44 3-LS1-45 3-LS1-46 3-LS1-47 3-LS1-48 3-LS1-49 3-LS1-50 3-LS1-51 3-LS1-52 3-LS1-53 3-LS1-54 3-LS1-55 3-LS1-56 3-LS1-57 3-LS1-58 3-LS1-59 3-LS1-60 3-LS1-61 3-LS1-62 3-LS1-63 3-LS1-64 3-LS1-65 3-LS1-66 3-LS1-67 3-LS1-68 3-LS1-69 3-LS1-70 3-LS1-71 3-LS1-72 3-LS1-73 3-LS1-74 3-LS1-75 3-LS1-76 3-LS1-77 3-LS1-78 3-LS1-79 3-LS1-80 3-LS1-81 3-LS1-82 3-LS1-83 3-LS1-84 3-LS1-85 3-LS1-86 3-LS1-87 3-LS1-88 3-LS1-89 3-LS1-90 3-LS1-91 3-LS1-92 3-LS1-93 3-LS1-94 3-LS1-95 3-LS1-96 3-LS1-97 3-LS1-98 3-LS1-99 3-LS1-100	GRADE 4 Module 5 4-LS1-1 4-LS1-2 4-LS1-3 4-LS1-4 4-LS1-5 4-LS1-6 4-LS1-7 4-LS1-8 4-LS1-9 4-LS1-10 4-LS1-11 4-LS1-12 4-LS1-13 4-LS1-14 4-LS1-15 4-LS1-16 4-LS1-17 4-LS1-18 4-LS1-19 4-LS1-20 4-LS1-21 4-LS1-22 4-LS1-23 4-LS1-24 4-LS1-25 4-LS1-26 4-LS1-27 4-LS1-28 4-LS1-29 4-LS1-30 4-LS1-31 4-LS1-32 4-LS1-33 4-LS1-34 4-LS1-35 4-LS1-36 4-LS1-37 4-LS1-38 4-LS1-39 4-LS1-40 4-LS1-41 4-LS1-42 4-LS1-43 4-LS1-44 4-LS1-45 4-LS1-46 4-LS1-47 4-LS1-48 4-LS1-49 4-LS1-50 4-LS1-51 4-LS1-52 4-LS1-53 4-LS1-54 4-LS1-55 4-LS1-56 4-LS1-57 4-LS1-58 4-LS1-59 4-LS1-60 4-LS1-61 4-LS1-62 4-LS1-63 4-LS1-64 4-LS1-65 4-LS1-66 4-LS1-67 4-LS1-68 4-LS1-69 4-LS1-70 4-LS1-71 4-LS1-72 4-LS1-73 4-LS1-74 4-LS1-75 4-LS1-76 4-LS1-77 4-LS1-78 4-LS1-79 4-LS1-80 4-LS1-81 4-LS1-82 4-LS1-83 4-LS1-84 4-LS1-85 4-LS1-86 4-LS1-87 4-LS1-88 4-LS1-89 4-LS1-90 4-LS1-91 4-LS1-92 4-LS1-93 4-LS1-94 4-LS1-95 4-LS1-96 4-LS1-97 4-LS1-98 4-LS1-99 4-LS1-100	GRADE 6 Module 3 6-LS1-1 6-LS1-2 6-LS1-3 6-LS1-4 6-LS1-5 6-LS1-6 6-LS1-7 6-LS1-8 6-LS1-9 6-LS1-10 6-LS1-11 6-LS1-12 6-LS1-13 6-LS1-14 6-LS1-15 6-LS1-16 6-LS1-17 6-LS1-18 6-LS1-19 6-LS1-20 6-LS1-21 6-LS1-22 6-LS1-23 6-LS1-24 6-LS1-25 6-LS1-26 6-LS1-27 6-LS1-28 6-LS1-29 6-LS1-30 6-LS1-31 6-LS1-32 6-LS1-33 6-LS1-34 6-LS1-35 6-LS1-36 6-LS1-37 6-LS1-38 6-LS1-39 6-LS1-40 6-LS1-41 6-LS1-42 6-LS1-43 6-LS1-44 6-LS1-45 6-LS1-46 6-LS1-47 6-LS1-48 6-LS1-49 6-LS1-50 6-LS1-51 6-LS1-52 6-LS1-53 6-LS1-54 6-LS1-55 6-LS1-56 6-LS1-57 6-LS1-58 6-LS1-59 6-LS1-60 6-LS1-61 6-LS1-62 6-LS1-63 6-LS1-64 6-LS1-65 6-LS1-66 6-LS1-67 6-LS1-68 6-LS1-69 6-LS1-70 6-LS1-71 6-LS1-72 6-LS1-73 6-LS1-74 6-LS1-75 6-LS1-76 6-LS1-77 6-LS1-78 6-LS1-79 6-LS1-80 6-LS1-81 6-LS1-82 6-LS1-83 6-LS1-84 6-LS1-85 6-LS1-86 6-LS1-87 6-LS1-88 6-LS1-89 6-LS1-90 6-LS1-91 6-LS1-92 6-LS1-93 6-LS1-94 6-LS1-95 6-LS1-96 6-LS1-97 6-LS1-98 6-LS1-99 6-LS1-100

Grade 1 Module 1 Performance Expectation Progressions table

An Overview of every Driving Question provided in the Teacher Edition briefly explains how the student experience of the three dimensions progresses across the lessons of that Driving Question.

In addition, every lesson starts with an Overview that adds detail for how the three dimensions build across the five sections of each lesson.

Spark: An engaging “hook” activity, which motivates students for the investigations ahead.

Investigate: Students think like scientists and design like engineers, through hands-on, digital, video, and informational text Investigations.

Report: Students articulate what they’ve learned today, citing evidence and their use of the three dimensions.

Connect: Students make connections to the Driving Questions and Module Investigative Problem, while building knowledge of CCCs and SEPs.

Reflect: Students use different means to think about what they have learned so far and how they can use their new understandings to better figure out phenomena/problems.

Earthquakes in Oklahoma

OVERVIEW

Spark	5 min	Students examine a graph showing the growing number of earthquakes in Oklahoma in recent years.
Investigate	15 min	Students read an informational text about earthquakes in Oklahoma using close reading strategies.
Report	18 min	Students write a news report about the change in the number of earthquakes in Oklahoma.
Connect	7 min	There is no Connect in this lesson.
Reflect	7 min	Student pairs take turns to read their news reports to one another.

STANDARDS

NGSS

- ESS2.B: Plate Tectonics and Large-Scale System Interactions
- ESS2.E: Biogeography
- SEP.1: Asking Questions and Defining Problems
- SEP.8: Using Mathematics and Computational Thinking
- SEP.8: Obtaining, Evaluating, and Communicating Information
- CCC.1: Patterns
- CCC.2: Cause and Effect
- Interdependence of Science, Engineering, and Technology
- Influence of Science, Engineering, and Technology on Society and the Natural World

CALIFORNIA

- Principle I: People Depend on Natural Systems
- Principle II: People Influence Natural Systems
- Principle III: Natural Systems Change in Ways that People Benefit from and can Influence
- Principle IV: There are no Permanent or Impenetrable Boundaries that Prevent Matter from Flowing between Systems
- Principle V: Decisions Affecting Resources and Natural Systems are Complex and Involve Many Factors
- RI.4.1, RI.4.3: Key Ideas and Details
- RI.4.7, RI.4.9: Integrations of Knowledge and Ideas
- W.4.0: Research to Build and Present Knowledge
- SL.4.1: Comprehension and Collaboration
- SL.4.4: Presentation of Knowledge and Ideas
- PS.4.6a: Reading/Viewing closely
- A.MO.B: Represent and interpret data

3-D LEARNING OBJECTIVES

Students will:

- Obtain and discuss information from a text about earthquakes
- Analyze a text and a graph to determine patterns and cause-and-effect relationships
- Present information in a news report in written and oral form.

Grade 4 Module 4 DQ2L5 Lesson
Overview TE p. 80