FAST TRACK C

We know that fitting effective science instruction into any school day can be challenging. That's why we've created additional Fast Track pacing options, allowing you to teach *Inspire Science* at a pace that best fits your schedule. The original Fast Track pacing (identified in the Teacher's Edition) provides an accelerated track for hitting core science content, utilizing *Inspire Science's* literacy components and other resources. Fast Track options A, B, and C offer accelerated pathways that incorporate the rich hands-on activities that come with *Inspire Science* as well as Page Keeley formative assessment probes. All Fast Tracks are designed to save time without compromising standards alignment.

GRADE 3 • Pacing Options

Pacing Options		Default Pacing	Fast Track	Fast Track A	Fast Track B	Fast Track C
Days of Instruction		**147.5 Days**	**89.5 Days**	**168 Days**	**86 Days**	**86 Days**
Time of Instruction per Day		**45 Minutes/Day**	**45 Minutes/Day**	**25-30 Minutes/Day**	**30-45 Minutes/Day**	**25-30 Minutes/Day**
Description		Utilizes every Inspire Science activity and resource as outlined in the Teacher's Edition, allowing for deep exploration of science topics	Employs literacy components and digital resources, skipping the Page Keeley formative assessment probes and hands-on activities	Accelerates coverage of core science concepts and includes the Page Keeley formative assessment probes, the full 5E instructional model for every lesson, hands-on activities, and recommended time-saving strategies		
Module 1: Motion and Forces	Module Opener	0.5 Day	0 Days	0 Days	0 Days	0 Days
	Lesson 1: Motion	8 Days	4 Days	10 Days	5 Days	5 Days
	Lesson 2: Forces Can Change Motion	8 Days	5.5 Days	10 Days	5 Days	5 Days
	Lesson 3: Simple Machines	7 Days	4 Days	8 Days	4 Days	4 Days
	Module Wrap-Up	0.5 Day	0.5 Day	1 Day	1 Day	1 Day
	Total	**24 Days**	**14 Days**	**29 Days**	**15 Days**	**15 Days**
Module 2: Electric and Magnetic Forces	Module Opener	0.5 Day	0 Days	0 Days	0 Days	0 Days
	Lesson 1: Electricity	6 Days	3 Days	10 Days	5 Days	5 Days
	Lesson 2: Magnets	7 Days	3.5 Days	10 Days	5 Days	5 Days
	Module Wrap-Up	0.5 Day	0.5 Day	1 Day	2 Days	2 Days
	Total	**14 Days**	**7 Days**	**21 Days**	**12 Days**	**12 Days**

Module 3: Weather and Climate	Module Opener	0.5 Day	0 Days	0 Days	0 Days	0 Days
	Lesson 1: Weather Changes	11 Days	6.5 Days	10 Days	5 Days	5 Days
	Lesson 2: Different Climates	8 Days	5.5 Days	8 Days	4 Days	4 Days
	Module Wrap-Up	0.5 Day	0.5 Day	1 Day	2 Days	2 Days
	Total	**20 Days**	**12.5 Days**	**19 Days**	**11 Days**	**11 Days**
Module 4: Parents and Offspring	Module Opener	0.5 Day	0 Day	0 Days	0 Days	0 Days
	Lesson 1: Life Cycles of Plants	7 Days	4.5 Days	8 Days	4 Days	4 Days
	Lesson 2: Life Cycles of Animals	8 Days	4.5 Days	9 Days	4 Days	4 Days
	Lesson 3: Inherited and Learned Traits	7 Days	4 Days	7 Days	4 Days	4 Days
	Module Wrap-Up	0.5 Day	0.5 Day	2 Days	1 Day	1 Day
	Total	**23 Days**	**13.5 Days**	**26 Days**	**13 Days**	**13 Days**
Module 5: Survival	Module Opener	0.5 Day	0 Day	0 Days	0 Days	0 Days
	Lesson 1: Animal Group Survival	7 Days	4.5 Days	8 Days	4 Days	4 Days
	Lesson 2: Adaptations	9 Days	3.5 Days	11 Days	5 Days	5 Days
	Lesson 3: Natural Selection	7 Days	4 Days	9 Days	4 Days	4 Days
	Module Wrap-Up	1 Day	1 Day	1 Day	1 Day	1 Day
	Total	**24.5 Days**	**13 Days**	**29 Days**	**14 Days**	**14 Days**
Module 6: Changes in Ecosystems	Module Opener	0.5 Day	0 Days	0 Days	0 Days	0 Days
	Lesson 1: Changes Affect Living Things	9 Days	6.5 Days	8 Days	4 Days	4 Days
	Lesson 2: Natural Hazards Change Environments	9 Days	6.5 Days	11 Days	4 Days	4 Days
	Lesson 3: Humans and Natural Hazards	7 Days	4.5 Days	6 Days	3 Days	3 Days
	Module Wrap-Up	1 Day	1 Day	1 Day	1 Day	1 Day
	Total	**26.5 Days**	**18.5 Days**	**26 Days**	**12 Days**	**12 Days**

Module 7: Learn From the Past	Module Opener	0.5 Day	0 Day	0 Days	0 Days	0 Days
	Lesson 1: Things from Long Ago	7 Days	4.5 Days	7 Days	3 Days	3 Days
	Lesson 2: Fossils	7 Days	5.5 Days	10 Days	5 Days	5 Days
	Module Wrap-Up	1 Day	1 Day	1 Day	1 Day	1 Day
	Total	**15.5 Days**	**11 Days**	**18 Days**	**9 Days**	**9 Days**
	TOTAL DAYS	**147.5 Days**	**89.5 Days**	**168 Days**	**86 Days**	**86 Days**

Module 1: Motion and Forces

3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] [Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.]

3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. [Clarification Statement: Examples of motion with a predictable pattern could include a child swinging in a swing, a ball rolling back and forth in a bowl, and two children on a see-saw.] [Assessment Boundary: Assessment does not include technical terms such as period and frequency.]

Lesson 1: Motion

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: How Far Did the Snail Travel?
Pacing: 15 min
Be a Scientist Notebook, p. 4

Time Saver Strategy
Employ the Response Cards strategy. After students have individually responded to the probe, have them hold up a response card to indicate the answer they chose. Address any common misconceptions in subsequent instruction.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 5
Boy Playing Basketball Video (0:18)

Time Saver Strategy
Have students watch the video and have them answer the first question on p. 5 of the Be a Scientist Notebook. Instead of having students

	individually record the questions they have, write students' questions on a class chart.

DAY 2

Explore

Inquiry Activity: An Object's Position
Pacing: 30 min
Be a Scientist Notebook, pp. 7-8

DAY 3

Explain

Position
Pacing: 20 min
Be a Scientist Notebook, p. 9
Science Handbook, pp. 220-221

Things Move
Pacing: 10 min
Be a Scientist Notebook, p. 10
Things Move Video (1:06)

DAY 4

Explain

Motion
Pacing: 15 min
Be a Scientist Notebook, pp. 10, VKV305
Science Handbook, pp. 222-223

Measuring Motion
Pacing: 15 min
Be a Scientist Notebook, p. 12
Science Handbook, pp. 224-225

Time Saver Strategy
Discuss Question 8 on p. 12 of the Be a Scientist Notebook as a class, and then have students record their answers for Question 9.

DAY 5

Evaluate

Motion Models
Pacing: 30 min
Be a Scientist Notebook, pp. 16-18
Science Handbook, p. 223

Time Saver Strategy
Have students draw models of the two different patterns of motion during class time. Students may construct a three-dimensional version of their models outside of normal class time, if desired.

Lesson 2: Forces Can Change Motion

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Golf Ball
Pacing: 15 min
Be a Scientist Notebook, p. 20

Time Saver Strategy
Employ the Our Best Thinking So Far strategy. Keep a record of the class's ideas related to the probe. Refer back to the idea list from time to time to reevaluate and add ideas, and to see how students' ideas are evolving over time.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 21

DAY 2

Explore

Inquiry Activity: Force Affects the Way Objects Move
Pacing: 30 min
Be a Scientist Notebook, pp. 23-24

DAY 3

Explain

Force
Pacing: 10 min
Be a Scientist Notebook, p. 25
Force Video (0:39)

Forces and Changes in Motion
Pacing: 20 min
Be a Scientist Notebook, p. 25
Science Handbook, pp. 226-227

DAY 4

Explain

Changing Forces
Pacing: 10 min
Be a Scientist Notebook, p. 26
Changing Forces Simulation

Inquiry Activity: Balanced Forces
Pacing: 20 min
Be a Scientist Notebook, pp. 27-28

DAY 5

Evaluate

Building Demolition
Pacing: 30 min
Be a Scientist Notebook, pp. 34-35

Time Saver Strategy
Help students write a hypothesis. For Step 1, have small groups verbally plan their procedure in place of recording it on a separate piece of paper.

Lesson 3: Simple Machines

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Is It a Simple Machine?
Pacing: 15 min
Be a Scientist Notebook, p. 36

Time Saver Strategy
Employ the Card Sort strategy. Small groups are given a set of cut-out cards from the printed probe. Groups sort the cards into examples and non-examples of the concept. Card sorts engage students in talking through their ideas and formulating explanations.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 37

DAY 2

Explore

Inquiry Activity: Simple Machines Lift Objects
Pacing: 30 min
Be a Scientist Notebook, pp. 37-38

DAY 3

Explain

Work and Simple Machines
Pacing: 10 min
Be a Scientist Notebook, p. 41
Work and Simple Machines Video (0:35)

Work and Machines
Pacing: 20 min
Be a Scientist Notebook, pp. 41-42
Science Handbook, p. 236

DAY 4

Evaluate

Test a Simple Machine
Pacing: 30 min
Be a Scientist Notebook, pp. 48-49
Science Handbook, pp. 10-11

Time Saver Strategy
Help students make a prediction. Post a sample table that students may reference for Step 2.

Module Wrap-Up: Observe Motion on a Playground

Observe Motion on a Playground
Pacing: 30 min
Be a Scientist Notebook, pp. 50-21

Module 2: Electric and Magnetic Forces

3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. [Clarification Statement: Examples of an electric force could include the force on hair from an electrically charged balloon and the electrical forces between a charged rod and pieces of paper; examples of a magnetic force could include the force between two permanent magnets, the force between an electromagnet and steel paperclips, and the force exerted by one magnet versus the force exerted by two magnets. Examples of cause and effect relationships could include how the distance between objects affects strength of the force and how the orientation of magnets affects the direction of the magnetic force.] [Assessment Boundary: Assessment is limited to forces produced by objects that can be manipulated by students, and electrical interactions are limited to static electricity.]

3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets. [Clarification Statement: Examples of problems could include constructing a latch to keep a door shut and creating a device to keep two moving objects from touching each other.]

Lesson 1: Electricity

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Salma's Hair
Pacing: 15 min
Be a Scientist Notebook, p. 54

Time Saver Strategy
Employ the Think-Pair-Share strategy. After students have individually responded to the probe, have them pair up. Have pairs discuss and support their answers and explanations. Students then share in a small group or engage in a whole-class discussion.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 55

DAY 2

Explore

Inquiry Activity: Charged or Uncharged Balloons
Pacing: 30 min

Be a Scientist Notebook, pp. 57-58

DAY 3

Explain

Static Electricity
Pacing: 5 min
Be a Scientist Notebook, p. 59

Static Electricity Video (0:51)

Electrical Energy
Pacing: 20 min
Be a Scientist Notebook, pp. 59-60
Science Handbook, pp. 254-255

DAY 4

Explain

Inquiry Activity: Eliminate Static Electricity
Pacing: 30 min
Be a Scientist Notebook, pp. 63-64

DAY 5

Evaluate

Teach Static Electricity
Pacing: 30 min

Be a Scientist Notebook, pp. 67-68

Lesson 2: Magnets

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Magnet and Paper Clip
Pacing: 15 min
Be a Scientist Notebook, p. 70

Time Saver Strategy
Employ the Partner Speak strategy. After students have individually responded to the probe, have them pair up. Have pairs discuss their

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 71

explanations. Students should carefully listen to their partner's explanation and report back to the class what their partners said.

DAY 2

Explore

Inquiry Activity: Investigate with Magnets
Pacing: 30 min
Be a Scientist Notebook, p. 73

DAY 3

Explain

Exploring Magnets
Pacing: 25 min
Be a Scientist Notebook, p. 76
Exploring Magnets Video (1:39)

DAY 4

Explain

Inquiry Activity: Distance and the Pull of a Magnet
Pacing: 15 min
Be a Scientist Notebook, pp. 76-77

Time Saver Strategy
Help students write a hypothesis. Create a table to record observations as a class.

Inquiry Activity: Magnetic Forces Pass Through Objects
Pacing: 15 min
Be a Scientist Notebook, p. 78

Time Saver Strategy
Help students ask a question that will be answered in the investigation. Discuss Question 1 on p. 78 of the Be a Scientist Notebook as a class instead of having students individually record their answers.

DAY 5

Evaluate

Become a Levitation Magician
Pacing: 30 min
Be a Scientist Notebook, pp. 83-84

Module Wrap-Up: Solve a Simple Design Problem

DAY 1

Pacing: 30 min
Be a Scientist Notebook, pp. 86-87

Time Saver Strategy
Begin Performance Project, including having small groups brainstorm design solutions. Provide easy-to-read resources, such as one-page summary sheets printed from trusted Internet sites or a few bookmarked pages in a nonfiction book, that students can use to research locking mechanisms.

DAY 2

Pacing: 30 min
Be a Scientist Notebook, pp. 86-87

Time Saver Strategy
Finish Performance Project, including having small groups sketch and discuss their design. If time allows, have students determine how they could improve their solution on p. 87 of the Be a Scientist Notebook.

Module 3: Weather and Climate

3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. [Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.] [Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.]

3-ESS2-2. Obtain and combine information to describe climates in different regions of the world.

Lesson 1: Weather Changes

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: What Happened to the Puddle?
Pacing: 15 min

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 91

Be a Scientist Notebook, p. 90

Time Saver Strategy
Employ the Draw Your Thinking Strategy. Students write their answers on the probe, and draw a picture to explain their thinking. Call on students to read the answers from papers they find.

DAY 2

Explore

Inquiry Activity: Air is Around You
Pacing: 20 min
Be a Scientist Notebook, pp. 93-94

Explain

Weather Report
Pacing: 5 min
Be a Scientist Notebook, p. 95
Weather Report Video (1:01)

DAY 3

Explain

Read a Weather Report
Pacing: 15 min
Be a Scientist Notebook, p. 96

Inquiry Activity: Predict Weather
Pacing: 15 min
Be a Scientist Notebook, pp. 97-98

DAY 4

Elaborate

Inquiry Activity: Write a Script
Pacing: 30 min
Be a Scientist Notebook, pp. 101-102
Science Handbook, pp. 168-173
Weather Events Digital Interactive

DAY 5

Evaluate

Become a Meteorologist
Pacing: 30 min

Be a Scientist Notebook, pp. 103-104

Lesson 2: Different Climates

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Temperature Drop
Pacing: 15 min
Be a Scientist Notebook, p. 106

Time Saver Strategy
Employ the Argumentation Lines strategy. Students write their answers on the probe, and then form two lines, one for each answer choice. Students face each other to engage in an argumentation session. Start with one student sharing his or her explanation, and other students can agree or present counterarguments. If a student's argument is compelling enough for another student to change his or her answer choice, that second student may change lines.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 107

DAY 2

Explore

Inquiry Activity: Compare Weather Patterns
Pacing: 20 min
Be a Scientist Notebook, pp. 109-110

Time Saver Strategy
Help students ask a question about the investigation. Model for students how to record data in the first row of the table on p. 109 in the Be a Scientist Notebook, and then have students complete the table.

Explain

Climate
Pacing: 20 min
Be a Scientist Notebook, p. 111
Science Handbook, pp. 164-165

DAY 3

Explain **Factors That Affect Climate** **Pacing:** 15 min Be a Scientist Notebook, p. 112 Science Handbook, pp. 166-167	**Comparing Data** **Pacing:** 10 min Be a Scientist Notebook, pp. 114-115 Comparing Data Simulation

DAY 4

Evaluate

Create a Climate Travel Poster
Pacing: 30 min
Be a Scientist Notebook, pp. 119-120

Module Wrap-Up: Five-Day Forecast

DAY 1

Pacing: 30 min
Be a Scientist Notebook, pp. 122-123

Time Saver Strategy
Begin Performance Project, including having small groups research the weather and climate of their favorite city. Provide easy-to-read resources, such as one-page summary sheets printed from trusted Internet sites or a few bookmarked pages in a nonfiction book, that students can use to research weather and climate.

DAY 2

Pacing: 30 min
Be a Scientist Notebook, pp. 122-123

Time Saver Strategy
Finish Performance Project, including having small groups forecast the weather for their chosen city. It time allows, have groups share their forecasts.

Module 4: Parents and Offspring

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. [Clarification Statement: Changes organisms go through during their life form a pattern.] [Assessment Boundary: Assessment of plant life cycles is limited to those of flowering plants. Assessment does not include details of human reproduction.]

3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. [Clarification Statement: Patterns are the similarities and differences in traits shared between offspring and their parents, or among siblings. Emphasis is on organisms other than humans.] [Assessment Boundary: Assessment does not include genetic mechanisms of inheritance and prediction of traits. Assessment is limited to non-human examples.]

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. [Clarification Statement: Examples of the environment affecting a trait could include normally tall plants grown with insufficient water are stunted; and, a pet dog that is given too much food and little exercise may become overweight.]

Lesson 1: Life Cycles of Plants

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Life Cycles
Pacing: 15 min
Be a Scientist Notebook, p. 126

Time Saver Strategy
Employ the Fish Bowl strategy. Have students respond to probe and quickly scan through their answer choices. Select a sample of students with diverse thinking. Students will sit in designated area to conduct a think-aloud discussion, and other students will gather around to be careful listeners who might take notes with questions they may have or ideas they have to contribute.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 127
Seed Growing Video (0:29)

DAY 2

Explore

Explain

Inquiry Activity: Parts of a Seed

Inquiry Activity: Seed Growth **Pacing:** 15 min Be a Scientist Notebook, pp. 129-130 **Time Saver Strategy** Students should spend this time setting up the investigation by placing the bean seeds and paper towels in the sandwich bags. They will return to this investigation over the next several days and spend a few minutes each day observing the seeds. The time it takes the seeds to germinate depends on the type of plant.	**Pacing:** 15 min Be a Scientist Notebook, p. 132
DAY 3	
Explain **Reproducing with Flowers** **Pacing:** 15 min Be a Scientist Notebook, p. 133 Science Handbook, p. 56	**Cones and Spores** **Pacing:** 15 min Be a Scientist Notebook, p. 136 Science Handbook, pp. 57, 59 **Time Saver Strategy** Have students complete Questions 12-13 on p. 136 in the Be a Scientist Notebook, and then discuss Question 14 as a class.
DAY 4	
Evaluate **Plant Life Cycle Model** **Pacing:** 30 min Be a Scientist Notebook, pp. 138-139 Science Handbook, p. 56 Seed Growing Video (0:29)	
Lesson 2: Life Cycles of Animals	
DAY 1	
Access Lesson Readiness **Page Keeley Science Probe: Life Cycle Stages**	Engage **Science in Our World**

Pacing: 15 min
Be a Scientist Notebook, p. 140

Time Saver Strategy
Employ the Traffic Lighting Cards strategy. After students have individually responded to the probe, have them hold up a color response card to indicate each student's level of understanding of the concept.

Pacing: 10 min
Be a Scientist Notebook, p. 141

DAY 2

Explore

Inquiry Activity: Hatching Brine Shrimp
Pacing: 20 min
Be a Scientist Notebook, pp. 143-144

Explain

Life Cycles
Pacing: 5 min
Be a Scientist Notebook, p. 145
Life Cycles Video (0:44)

DAY 3

Explain

Butterfly and Salamander Life Cycles
Pacing: 10 min
Be a Scientist Notebook, p. 146
Butterfly and Salamander Life Cycles Digital Interactive

Life Cycles – Reptiles, Fish, and Birds
Pacing: 10 min
Be a Scientist Notebook, p. 147
Science Handbook, p. 73

Time Saver Strategy
Discuss Question 8 on p. 147 in the Be a Scientist Notebook as a class, and then have students complete Question 9.

Life Cycles - Mammals
Pacing: 10 min
Be a Scientist Notebook, p. 148
Science Handbook, p. 74

Time Saver Strategy
Have students complete Questions 12-13 on p. 148 in the Be a Scientist Notebook, and then discuss Question 14 as a class.

DAY 4

Evaluate

Duck-Billed Platypus Life Cycle Model
Pacing: 30 min
Be a Scientist Notebook, pp. 152-154
Science Handbook, p. 74

Lesson 3: Inherited and Learned Traits

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Sadie's Poodle
Pacing: 15 min
Be a Scientist Notebook, p. 156

Time Saver Strategy
Employ the Fingers Under Chin strategy. Observe students as they anonymously indicate their answers to the probe with their finger or fingers under their chins.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 157

DAY 2

Explore

Inquiry Activity: Graphing Inherited Traits
Pacing: 15 min

Be a Scientist Notebook, pp. 159-160

Explain

Inherited Traits
Pacing: 10 min
Be a Scientist Notebook, p. 161

Inherited Traits Video (1:48)

DAY 3

Explain

Inherited Physical Traits and Instincts
Pacing: 15 min
Be a Scientist Notebook, p. 161
Science Handbook, p. 76

Learned and Environmental Traits
Pacing: 15 min
Be a Scientist Notebook, p. 164
Science Handbook, p. 77

DAY 4

Evaluate

Mouse Fur Color Inheritance
Pacing: 30 min

Be a Scientist Notebook, pp. 166

Module Wrap-Up: Comparing Life Cycles

Pacing: 30 min
Be a Scientist Notebook, pp. 168-169

Time Saver Strategy
Provide easy-to-read resources, such as one-page summary sheets printed from trusted Internet sites or a few bookmarked pages in a nonfiction book, that students can use to research the life cycle of a cicada. To save time, have students compare their diagram of a cicada's life cycle to a diagram of an animal's life cycle that is posted for the class to view, instead of having students draw a second animal's life cycle. Omit the last question on p. 169 in the Be a Scientist Notebook.

Module 5: Survival

3-LS2-1. Construct an argument that some animals form groups that help members survive.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. [Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.]

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. [Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.]

Lesson 1: Animal Group Survival

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Animal Groups
Pacing: 15 min
Be a Scientist Notebook, p. 172

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 173
Animal Groups Digital Interactive

Time Saver Strategy
Employ the Claim Cards strategy. Pass out a cut-out card from the printed probe so that each student has one card. Students sort the cards into examples and non-examples of the concept. As students sort the cards, they state their claim and provide evidence. The class then votes whether the claim is true, and the card is placed on the side on the claim cards chart.

DAY 2

Explore

Inquiry Activity: Ant Workers
Pacing: 30 min
Be a Scientist Notebook, pp. 175-176

Time Saver Strategy
Help students make a prediction. Discuss Questions 1-3 on p. 176 in the Be a Scientist Notebook as a class.

DAY 3

Explain

Animal Groups
Pacing: 15 min
Be a Scientist Notebook, p. 177
Animal Groups Video (3:07)

Animal Groups
Pacing: 10 min
Be a Scientist Notebook, p. 178
Animal Groups Science File

DAY 4

Evaluate

Animal Group Explanation
Pacing: 30 min
Be a Scientist Notebook, p. 184

Animal Groups Digital Interactive

Lesson 2: Adaptations

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Adaptations
Pacing: 15 min
Be a Scientist Notebook, p. 186

Time Saver Strategy
Employ the Volleyball Not Ping Pong strategy. After students have individually responded to the probe, have them sit in a circle for discussion. After one student answers a question, he or she passes a ball to another student, who will respond to the same question or add a new idea. Students build on the responses of others to create a rich conversation.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 187
Different Birds Digital Interactive

DAY 2

Explore

Inquiry Activity: Bird Beak Adaptations
Pacing: 20 min
Be a Scientist Notebook, pp. 189-190

Explain

Animals in Their Own Environment
Pacing: 5 min
Be a Scientist Notebook, p. 191

Animals in Their Own Environment Video (1:20)

DAY 3

Explain

Adaptations
Pacing: 15 min
Be a Scientist Notebook, p. 191
Science Handbook, pp. 94-95

Desert Adaptations
Pacing: 15 min
Be a Scientist Notebook, p. 193
Science Handbook, pp. 96-97

DAY 4

Explain

Forest Adaptations
Pacing: 15 min
Be a Scientist Notebook, p. 194

Science Handbook, pp. 98-99

Ocean and Wetland Adaptations
Pacing: 15 min
Be a Scientist Notebook, p. 195
Science Handbook, pp. 101-102

Time Saver Strategy
Discuss Questions 11-12 as a class. Then have students complete Question 13 on p. 147 in the Be a Scientist Notebook. Omit Question 10.

DAY 5

Evaluate

Design a Bird
Pacing: 30 min
Be a Scientist Notebook, pp. 200-201

Lesson 3: Natural Selection

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Will the Animals Survive?
Pacing: 15 min
Be a Scientist Notebook, p. 202

Time Saver Strategy
Employ the Commit and Toss Strategy. Students write their answers on the probe, and then crumple the paper into a ball and toss it around the room. Call on students to read the answers from papers they find.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 203
Variation of Traits Video (1:07)

DAY 2

Explore

Inquiry Activity: Giraffe Feeding
Pacing: 30 min

Be a Scientist Notebook, pp. 205-206

DAY 3

Explain

Trait Variations and Survival
Pacing: 15 min
Be a Scientist Notebook, p. 207
Trait Variations and Survival Science File

Peppered Moths
Pacing: 15 min
Be a Scientist Notebook, pp. 209-210
Peppered Moths Science File

DAY 4

Evaluate

Galápagos Finches
Pacing: 30 min
Be a Scientist Notebook, pp. 215-217

 Variation of Traits Video (1:07)

Module Wrap-Up: Honeybee Research

Pacing: 30 min
Be a Scientist Notebook, pp. 218-219

 **Time Saver Strategy**
Provide easy-to-read resources, such as one-page summary sheets printed from trusted Internet sites or a few bookmarked pages in a nonfiction book, that students can use to research honeybees. Have students conduct their research and take notes during class time. Students may create a poster, brochure, news article, or journal entry to present their findings outside of normal class time, if desired.

Module 6: Changes in Ecosystems

3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change. [Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.] [Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.]

3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. [Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.]

Lesson 1: Changes Affect Living Things

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Changes in Ecosystems
Pacing: 15 min
Be a Scientist Notebook, p. 222

Time Saver Strategy
Employ the Our Best Thinking So Far strategy. Keep a record of the class's ideas related to the probe. Refer back to the idea list from time to time to reevaluate and add ideas, and to see how students' ideas are evolving over time.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 223

DAY 2

Explore

Inquiry Activity: Acid Rain
Pacing: 20 min
Be a Scientist Notebook, pp. 225-226

Explain

Patterns for Survival
Pacing: 10 min
Be a Scientist Notebook, p. 227
Patterns for Survival Video (2:16)

DAY 3

Explain

Changing Ecosystems
Pacing: 15 min
Be a Scientist Notebook, p. 229
Changing Ecosystems Simulation

Environments Change
Pacing: 15 min
Be a Scientist Notebook, p. 230
Environments Change Digital Interactive

Time Saver Strategy
Discuss Questions 8-9 on p. 229 in the Be a Scientist Notebook as a class, and then have students complete Question 10.

DAY 4

Evaluate

Beaver Dam Pros and Cons
Pacing: 30 min

Be a Scientist Notebook, p. 234

Lesson 2: Natural Hazards Change Environments

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Habitat Hazards
Pacing: 15 min
Be a Scientist Notebook, p. 236

Time Saver Strategy
Employ the Four Corners strategy. Students write their answers on the probe, and then stand in a corner of the room that indicates their answer choice. Students in each corner engage in discussion to construct a common explanation of why they chose that answer. Each group then shares their explanation and engages in argumentation, providing evidence.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 237
Forest Fire Video (0:14)

DAY 2

Explore

Inquiry Activity: Floods Affect Plants
Pacing: 20 min
Be a Scientist Notebook, pp. 239-240

Explain

Environmental Changes
Pacing: 10 min
Be a Scientist Notebook, p. 241
Environmental Changes Video (1:31)

DAY 3

Explain

Changing Ecosystem
Pacing: 30 min
Be a Scientist Notebook, p. 248
Changing Ecosystem Simulation

DAY 4

Evaluate

A Wildfire Solution
Pacing: 30 min
Be a Scientist Notebook, p. 250

Lesson 3: Humans and Natural Hazards

DAY 1

Access Lesson Readiness

Page Keeley Science Probe: Natural Hazards
Pacing: 15 min
Be a Scientist Notebook, p. 252

Time Saver Strategy
Employ the I Used to Think, But Now I Know strategy. Students note what they used to think when they first responded to the probe, and later they note whether and how their thinking has changed.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 253
Rain Video (0:31)

DAY 2

Explore

Inquiry Activity: Building Sugar Structures
Pacing: 15 min
Be a Scientist Notebook, pp. 255-256

Explain

Scientists Study Natural Hazards
Pacing: 15 min
Be a Scientist Notebook, p. 257

Time Saver Strategy Help students make a prediction. Complete the investigation as a class, modeling for students Steps 1-5 for students and completing the table on p. 255 in the Be a Scientist Notebook together. Discuss Questions 1-2 as a class.	*Scientists Study Natural Hazards* Science File

DAY 3

Evaluate

Building Weatherproof Structures
Pacing: 30 min

Be a Scientist Notebook, pp. 263-265

Module Wrap-Up: Landscaping: The Effects of Flooding on Buildings and Plants

Pacing: 30 min
Be a Scientist Notebook, pp. 267-269

Time Saver Strategy
Discuss ways structural engineers design dams to make them safe. Complete Step 1 for small groups ahead of time. Have students complete Step 6 if time allows.

Module 7: Learn From the Past

3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. [Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.] [Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.]

Lesson 1: Things from Long Ago

DAY 1

Assess Lesson Readiness

Page Keeley Science Probe: Extinct Today
Pacing: 15 min
Be a Scientist Notebook, p. 272

Time Saver Strategy
Employ the Draw Your Thinking Strategy. Students write their answers on the probe, and draw a picture to explain their thinking. Call on students to read the answers from papers they find.

Engage

Science in Our World
Pacing: 10 min
Be a Scientist Notebook, p. 273

DAY 2

Explore

Inquiry Activity: Model of Survival
Pacing: 20 min
Be a Scientist Notebook, pp. 275-276

Time Saver Strategy
Help students ask a question to guide the investigation. Complete Steps 1-2 ahead of time for students. Discuss Questions 1 and 4 on p. 276 in the Be a Scientist Notebook as a class. Have students complete Questions 2-3 on their own.

Explain

Extinct Animals
Pacing: 10 min
Be a Scientist Notebook, p. 278
Extinct Animals Digital Interactive

DAY 3

Evaluate

Research an Extinct Animal
Pacing: 30 min

Be a Scientist Notebook, pp. 282-283

Lesson 2: Fossils

DAY 1

Assess Lesson Readiness

Engage

Page Keeley Science Probe: Fossil Evidence **Pacing:** 15 min Be a Scientist Notebook, p. 284 **Time Saver Strategy** Employ the Card Sort strategy. Small groups are given a set of cut-out cards from the printed probe. Groups sort the cards into examples and non-examples of the concept. Card sorts engage students in talking through their ideas and formulating explanations.	**Science in Our World** **Pacing:** 10 min Be a Scientist Notebook, p. 285

DAY 2

Explore

Inquiry Activity: Layers and Fossils
Pacing: 30 min
Be a Scientist Notebook, p. 287

DAY 3

Explain **Fossils** **Pacing:** 15 min Be a Scientist Notebook, p. 288 Science Handbook, pp. 174-175	**What Fossils Tell Us** **Pacing:** 15 min Be a Scientist Notebook, p. 290 Science Handbook, pp. 176-177	**Have more time?** **Fossils from Long Ago or Skeletons of Today** **Pacing:** 10 min Be a Scientist Notebook, p. 292 ***Fossils from Long Ago or Skeletons of Today* Science File**

DAY 4

Explain **Learning from Fossils** **Pacing:** 10 min Be a Scientist Notebook, p. 292 *Learning from Fossils* Science File	**Fossil Dig Simulation** **Pacing:** 20 min Be a Scientist Notebook, p. 293 Fossil Dig Simulation

DAY 5

Evaluate

Tell about Animals and Environments

Pacing: 30 min

Be a Scientist Notebook, p. 298

Time Saver Strategy

Save time by having students describe only two or three fossils and their environments. Provide assistance with answering Questions 2-3 on p. 298 in the Be a Scientist Notebook, if needed.

Module Wrap-Up: Looking Back

Pacing: 30 min

Be a Scientist Notebook, pp. 300-301

Time Saver Strategy

Provide easy-to-read resources, such as one-page summary sheets printed from trusted Internet sites or a few bookmarked pages in a nonfiction book, that students can use to research chemical and physical change. Provide assistance with drafting students' explanations and models, if needed.