

1st Grade Science Curriculum Guide

Welcome to the 1st Grade Science Scope and Sequence Curriculum Guide. Elevate Science is our adopted textbook and is available in both a consumable workbook and digitally. The Elevate platform is designed to empower students to become more self-directed, curious, and accountable by implementing a 3-dimensional instructional model. This model aligns with the NGSS framework.

In the Table of Contents and throughout each topic in the Teacher's Manual, there are digital resources, leveled readers and varied suggestions to support your teaching.

Supplemental Resources have been provided through our district apps to ensure a deeper understanding of the content and scaffold learning. District used Apps included in this document are Science A-Z, Vocabulary A-Z, Nearpod, Discovery Education, and NewsELA.

Grade 1 Science Year at a Glance

Topic 1-PS Sound

Topic 6-LS Parents and Offspring

Topic 2-PS Light

Topic 3-ES Sky and Earth

Topic 4-ES Weather and Seasons

Topic 5-LS Living Things

*Topic 6 aligns with HMH Module 3: Amazing Animals

*Topic 5 aligns with HMH Module 9: Grow, Plants, Grow!

Topic 1- Physical Science - Sound

Essential Question: What happens when objects vibrate?

Lesson 1 Describe Sound

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.]

K-2. Engineering Design

Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Lesson 2: Make Sound

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.]

Lesson 3: Uses of Sound

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. * [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drumbeats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.]

K-2. Engineering Design

Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Performance-based Assessment

1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate. [Clarification Statement: Examples of vibrating materials that make sound could include tuning forks and plucking a stretched string. Examples of how sound can make matter vibrate could include holding a piece of paper near a speaker making sound and holding an object near a vibrating tuning fork.]

Vocabulary: vibrate, pitch, volume, percussion, communicate.	Science and Engineering Practices (SEP) SEP.2 Developing and Using Models SEP.3 Planning and Carrying Out Investigations SEP.6 Constructing Explanations and Designing Solutions	Disciplinary Core Ideas(DCI) PS4.A Wave Properties: understanding that sounds can make matter vibrate and vibrating matter can make sounds PS4.C Information Technologies and Instrumentation: recognizing that people use devices to send and receive information	Crosscutting Concepts(CCC) CCC.6 Structure and Function: recognizing that events have causes that generate observable patterns
<u>ESSENTIAL LESSONS:</u> * Quest Kick-Off - Sending Sound Messages, p. 2* (watch video) <u>Lesson 1 - Students will describe sound.</u> <u>Connect:</u> Jumpstart Discovery, p. 6, 5 min. <u>Investigate:</u> uInvestigate Lab, p. 7, - How does size affect sound? 15 min. Lesson 1, pp.8-9, 15 min. <u>Synthesize:</u> Lesson 1, pp. 8-9, (watch video) Assessment p.9, Quest Check-In -Sounds of the World, p. 10 <u>Lesson 2 - Students will vibrate objects to make sounds</u> <u>Connect:</u> Jumpstart Discover, p. 12, 15 min. (watch video) <u>Investigate:</u> uInvestigate Lab, p. 13, How can you see sound? 20 min., <u>Synthesize:</u> Length and Sound - Lesson 2, pp. 14-17, 30 min. <u>Demonstrate:</u> Assessment, p.17, Quest Check-In Lab, How can instruments talk, 30 min., pp. 18-19 <u>Lesson 3 -Identify how people use sounds</u> <u>Connect:</u> Jumpstart Discovery, p. 20, 15 min. (watch video) <u>Synthesize:</u> Lesson 3, p. 22-23, Sounds to Communicate, 20 min., <u>Demonstrate:</u> Enrichment Activity Assessment p. 24, STEM Quest Check-In Lab, p. 24-25, 25 min., How can an instrument send a secret? Assessment, pp. 30-35 * Quest Findings - Sending Sound Messages, p. 28			<u>DISCRETIONARY LESSONS:</u> <u>Lesson 1</u> - uConnect Lab - How can a ruler make a sound, pp. 4-5 -Vocabulary App. p.6 -The Sound of Sounds, Enrichment Activity - Extreme Science, STEM Math Connection, p.11 <u>Lesson 2</u> - Vocabulary App. p.12 - Investigate - Teach with Movement, p. 14 - Quest Connection, Enrichment Activity <u>Lesson 3</u> - Vocabulary App. p.20 - uInvestigate Lab, What does that sound say? p. 21, - uEngineer It!, p. 26-27

Topic 2- Physical Science - Light

Essential Question: How can I use light?

Lesson 1: Observe Light

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-2. Make observations to construct an evidence-based account that objects can be seen only when illuminated. [Clarification Statement: Examples of observations could include those made in a completely dark room, a pinhole box, and a video of a cave explorer with a flashlight. Illumination could be from an external light source or by an object giving off its own light.]

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

Lesson 2: Light and Matter

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

The section entitled "Disciplinary Core Ideas" is reproduced verbatim from A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas. Integrated and reprinted with permission from the National Academy of Sciences.

K-2. Engineering Design

Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Lesson 3: Uses of Light

1.Waves: Light and Sound

Students who demonstrate understanding can:

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance. * [Clarification Statement: Examples of devices could include a light source to send signals, paper cup and string "telephones," and a pattern of drum beats.] [Assessment Boundary: Assessment does not include technological details for how communication devices work.]

K-2. Engineering Design

Students who demonstrate understanding can:

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

Performance-based Assessment

1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light. [Clarification Statement: Examples of materials could include those that are transparent (such as clear plastic), translucent (such as wax paper), opaque (such as cardboard), and reflective (such as a mirror).] [Assessment Boundary: Assessment does not include the speed of light.]

Vocabulary: light, shadow, matter, opaque, transparent, translucent, reflect, communicate	Science and Engineering Practices(SEP) SEP.3 Planning and Carrying Out Investigations SEP.6 Constructing Explanations and Designing Solutions	Disciplinary Core Ideas(DCI) PS4.B Electromagnetic Radiation: recognizing that objects can be seen only when light illuminates them. PS4.C Information Technologies and Instrumentation: understanding that devices are used to send and receive information.	Crosscutting Concepts(CCC) CCC.2 <u>Cause and Effect:</u> learning that events have causes that generate observable patterns.
<u>ESSENTIAL LESSONS:</u> * STEM Quest Kick-Off – Help Send a Message, p. 38* <u>Lesson 1 –Observe that light is needed to see objects. Identify objects that give off light.</u> <u>Connect:</u> Jumpstart Discovery, Lesson 1, p. 42, 15 min., (watch video) <u>Investigate:</u> uInvestigate Lab, p. 43, What happens when an object blocks light? 15 min., <u>Synthesize:</u> Lesson 1 pp. 44-46, 20 min., Assessment p. 46, Quest Check-In, Give off light, p. 47, 10 min., <u>Lesson 2 –Describe how light interacts with different materials</u> <u>Connect:</u> Jumpstart Discovery, p. 48, 15 min (watch video) <u>Investigate:</u> uInvestigate Lab, p. 49, How do materials affect light? 20 min., <u>Synthesize:</u> Lesson 2, p. 50-53, 20 min., Assessment p. 53, Quest Check-In, Materials for a light signal, p. 54, 15 min. <u>Lesson 3 –Explain and Identify how people use light to communicate with others that are far away</u> <u>Connect:</u> Jumpstart Discovery, p. 58, 15 min., (watch video) <u>Investigate:</u> uInvestigate Lab, p. 59, How can you use light to see? 20 min., <u>Synthesize:</u> Lesson 3, pp. 60-63, 30 min. <u>Demonstrate:</u> Assessment p. 63, STEM Quest Check-In Lab, pp. 64-65, 30 min., How can you send secret messages? Assessment, pp. 68-72 * Quest Findings – Help Send a Message, p. 66 *			<u>DISCRETIONARY LESSONS:</u> <u>Lesson 1</u> - Vocabulary App. p. 42 - Interactivity, Light Helps Us See, p. 44 <u>Lesson 2</u> - Vocabulary App. p.48 - Solve it with Science, STEM Math Connection, p. 55 - uEngineer It!, pp. 56-57 <u>Lesson 3</u> - Vocabulary App. p.58 - Interactivity, Enrichment Activity, p. 61 - Quest Connection - Career Connection, p. 67

Topic 3 – Earth Science – Sky and Earth

Essential Question: What objects are in the sky, and how do they move?

Lesson 1: Observe the Sky

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can:

1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]

Lesson 2: Patterns in the Sky

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can

1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]

K-2. Engineering Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Lesson 3: Daylight Changes and Seasons

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]

K-2. Engineering Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Performance-based Assessment

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can

1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the sun and moon appear to rise in one part of the sky, move across the sky, and set; and stars other than our sun are visible at night but not during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]

K-2. Engineering Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Vocabulary: star, sun, gravity, rotation, sunrise, sunset, moon phase, season	Science and Engineering Practices (SEP) SEP.2 Developing and Using Models SEP.3 Planning and Carrying Out Investigations SEP.4 Analyzing and Interpreting Data	Disciplinary Core Ideas(DCI) ESS1.A The Universe and Its Stars: understanding that patterns of movement of the sun, moon, and stars as seen from the earth, can be predicted. ESS1.B Earth and the Solar System: recognizing that pattern of changes in daylight and seasons can be observed, described and predicted.	Crosscutting Concepts(CCC) CCC.1 <u>Patterns:</u> recognizing that patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
<u>ESSENTIAL LESSONS:</u> * STEM Quest Kick-Off – Sky Watchers, p. 76* <u>Lesson 1 – Describe the sun, moon, and stars.</u> <u>Connect:</u> Jumpstart Discovery, p. 80, 15 min. (watch video) <u>Investigate:</u> uInvestigate Lab, p. 81, Why is it Hard to see stars during the day? 20 min., <u>Synthesize:</u> Lesson 1, pp. 82-84, 20 min., Assessment, p. 85, Quest Check-In, Stars in the sky, p. 85, 10 min. <u>Lesson 2 – Students will tell what causes day and night and moon phases.</u> <u>Connect:</u> Jumpstart Discovery, p. 86, 20 min., (watch video) <u>Investigate:</u> uInvestigate Lab, p. 87, How can you observe sun patterns? 30 min. <u>Synthesize:</u> Lesson 2, pp. 88-91, 25 min., Quest Check-In, Moon Patterns, pp. 92, 15 min., Assessment, p. 92 <u>Lesson 3 – Explain why days have different lengths during different seasons.</u> <u>Connect:</u> Jumpstart Discovery, p. 94, 15 min, (watch video) <u>Investigate:</u> uInvestigate Lab, p. 95, How does the sun cause seasons? 25 min. <u>Synthesize:</u> Lesson 3, pp. 96-97, 15 min. <u>Demonstrate:</u> Quest Check-In Lab, p. 98-99, 30 min., How can you model the motions of the Earth? Assessment, pp. 104-109 * Quest Findings – Sky Watchers, p. 102 *			<u>DISCRETIONARY LESSONS:</u> <u>Lesson 1</u> - Vocabulary App. p.80 - Quest Connection, Assessment p. 83 - Interactivity, Enrichment Activity, p. 84 <u>Lesson 2</u> - Vocabulary App. p. 86 - Quest Connection, p. 91 - STEM Math Connection, p. 93 <u>Lesson 3</u> - Interactivity, Vocabulary App. p. 94 - Quest Connection, p. 96 - Uengineer It!, pp. 100-101 - Career Connection, p. 103

Topic 4- Earth Science – Weather and Seasons

Essential Question: What can you tell about weather and seasons?

Lesson 1: Types of Weather

K-2. Engineering and Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Lesson 2: Weather Changes and Seasons

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]

Performance-based Assessment

1.Space Systems: Patterns and Cycles

Students who demonstrate understanding can

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]

Vocabulary: weather, thermometer, rain gauge, anemometer, tornado, blizzard, shelter	<u>Science and Engineering Practices(SEP)</u> SEP.1 Asking Questions and Defining Problems SEP.2 Developing and Using Models SEP.3 Planning and Carrying Out Investigations	<u>Disciplinary Core Ideas(DCI)</u> ESS1.B Earth and the Solar System: observing, describing and predicting seasonal patterns of sunrise and sunset. ETS1.B Developing Possible Solutions: communicating ideas for a problem’s solution to other people.	<u>Crosscutting Concepts(CCC)</u> CCC.1 <u>Patterns</u> : recognizing that patterns in the natural world can be used to describe phenomena.
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ESSENTIAL LESSONS:

*** Quest Kick-Off, Plan a Trip! p. 112 ***

Lesson 1 – Observe and measure weather

Connect: Jumpstart Discovery, p. 116, 15 min. (watch video)

Investigate: uInvestigate Lab, p. 117, Which was is the wind blowing? 30 min.

Synthesize: Lesson 1, pp. 118-121, 30 min., Assessment, p. 121, Quest Check-In, Hot and Cold, p. 122, 15 min.

Lesson 2 –Describe how weather changes from day to day. Describe seasons.

Connect: Jumpstart Discovery, p. 126, 15min. (watch video)

Investigate: uInvestigate Lab, p. 127, How can you make it rain? 20 min.

Synthesize: Lesson 2, pp. 128-131, 30 min.

Demonstrate: Quest Check-In, How does the season affect the amount of daylight? pp. 132-133, 30 min., Assessment, pp. 136-141

*** Quest Findings – Plan a Trip, p. 134***

DISCRETIONARY LESSONS:**Lesson 1**

- uConnect Lab, p. 114
- Vocabulary App, p. 116
- Quest Connection, p. 119
- Extreme Science, p. 123
- uEngineer It!, pp. 124-125

Lesson 2

- Vocabulary App, p. 126
- Quest Connection, p. 128
- Career Connection, p. 135

Topic 5 - Life Science - Living Things

Essential Question: How do the parts of plants and animals help them?

Lesson 1: Plant Parts

1. Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]

K-2. Engineering and Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Lesson 2: Animal Parts

1. Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]

K-2. Engineering and Design

Students who demonstrate understanding can

K-2-ETS1-1. Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-2. 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-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Lesson 3: People Learn from Plant and Animal Part

1. Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]

Lesson 4: Where Plants and Animals Live

1. Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or

equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]

K-2. Engineering and Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Performance-based Assessment

1.Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.* [Clarification Statement: Examples of human problems that can be solved by mimicking plant or animal solutions could include designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; stabilizing structures by mimicking animal tails and roots on plants; keeping out intruders by mimicking thorns on branches and animal quills; and, detecting intruders by mimicking eyes and ears.]

K-2-ETS1-2. 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-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Vocabulary: root, stem, leaf, gills, scales, mimic, environment	<u>Science and Engineering Practices (SEP)</u> SEP.3 Planning and Carrying Out Investigations SEP.4 Analyzing and Interpreting Data SEP.8 Obtaining, Evaluating, and Communicating Information	<u>Disciplinary Core Ideas(DCI)</u> LS1.A Structure and Function: recognizing that all organisms have external body parts that they use to perform various functions. LS1.D Information Processing: understanding that animals sense and communicate information and respond to inputs with behaviors that help them grow and survive.	<u>Crosscutting Concepts(CCC)</u> CCC.6 <u>Structure and Function:</u> observing the shape and stability of structures of natural and designed objects are related to their functions.
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ESSENTIAL LESSONS:

*** Quest Kick-Off, Nature Copycats, p. 144 ***

Lesson 1 -Students will identify the major parts of plants and explain how plant parts help plants.

Connect: Jumpstart Discovery, p. 148, 15 min. (watch video)

Investigate: uInvestigate Lab, p. 149, What do the parts of a plant look like? 20 min.

Synthesize: Lesson 1, pp. 150-152, 20 min., Assessment, p. 152, Quest Check-In, Roots help plants survive, p. 153, 15 min.

Lesson 2 - Identify the major parts of animals and explain how animal parts help animals.

Connect: Jumpstart Discovery, p. 154, 15 min. (watch video)

Investigate: uInvestigate Lab, p. 155, How do whiskers help a cat? 30 min.

Synthesize: L2 pp. 156-158, 25 min., Assessment, p. 159, Quest Check-In, Different Shapes Different Uses, p. 159, 15 min.

Lesson 3 -Demonstrate how people can learn from plant and animal parts

Connect: Jumpstart Discovery, p. 162, 15 min (watch video)

Investigate: uInvestigate Lab, p. 163, What can people learn from an acorn shell? 20 min.,

Synthesize: Lesson 3, pp. 164-165, 20 min., Quest Check-In, A sticky invention, p. 166, 15 min., Assessment, p. 167

Lesson 4 -Use the senses to observe living things in their environment.

Connect: Jumpstart Discovery, p. 168, 15 min. (watch video)

Investigate: uInvestigate Lab, p. 169, What happens to a water plant out of water? 20 min.,

Synthesize: Lesson 4, pp. 170-173, 30 min.

Demonstrate: Quest Chk-In, How do snowshoe hares stay safe? pp. 174-175, 15 mn., Assessmnt, p. 175, Assessmnt, pp. 178-183

*** Quest Findings - Nature Copycats, p. 176 ***

DISCRETIONARY LESSONS:**Lesson 1**

- uConnect Lab, p. 146
- Literacy Connection p. 147
- Vocabulary App, p. 148
- Quest Connection, p. 150

Lesson 2

- Vocabulary App, p. 154
- uEngineer It! pp. 160-161
- Quest Connection, Enrichment, p. 158

Lesson 3

- Vocabulary App, p. 162
- Quest Connection, p. 164
- Enrichment, p. 166
- STEM Math Connection

Lesson 4

- Vocabulary App, p. 168
- Quest Connection, Enrichment, p. 171
- Enrichment
- Career Connection, p. 177

Topic 6- Life Science – Parents and Offspring

Essential Question: How are parents and their young alike and different?

Lesson 1: Plant and Animal Life Cycles

1.Structure, Function, and Information Processing

Students who demonstrate understanding can:

1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]

Lesson 2: Observe Parents and Youngs

1.Structure, Function, and Information Processing

Students who demonstrate understanding can

1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. [Clarification Statement: Examples of patterns could include features plants or animals share. Examples of observations could include leaves from the same kind of plant are the same shape but can differ in size; and a particular breed of dog looks like its parents but is not exactly the same.] [Assessment Boundary: Assessment does not include inheritance or animals that undergo metamorphosis or hybrids.]

1.Structure, Function, and Information Processing

Students who demonstrate understanding can:

K-2. Engineering and Design

Students who demonstrate understanding can

K-2-ETS1-2. 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.

Lesson 3: Patterns in Animal Behavior

1.Structure, Function, and Information Processing

Students who demonstrate understanding can:

1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]

Performance-based Assessment

1-LS1-2. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive. [Clarification Statement: Examples of patterns of behaviors could include the signals that offspring make (such as crying, cheeping, and other vocalizations) and the responses of the parents (such as feeding, comforting, and protecting the offspring).]

Vocabulary: life cycle, offspring, compare/contrast, protect, pattern, behavior	<u>Science and Engineering Practices(SEP)</u> SEP.3 Planning and Carrying Out Investigations SEP.6 Constructing Explanations and Designing Solutions SEP.8 Obtaining, Evaluating, and Communicating Information	<u>Disciplinary Core Ideas(DCI)</u> LS1.B Growth and Development of Organisms: understanding that adult plants and animals can have young. In many kinds of animals, parents and the offspring engage in behaviors that help the offspring to survive. LS3.A Inheritance of Traits: understanding that young animals are very much but not exactly like, their parents. Plants also are very much, but not exactly, like their parents.	<u>Crosscutting Concepts(CCC)</u> CCC.1 <u>Patterns:</u> recognizing that patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.
<u>ESSENTIAL LESSONS:</u> * Quest Kick-Off, Find the Parents, p. 186 * <u>Lesson 1 –Students will observe the life cycles of some plants and animals.</u> <u>Connect:</u> Jumpstart Discovery, p. 190, 15 min., (watch video) <u>Investigate:</u> uInvestigate Lab, p. 191, How do plants grow and change? 15 min. <u>Demonstrate:</u> Lesson 1, pp. 192-193, 15 min., Quest Connection, Assessment, p. 193 <u>Quest Check-In,</u> How are the life cycles alike and different? pp. 194-195, 30 min. <u>Lesson 2 –Observe that young plants and animals are like, but not exactly like, their parents.</u> <u>Connect:</u> Jumpstart Discovery, p. 196, 10 min. <u>Investigate:</u> uInvestigate Lab, p. 197, What do young plants look like? 15 min. Lesson 2, pp. 198-202, 25 min., (watch video) <u>Synthesize:</u> Assessment, p. 202, Quest Check-In, Alike and Different, p. 203, 15 min. <u>Lesson 3 –Tell what animals need and explain how the behaviors of parents and their young help the young survive.</u> <u>Connect:</u> Jumpstart Discovery, p. 206, 10 min <u>Investigate:</u> uInvestigate Lab, p. 207, How do nests protect eggs? 15 min. Lesson 3, pp. 208-213, 30 min., (watch video) <u>Synthesize:</u> Assessment, p. 213, Quest Check-In, Parents Help Young Learn, p. 214, 15 min., Assessment, pp. 218-223 * Quest Findings – Find the parents, p. 216 *			<u>DISCRETIONARY LESSONS:</u> <u>Lesson 1</u> - uConnect Lab, p. 188 - Vocabulary App, p. 190 <u>Lesson 2</u> - Vocabulary App, p. 196 - Enrichment, p. 199 - Quest Connection, p. 201 - uEngineer It!, pp. 204-205 <u>Lesson 3</u> - Vocabulary App, p. 206- - Quest Connection, p. 209- - Enrichment, p. 210- - STEM Math Connection, p. 215 - Career Connection, p. 217

