

Science Pacing Rationale

120 total days, 30-minute days

The USBE recommends “daily science instruction” in grades K–6, though the exact structure looks different at each grade level. According to the Elementary and Secondary School General Core Rule (R277-700): “The Superintendent shall place a **greater emphasis on a student’s mastery** of course material rather than completion of predetermined time allotments for courses.”

To ensure students achieve mastery of the SEEd Standards at their described proficiency levels (outlined in the SEEd Core Guides), we have allotted the following time for 3rd-grade science:

Third Grade 120 Total Days - 30-minute days

- **Curriculum Days (35 days):** Core OpenSciEd lessons.
- **Other Days/Flexible (25 days):** Reserved for assessment, reteach, enrichment, digital tools, and other district-supported resources.

Unit Breakdown	Total Days = 120 30 minute days
UNIT 1: 35 DAYS (+2 Other)	37 days
UNIT 2: 26 DAYS (+2 Other)	28 days
UNIT 3: 22 DAYS (+2 Other)	24 days
UNIT 4: 29 DAYS (+2 Other)	31 days

We intentionally paced for 120 instructional days instead of the full 180 to reflect the realities of elementary classrooms. This structure:

- Provides time at the beginning of the year for building classroom routines.
- Accommodates end-of-year testing.
- Preserves space for holidays, school breaks, and traditional school events that are central to the elementary experience.

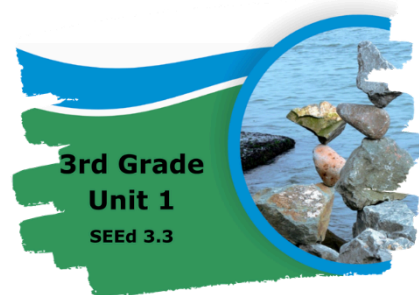
Please note that districts may have different calendars. For a suggested pacing guide for each unit, visit the website.

3rd Grade Unit Order Rationale

The Utah SEEd 3rd grade standards are organized into three strands: 3.1 Weather and Climate Patterns, 3.2 Effects of Traits on Survival, and 3.3 Forces Affect Motion. These “strands” describe major areas of learning and outline the key ideas, practices, and ways of thinking students develop across the year. They are not intended to be taught in the order they appear or used as instructional units, but instead represent connected learning goals that build over time.

The OpenSciEd 3rd grade curriculum has been adapted for SEEd and organized into four connected units. This structure ensures that all SEEd standards are addressed in a logical, meaningful sequence that reflects how students make sense of the world through observing phenomena, asking questions, analyzing evidence, and designing solutions. Each unit builds on prior experiences and integrates the Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts outlined in the SEEd standards.

The order of units in 3rd grade is intentional. Unit 1 focuses on forces and motion, providing a foundation for understanding how objects move and interact, including contact and non-contact forces. Unit 2 builds on this by shifting to weather and climate patterns, where students analyze data and design solutions to reduce the impact of weather-related hazards. Units 3 and 4 address the SEEd strand on traits and survival. Unit 3 focuses on patterns of trait variation and how traits are inherited and influenced by the environment, while Unit 4 extends this thinking to how environmental changes impact organisms and how humans can design solutions to support survival. Together, the four units ensure that all three SEEd strands are fully addressed while maintaining a coherent progression of ideas across the year.



Unit 1 - Forces Affect Motion

Students begin the year by investigating how and why objects move, using balanced and unbalanced forces to explain motion. Through engaging with puzzling sculptures, students explore how multiple forces can act on an object to keep it stable or create predictable movement. They plan and carry out investigations to test how different forces affect motion and use evidence to explain their results. As the unit progresses, students explore non-contact forces, such as magnets, and apply their understanding to design and build a device that solves a problem.

Addresses SEEd strand 3.3 (3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5)

Unit 2 - Weather & Climate Patterns

In this unit, students investigate patterns in weather and climate and how those patterns affect everyday life. They analyze temperature and precipitation data to determine where different fruits can grow and explain how those foods are available year-round. Students use evidence from data to make predictions about weather and climate in different regions. They also explore weather-related hazards and apply engineering design to develop, test, and improve solutions that reduce the impact of those hazards.

Addresses SEEd strand 3.1 (3.1.1, 3.1.2, 3.1.3) & SEEd standard 3.2.1



Unit 3 - Trait Variations

Students explore how and why organisms look and behave the way they do by investigating patterns of inherited traits and environmental influences. Using examples such as canines, students identify similarities and differences in traits and develop explanations for how traits are passed from parents to offspring.

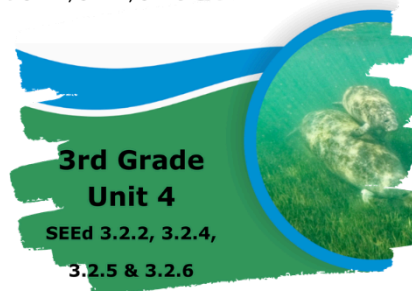
They also examine how environmental conditions can influence the development of traits. Through this work, students build an understanding of how variation supports survival in different environments.

Addresses SEEd standards 3.2.1, 3.2.2, 3.2.3 & 3.2.4

Unit 4 - Ecosystem Change & Survival

Placed last in the sequence, this unit builds on students' understanding of traits and extends it to how organisms survive within changing environments. Students investigate aquatic habitats and explore how changes in those environments affect plants and animals. They use evidence to explain how group behavior and habitat conditions support survival and analyze how environmental changes impact organisms differently. Students then apply engineering thinking to design and evaluate solutions that reduce the impact of environmental changes on living things.

Addresses SEEd standards 3.2.2, 3.2.4, 3.2.5 & 3.2.6



3rd - Unit 1: How can we design objects to balance and move in different ways?

Lesson Set 1: How can we design sculptures to balance and move in predictable ways?		
Lesson 1:	How do these sculptures balance and move?	5 days
Lesson 2:	How can we build a sculpture that will balance?	3 days
Lesson 3:	How can we make our sculpture more playful or puzzling?	3 days
Lesson 4:	How can we make our sculpture off-center and still balance?	3 days
Lesson 5:	How can the shape of the balance point and a little push help our sculpture stay up and move in a predictable way?	3 days
Lesson 6:	How can we design a sculpture to move in the way we want?	2 days
Lesson 7:	How can we apply our learning to a new model?	2 days

Lesson Set 2: How can we use magnets to design sculptures and devices that solve problems?		
Lesson 8:	How do the new magnetic sculptures move?	2 days
Lesson 9:	If we test two magnets, are there forces between them?	3 days
Lesson 10:	How does the strength of a magnet or where it's placed affect forces?	3 days
Lesson 11:	What happens if we change one magnet to a metal object?	1 day
Lesson 12:	How can we create and share a magnetic sculpture?	2 days
Lesson 13:	How can we use magnets to solve a problem?	3 days

UNDER CONSTRUCTION

3rd - Unit 2: Why do plants only grow well in certain places, and how can we protect them?

Lesson Set 1: How can we get fruit all year?		
Lesson 1:	How can we get fruits and vegetables all year?	_ days
Lesson 2:	How do we get fruits from plants?	_ days
Lesson 3:	How do the water needs of different plants affect where they can grow well?	_ days
Lesson 4:	How is temperature related to where fruit plants grow?	_ days
Lesson 5:	How can temperature and precipitation patterns help us predict where to grow plants?	_ days
Lesson 6:	How can we get apples, oranges, and bananas on the school menu all year?	_ days

Lesson Set 2: How can we use magnets to design sculptures and devices that solve problems?		
Lesson 7:	How can we protect fruit plants in hazardous weather?	_ days
Lesson 8:	How can weather hazards affect plants?	_ days
Lesson 9:	How do farmers and engineers protect plants from wind damage?	_ days
Lesson 10:	How well do our windbreak designs reduce the impact of wind on plants?	_ days
Lesson 11:	How and why do we compare design solutions before making decisions?	_ days
Lesson 12:	How can we choose solutions that protect plants from weather-related hazards?	_ days

UNDER CONSTRUCTION

3rd - Unit 3: Why do animals look and act the way they do?

Lesson Set 1: How do animals change over their lifetime?		
Lesson 1:	How do newborn and adult dogs look and act differently?	_ days
Lesson 2:	What is happening between being a newborn and being an adult?	_ days
Lesson 3:	What do adult canines do that puppies cannot do (and why)?	_ days
Lesson 4:	How do other animals change over their lifetime?	_ days

Lesson Set 2: How does inherited information and the environment influence the way animals look and act?		
Lesson 5:	How can we predict what a canine will look like?	_ days
Lesson 6:	Why can dogs do things they did not learn from their parents or people?	_ days
Lesson 7:	How does learning affect a dog's traits?	_ days
Lesson 8:	How can we explain why domesticated dogs look and act the way they do?	_ days
Lesson 9:	What causes wild canines to look and act the way they do?	_ days
Lesson 10:	Why do animals look and act the way they do?	_ days

UNDER CONSTRUCTION

3rd - Unit 4: Why do animals and plants live where they do and what should we do when it changes?

Lesson Set 1: Why do animals and plants live where they do and sometimes in groups?

Lesson 1:	Why does a manatee join a group of dolphins in the waters around Tampa Bay?	_ days
Lesson 2:	Where do manatees and dolphins live and what is it like there?	_ days
Lesson 3:	Do manatees and dolphins share the same waters all year?	_ days
Lesson 4:	Which other animals and plants live in these waters?	_ days
Lesson 5:	How can we figure out more about seagrass?	_ days
Lesson 6:	How does the seagrass get to be different?	_ days
Lesson 7:	Why do some animals live in groups?	_ days
Lesson 8:	Why did the manatee and dolphins form a group when they usually do not?	_ days

Lesson Set 2: What should we do when their habitats change?

Lesson 9:	Why are manatees struggling to survive if they are protected?	_ days
Lesson 10:	What should we do to make sure manatees have access to warm water?	_ days
Lesson 11:	What should we do to make sure manatees have seagrass and protection from boats?	_ days
Lesson 12:	How can we design solutions to protect manatees and their habitats?	_ days
Lesson 13:	How can we choose solutions that protect plants and animals from changes in their environment?	_ days