Science - Grade K

Unit Title: Kindergarten - Unit 1 - Pushes and Pulls

What happens if you push or pull an object harder?

During this unit of study, students apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution. The crosscutting concept of cause and effect is called out as the organizing concept for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data. Students are also expected to use these practices to demonstrate understanding of the core ideas.

This unit is based on K-PS2-1, K-PS2-2, and K-2 ETS1-3.

Stage 1: Desired Results

Standards & Indicators:

- **NJSLS – Science**
  - **Science and Engineering Practices (SEP)**
    - Planning and Carrying Out Investigations
      - With guidance, plan and conduct an investigation in collaboration with peers. (K-PS21)
    - Analyzing and Interpreting Data
      - Analyze data from tests of an object or tool to determine if it works as intended. (K-PS2-2)
    - Asking Questions and Defining Problems
      - Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)
      - Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)
    - Developing and Using Models
      - Develop a simple model based on evidence to represent a proposed object or tool. (K-2-ETS12)
  - **Disciplinary Core Ideas (DCI)**
    - PS2.A: Forces and Motion
      - Pushes and pulls can have different strengths and directions. (K-PS2-1), (K-PS2-2)
      - Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1), (K-PS2-2)
    - PS2.B: Types of Interactions
      - When objects touch or collide, they push on one another and can change motion. (K-PS2-1)
    - PS3.C: Relationship Between Energy and Forces
      - A bigger push or pull makes things speed up or slow down more quickly. (secondary to K-PS2-1)
    - ETS1.A: Defining Engineering Problems
      - A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (secondary to K-PS22)
    - ETS1.A: Defining and Delimiting Engineering Problems

Science - Grade K

- A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)
- Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
- Before beginning to design a solution, it is important to clearly understand the problem. (K2-ETS1-1)

- **Crosscutting Concepts (CCC)**
  - Cause and Effect
    - Simple tests can be designed to gather evidence to support or refute student ideas about causes. (K-PS2-1), (K-PS2-2)
  - Structure and Function
    - The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-1)
  - Connections to the Nature of Science
    - Scientific Investigations Use a Variety of Methods
      - Scientists use different ways to study the world. (K-PS2-1)

Central Idea / Enduring Understanding:

- During this unit of study, students apply an understanding of the effects of different strengths or different directions of pushes and pulls on the motion of an object to analyze a design solution. The crosscutting concept of cause and effect is called out as the organizing concept for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Essential/Guiding Question:

- What does science have to do with playing sports?
- Why do scientists like to play soccer?
- How can you design a simple way to change the speed or direction of an object using a push or pull from another object?
- What are position and motion?

Content:

- People use different ways to study the world.
- Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- Pushes and pulls can have different strengths and directions.
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it.
- When objects touch or collide, they push on one another and can change motion.
- A bigger push or pull makes things speed up or slow down more quickly.

Skills (Student Learning Objectives):

- Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.] (K-PS2-1)

Science - Grade K

• Simple tests can be designed to gather evidence to support or refute student ideas about causes. • Pushes and pulls can have different strengths and directions. • Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. • A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions.	• Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.] (K-PS2-2) • Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs. (K-2-ETS1-3)

Interdisciplinary Connection(s):

- **NJSLS – Math**
  - MP.2: Reason abstractly and quantitatively.
  - MP.4: Model with mathematics.
  - MP.5: Use appropriate tools strategically.
  - K.M.A.1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
  - K.M.A.2: Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
- **NJSLS – English Language Arts**
  - RI.CR.K.1: With prompting and support, ask and answer questions about key details in an informational text (eg. who, what,where,when,why, how). .
  - W.RW.K.7. With prompting and support, engage in brief but regular writing and drawing tasks.
  - SL.ES.K.3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- **NJSLS – Career Readiness, Life Literacies and Key Skills**
  - 9.4.2.CI.2: Demonstrate originality and inventiveness in work.
  - 9.4.2.CT.2: Identify possible approaches and resources to execute a plan.
  - 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Stage 2: Assessment Evidence

Performance Task(s): • STEM Activity • Formative Assessments • Guided Inquiry Labs • Performance Expectation Activities • Inquiry Investigate It!	**Other Evidence:** • Post-activity discussion questions • Review Vocabulary Smart Cards • Students make connections to the “Unlock the Big ?” in each lesson.

Science - Grade K

• Unit Assessment	• Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:	Resources:
Pearson Chapter 1 ○ Inquiry: Students will observe and describe the motion of an object by tracing its path. ○ STEM Activity - Move It Around ○ Read Aloud - How does the ball move?	**Pearson Chapter 1** ○ Inquiry ■ Try It! How do objects move? TE p. 10; SE p. 2 ○ STEM TE pp. 12-15 ○ Read Aloud - TE p. 8
Pearson Chapter 1 - Lesson 2: What makes objects move? • Engage and Explore ○ Envision It! Tell what the children are doing. ○ Activate prior knowledge ○ Investigate how a push or pull can change how an object moves • Explain and Elaborate ○ What makes objects move?	**Pearson Chapter 1 - Lesson 2** • Engage and Explore ○ Envision It! p. TE 18 ○ TE p. 18; p. SE 15 • Explain and Elaborate ○ TE pp. 18-19; SE p. 15 ○ Compare and Contrast; Predict; Cause and Effect TE p. 19
Pearson Chapter 1 - Lesson 3: What are some ways objects move? • Engage and Explore ○ Envision It! Tell what objects are moving in each picture. ○ Activate prior knowledge ○ Compare objects by how fast they move. • Explain and Elaborate ○ What are some ways objects move?	**Pearson Chapter 1 - Lesson 3** • Engage and Explore ○ Envision It! TE p. 20 ○ TE p. 20; SE p. 16 • Explain and Elaborate ○ TE pp. 20-21; SE p. 16 ○ Synthesize; Compare and Contrast; Apply TE p. 21
Pearson Chapter 1 - Lesson 4: How do moving objects affect each other? • Engage and Explore ○ Envision It! Tell what happens to the toy cars. ○ Activate prior knowledge	**Pearson Chapter 1 - Lesson 4** • Engage and Explore ○ Envision It! TE p. 22 ○ TE p. 22; SE p. 17

Science - Grade K

○ Investigate to determine how moving objects affect each other. ● Explain and Elaborate ○ How do moving objects affect each other? ● Evaluate ○ Formative Assessment ● Unit Cumulative Activities ○ Performance Expectation Activity ○ Performance-Based Assessment ○ Inquiry Investigate It!- Students will observe that a push or a pull can change the motion of a toy car. **Additional learning opportunities/strategies:** ● Utilize other Pearson resources, online resources, and/or web links to support learning.	● Explain and Elaborate ○ TE pp. 22-23; SE p. 17 ○ Compare and Contrast; Predict; Cause and Effect TE p. 23 ● Evaluate ○ TE pp. 30-32 ● Unit Cumulative Activities ○ TE pp. 33a-33b ○ TE p. 33 ○ Inquiry Investigate It!- How can you move the car? TE pp 24-25 SE p. 18 **Additional resources:** ● Multi-Disciplinary Center Flip Chart ● Science Song Coloring Book ● http://www.bozemanscience.com/ ● http://ngss.nsta.org/ ● https://www.teachingchannel.org/ngss

Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation.

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Advanced Leveled Content Reader Use project-based science learning to connect science with observable phenomena.	On-Level Content Reader Use project-based science learning to connect science with observable phenomena.	Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures,	Provide ELL students with multiple literacy strategies. Utilize the ELL lesson plan to identify content and language objectives. Use project-based science learning to connect science with observable phenomena. Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge.

		illustrations, graphs, charts, data tables, multimedia, modeling). Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. Use project-based science learning to connect science with observable phenomena. Structure the learning around explaining or	Utilize the ELL handbook for best practices and instructional strategies.

		solving a social or community- based issued	

Unit Title: Kindergarten - Unit 2 - Effects of the Sun

How can we use science to keep a playground cool in the summertime?

During this unit of study, students apply an understanding of the effects of the sun on the Earth's surface. The crosscutting concepts of cause and effect and structure and function are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in developing and using models; planning and carrying out investigations; analyzing and interpreting data; and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas. This unit is based on K-PS3-1, K-PS3-2, K-2-ETS1-1, K-2-ETS1-2, and K-2-ETS1-3.

Stage 1: Desired Results

Standards & Indicators:

- **NJSLS – Science**
  - **Science and Engineering Practices (SEP)**
    - Planning and Carrying Out Investigations
      - Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)
    - Constructing Explanations and Designing Solutions
      - Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. (K-PS3-2)
    - Asking Questions and Defining Problems
      - Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)
      - Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)
    - Developing and Using Models
      - Develop a simple model based on evidence to represent a proposed object or tool. (K-2-ETS1-2)
    - Analyzing and Interpreting Data
      - Analyze data from tests of an object or tool to determine if it works as intended. (K-2-ETS1-3)
  - **Disciplinary Core Ideas (DCI)**
    - PS3.B: Conservation of Energy and Energy Transfer
      - Sunlight warms Earth's surface. (K-PS3-1),(K-PS32)
    - ETS1.A: Defining and Delimiting Engineering Problems
      - A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)
      - Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
      - Before beginning to design a solution, it is important to clearly understand the problem. (K2-ETS1-1)
    - ETS1.B: Developing Possible Solutions

Science - Grade K

- Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. (K-2-ETS1-2)
- ETS1.C: Optimizing the Design Solution
  - Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (K-2-ETS1-3)

- **Crosscutting Concepts (CCC)**
  - Cause and Effect
    - Events have causes that generate observable patterns. (K-PS3-1),(K-PS3-2)
  - Structure and Function
    - The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)
  - Connections to Nature of Science
    - Scientific Investigations Use a Variety of Methods
      - Scientists use different ways to study the world. (K-PS3-1)

Central Idea / Enduring Understanding:

- During this unit of study, students apply an understanding of the effects of the sun on the Earth's surface. The crosscutting concepts of cause and effect and structure and function are called out as organizing concepts for this disciplinary core idea. Students are expected to demonstrate grade-appropriate proficiency in developing and using models; planning and carrying out investigations; analyzing and interpreting data; and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas

Essential/Guiding Question:

- How can we use science to keep a playground cool in the summertime?
- How does sunlight affect the playground?
- Imagine that we have been asked to design a new playground. How would we keep the sand, soil, rocks, and water found on the playground cool during the summer?
- What are Earth and the sky like?

Content:

- Sunlight warms Earth's surface.
- Events have causes that generate observable patterns.
- The shape and stability of structures of natural and designed objects are related to their function(s).
- Designs can be conveyed through sketches, drawings, or physical models.
- These representations are useful in communicating ideas for a problem's solutions to other people.
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

Skills (Student Learning Objectives):

- Make observations to determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water.] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.] (K-PS3-1)
- Use tools and materials provided to design and build a structure that will reduce the warming effect of sunlight on Earth's surface.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.] (K-PS3-2)

Science - Grade K

	● 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-ETS1-1) ● 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-ETS1-2)

Interdisciplinary Connection(s):

- **NJSLS – Math**
  - MP.2: Reason abstractly and quantitatively.
  - MP.4: Model with mathematics.
  - MP.5: Use appropriate tools strategically.
  - K.M.A.2: Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.
- **NJSLS – English Language Arts**
  - R.I.CR.K.1- With prompting and support ask and answer questions about key details in an informational text (eg. who what where when why how).
  - W.RW.K.7. With prompting and support, engage in brief but regular writing and drawing tasks.
  - SL.2.5: Use multimedia; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings.
  - W.SE.K.6._With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **NJSLS – Career Readiness, Life Literacies and Key Skills**
  - 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem.
  - 9.4.2.DC.7: Describe actions peers can take to positively impact climate change.

Stage 2: Assessment Evidence

Performance Task(s):	Other Evidence:
● STEM Activity ● Formative Assessments ● Guided Inquiry Labs ● Performance Expectation Activities ● Inquiry Investigate It!	● Post-activity discussion questions ● Review Vocabulary Smart Cards ● Students make connections to the “Unlock the Big ?” in each lesson. ● Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:	Resources:
Pearson Chapter 3 ● Read Aloud - Is it night or day?	**Pearson Chapter 3** ● Read Aloud - TE p. 78

Science - Grade K

Pearson Chapter 3 - Lesson 1: What can see in the day sky? ● Engage and Explore ○ Envision It! Tell what you see in the sky. ○ Activate prior knowledge ○ Students will observe when the sun, clouds, and moon can be seen in the sky. ● Explain and Elaborate ○ What can you see in the day sky?	**Pearson Chapter 3 - Lesson 1** ● Engage and Explore ○ Envision It! TE p. 86 ○ TE p. 86; SE p. 54 ● Explain and Elaborate ○ TE pp. 86-87; SE p. 54 ○ Draw Conclusions and Compare and Contrast TE p. 89
Pearson Chapter 3 - Lesson 2: How does the sun seem to move? ● Engage and Explore ○ Envision It! Tell where the sun is in each picture. ○ Activate prior knowledge ○ Students will describe patterns that show where the sun seems to be in the sky at different times of the day. ● Explain and Elaborate ○ How does the sun seem to move?	**Pearson Chapter 3 - Lesson 2** ● Engage and Explore ○ Envision It! TE 88 ○ TE 88; SE 55 ● Explain and Elaborate ○ TE 88-89; SE 55 ○ Draw Conclusions and Compare and Contrast TE 89
Pearson Chapter 3 - Lesson 3: What do you get from the sun? ● Engage and Explore ○ Envision It! Tell about the boy and the girl. ○ Activate prior knowledge ○ Students will communicate that the sun gives us light and can make us warm. ● Explain and Elaborate ○ What do you get from the sun?	**Pearson Chapter 3 - Lesson 3** ● Engage and Explore ○ Envision It! TE 90 ○ TE 90; SE 56 ● Explain and Elaborate ○ TE 90-91; SE 56 ○ Analyze, Apply and Draw Conclusions TE 91
Pearson Chapter 3 - Lesson 5: How can we use rocks, soil, and water? ● Engage and Explore ○ Envision It! Tell about picture of the girl.	**Pearson Chapter 3 - Lesson 5** ● Engage and Explore ○ Envision It! TE 94 ○ TE 94; SE 58

Science - Grade K

○ Activate prior knowledge ○ Students will communicate that rocks, soil, water can be useful for building. ● Explain and Elaborate ○ There are many ways that rocks, soil, and water are useful. ● Evaluate ○ Scaffolded Inquiry Support: Guided- How can the sun change things? **Additional learning opportunities/strategies:** ● Utilize other Pearson resources, online resources, and/or web links to support learning.	● Explain and Elaborate ○ TE 94-95; SE 58 ○ Apply and Draw Conclusions TE 95 ● Evaluate ○ TE 102-103 **Additional resources:** ● Multi-Disciplinary Center Flip Chart ● Science Song Coloring Book ● http://www.bozemanscience.com/ ● http://ngss.nsta.org/ ● https://www.teachingchannel.org/ngss

Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation.

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Advanced Leveled Content Reader Use project-based science learning to connect science with observable phenomena.	On-Level Content Reader Use project-based science learning to connect science with observable phenomena.	Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables,	Provide ELL students with multiple literacy strategies. Utilize the ELL lesson plan to identify content and language objectives. Use project-based science learning to connect science with observable phenomena. Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge. Utilize the ELL handbook for best practices and instructional strategies.

		multimedia, modeling). Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. Use project-based science learning to connect science with observable phenomena. Structure the learning around explaining or	

		solving a social or community based issued.	

Unit Title: **Kindergarten - Unit 3 - Weather**

What is the weather like today and how is it different from yesterday?

In this unit of study, students develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The crosscutting concepts of patterns; cause and effect; interdependence of science, engineering, and technology; and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Note: Unlike other science units, the Weather unit is intended to become a part of the classroom routine throughout the year. Some weather patterns are not obvious unless the students collect data over long periods of time. For example, in some locations it is sunnier during some parts of a year than others. The temperature outside will change from fall, winter, spring, to summer. Also, during some periods, the weather data should be recorded in the morning and then again in the afternoon. Students will be able to observe patterns in temperature through the course of the day.

This unit is based on K-ESS2-1, K-ESS3-2, and K-2-ETS1-1.

Stage 1: Desired Results

Standards & Indicators:

- **NJSLS – Science**
  - **Science and Engineering Practices (SEP)**
    - Analyzing and Interpreting Data
      - Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-ESS2-1)
    - Asking Questions and Defining Problems
      - Ask questions based on observations to find more information about the designed world. (KESS3-2)
      - Ask questions based on observations to find more information about the natural and/or designed world(s).
      - Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)
    - Obtaining, Evaluating, and Communicating Information
      - Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. (K-ESS3-2)
  - **Disciplinary Core Ideas (DCI)**
    - ESS2.D: Weather and Climate
      - Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (KESS2-1)
    - ESS3.B: Natural Hazards •

Science - Grade K

- Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2)
- ETS1.A: Defining and Delimiting an Engineering Problem
  - A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)
  - Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
  - Before beginning to design a solution, it is important to clearly understand the problem. (K2-ETS1-1)

- **Crosscutting Concepts (CCC)**
  - Patterns
    - Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (K-ESS2-1)
  - Cause and Effect
    - Events have causes that generate observable patterns. (K-ESS3-2)
  - Connections to Nature of Science
    - Science Knowledge is Based on Empirical Evidence
      - Scientists look for patterns and order when making observations about the world. (K-ESS2-1)
  - Connections to Engineering, Technology, and Applications of Science
    - Interdependence of Science, Engineering, and Technology
      - People encounter questions about the natural world every day. (K-ESS3-2)
    - Influence of Engineering, Technology, and Science on Society and the Natural World
      - People depend on various technologies in their lives; human life would be very different without technology. (K-2-ETS1-1)

Central Idea / Enduring Understanding:

- In this unit of study, students develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The crosscutting concepts of patterns; cause and effect; interdependence of science, engineering, and technology; and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Essential/Guiding Question:

- How does weather forecasting help to keep people safe?
- What types of patterns can be observed in local weather conditions?
- How does weather forecasting help us to prepare for and respond to severe weather?
- What are Earth and sky like?

Science - Grade K

Content:

- Scientists look for patterns and order when making observations about the world.
- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
- Weather is the combination of sunlight, wind, snow, or rain and temperature in a particular region at a particular time.
- People measure these conditions to describe and record the weather and to notice patterns over time.
- Events have causes that generate observable patterns.
- People encounter questions about the natural world every day.
- Some kinds of severe weather are more likely than others in a given region.
- Weather scientists forecast severe weather so that communities can prepare for and respond to these events.
- People depend on various technologies in their lives; human life would be very different without technology.
- Before beginning to design a solution, it is important to clearly understand the problem.

Skills (Student Learning Objectives):

- Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.] (K-ESS2-1)
- Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.* [Clarification Statement: Emphasis is on local forms of severe weather.] (K-ESS3-2)
- 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-ETS1-1)

Interdisciplinary Connection(s):

- **NJSLS – Math**
  - MP.2: Reason abstractly and quantitatively.
  - MP.4: Model with mathematics.
  - MP.5: Use appropriate tools strategically.
  - K.CC.A: Know number names and the count sequence.
  - K.M.A.1: Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
  - K.DL.A.1. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count. (Clarification: Limit category counts to be less than or equal to 10).
- **NJSLS – English Language Arts**
  - W.RW.K.7: With prompting and support, engage in brief but regular writing and drawing tasks.
  - RI.CR.K.1: With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
  - SL.ES.K.3: Ask and answer questions in order to seek help, get information, or clarify something that is not understood.
- **NJSLS – Career Readiness, Life Literacies and Key Skills**

- 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem.
- 9.4.2.CT.2: Identify possible approaches and resources to execute a plan.
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)
- 9.4.2.IML.3: Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults.

Stage 2: Assessment Evidence

Performance Task(s):

- STEM Activity
- Formative Assessments
- Guided Inquiry Labs
- Performance Expectation Activities
- Inquiry Investigate It!
- Unit Assessment

Other Evidence:

- Post-activity discussion questions
- Review Vocabulary Smart Cards
- Students make connections to the “Unlock the Big ?” in each lesson.
- Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Pearson Chapter 3

- Inquiry: Students will observe and record the weather for 1 month.

Pearson Chapter 3 - Lesson 4: What are some kinds of weather?

- Engage and Explore
  - Envision It! Tell about the weather in the picture.
  - Activate prior knowledge
  - Students will observe and record weather.
- Explain and Elaborate
  - What are some kinds of weather?

STEM Activity - Cool Down

  - Pre-activity Discussion
  - Post-activity Discussion

- Evaluate
  - Formative Assessment

- Unit Cumulative Activities

Resources:

Pearson Chapter 3

- Inquiry
- Try It! How does weather change? TE p. 80; SE p. 42 (Math Routines)

Pearson Chapter 3 - Lesson 4

- Engage and Explore
  - Envision It! TE p. 92
  - TE p. 92; SE p. 57
- Explain and Elaborate
  - TE pp. 92-93; SE p. 57
  - Synthesize; Apply; Draw Conclusions TE p. 93

STEM Activity - Cool Down

  - TE p. 82
  - SE p. 46-53
  - TE p. 83

- Evaluate
  - TE pp. 104-105

- Unit Cumulative Activities

Science - Grade K

○ Performance Expectation Activity ○ Performance-Based Assessment ○ Inquiry Investigate It!-Students will observe the sun's effect on temperature. ○ Inquiry Investigate It!: Guided-How else can the sun change things? ○ Big World My World **Additional learning opportunities/strategies:** ● Utilize other Pearson resources, online resources, and/or web links to support learning.	○ TE pp. 109a-109b ○ TE p. 107 ○ Inquiry Investigate It!- How can the sun make temperature change? TE p. 98 SE p. 60 ○ Inquiry Investigate It: Guided- TE p. 102 ○ TE p. 99; SE p. 61 **Additional resources:** ● Multi-Disciplinary Center Flip Chart ● Science Song Coloring Book ● http://www.bozemanscience.com/ ● http://ngss.nsta.org/ ● https://www.teachingchannel.org/ngss

Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation.

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Advanced Leveled Content Reader Use project-based science learning to connect science with observable phenomena.	On-Level Content Reader Use project-based science learning to connect science with observable phenomena.	Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). Provide opportunities for students to connect with people of similar backgrounds (e.g.	Provide ELL students with multiple literacy strategies. Utilize the ELL lesson plan to identify content and language objectives. Use project-based science learning to connect science with observable phenomena. Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge. Utilize the ELL handbook for best practices and instructional strategies.

		conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. Use project-based science learning to connect science with observable phenomena. Structure the learning around explaining or solving a social or community based issued	

Unit Title: Kindergarten - Unit 4 - Basic Needs of Living Things

Where do plants and animals live and why do they live there?

In this unit of study, students develop an understanding of what plants and animals need to survive and the relationship between their needs and where they live. Students compare and contrast what plants and animals need to survive and the relationship between the needs of living things and where they live. The crosscutting concepts of patterns and systems and system models are called out as organizing concepts for

these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in developing and using models, analyzing and interpreting data, and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.
This unit is based on K-LS1-1, K-ESS3-1, and K-ESS2-2.

Stage 1: Desired Results

Standards & Indicators:

- **NJSLS – Science**
  - **Science and Engineering Practices (SEP)**
    - Planning and Carrying Out Investigations
      - Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)
    - Analyzing and Interpreting Data
      - Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)
    - Developing and Using Models
      - Use a model to represent relationships in the natural world. (K-ESS3-1)
    - Engaging in Argument from Evidence
      - Construct an argument with evidence to support a claim. (K-ESS2-2)
  - **Disciplinary Core Ideas (DCI)**
    - LS1.C: Organization for Matter and Energy Flow in Organisms
      - All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. (K-LS1-1)
    - ESS3.A: Natural Resources
      - Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. (K-ESS3-1)
    - ESS2.E: Biogeology
      - Plants and animals can change their environment. (K-ESS2-2)
  - **Crosscutting Concepts (CCC)**
    - Patterns
      - Patterns in the natural and human designed world can be observed and used as evidence. (K-LS1-1)
    - Systems and System Models
      - Systems in the natural and designed world have parts that work together. (KESS3-1), (K-ESS2-2)
    - Connections to Nature of Science
      - Scientific Knowledge is Based on Empirical Evidence
        - Scientists look for patterns and order when making observations about the world. (K-LS1-1)

Central Idea / Enduring Understanding:	**Essential/Guiding Question:**
• In this unit of study, students develop an understanding of what plants and animals need to survive and the relationship between	• How do plants and animals get the things that they need to live and grow? • What do plants need to live and grow?

Science - Grade K

<table>
<tr><td>their needs and where they live. Students compare and contrast what plants and animals need to survive and the relationship between the needs of living things and where they live. The crosscutting concepts of patterns and systems and system models are called out as organizing concepts for these disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in developing and using models, analyzing and interpreting data, and engaging in argument from evidence. Students are also expected to use these practices to demonstrate understanding of the core ideas.</td><td>● What is the relationship between what plants need and where they live?</td></tr>
<tr><td>Content:
● Scientists look for patterns and order when making observations about the world.
● Patterns in the natural and human-designed world can be observed and used as evidence.
● Plants need water and light to live and grow.
● Systems in the natural and designed world have parts that work together.
● Living things need water, air, and resources from the land, and they live in places that have the things they need.
● Systems in the natural and designed world have parts that work together.
● Plants can change their environments.
● Things that people do to live comfortably can affect the world around them.
● People can make choices that reduce their impacts on the land, water, air, and other living things. (The focus of this unit is on plants and animals. Even though this particular concept is part of K-ESS2-2, it will not be addressed in this unit of study, but will instead be addressed in Unit 5, Humans.)</td><td>Skills (Student Learning Objectives):
● Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.] (K-LS1-1)
● Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.] (K-ESS3-1)
● Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs. [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.] (K-ESS2-2)</td></tr>
<tr><td colspan="2">Interdisciplinary Connection(s):
● NJSLS – Math
○ MP.2: Reason abstractly and quantitatively.</td></tr>
</table>

- MP.4: Model with mathematics.
- K.CC.A: Know number names and the count sequence.
- K.M.A.2: Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter.

- **NJSLS – English Language Arts**
  - W.AW.K.1. Use a combination of drawing, dictating, and writing to compose opinion pieces on a topic or text (e.g., My favorite book is...).
  - W.RW.K.7. With prompting and support, engage in brief but regular writing and drawing tasks.
  - W.IW.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts to convey ideas.
  - SL.UM.K.5. - Add drawings or other visual displays to descriptions as desired to provide additional detail.
- **NJSLS – Career Readiness, Life Literacies and Key Skills**
  - 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.
  - 9.4.2.IML.3: Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults.

Stage 2: Assessment Evidence

Performance Task(s):

- STEM Activity
- Formative Assessments
- Guided Inquiry Labs
- Performance Expectation Activities
- Inquiry Investigate It!

Other Evidence:

- Post-activity discussion questions
- Review Vocabulary Smart Cards
- Students make connections to the “Unlock the Big ?” in each lesson.
- Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:

Pearson Chapter 2

- Inquiry: Students will predict and then observe what happens when a wilted plant is given water.
- STEM Activity- Scratch Away
- Read Aloud- Where do these animals get food?

Pearson Chapter 2 - Lesson 2: What are living things?

- Engage and Explore
  - Envision It!- Tell about living things.
  - Activate prior knowledge
  - Students will obtain information about living things.
- Explain and Elaborate

Resources:

Pearson Chapter 2

- Inquiry
  - Try It! - Do plants need water? (TE p. 42; SE p. 21)
- STEM TE pp. 44-47
- Read Aloud- TE p. 40

Pearson Chapter 2 - Lesson 2:

- Engage and Explore
  - Envision It! TE p. 50
  - TE p. 50; SE p. 34
- Explain and Elaborate

Science - Grade K

○ What are living things? **Pearson Chapter 2 - Lesson 3: What do plants need?** ● Engage and Explore ○ Envision It!- Tell about plants. ○ Activate prior knowledge ○ Students will investigate to describe patterns of what plants need. ● Explain and Elaborate ○ What do plants need? **Pearson Chapter 2 - Lesson 4: What do animals need?** ● Engage and Explore ○ Envision It! - Tell about the animal. ○ Activate prior knowledge ○ Students will provide evidence of what animals need. ● Explain and Elaborate ○ What do animals need? ● Evaluate ○ Inquiry Investigate It! - How do some turtles stay warm in winter? ○ Scaffolded Inquiry Investigate It!-What are some other materials turtles use to stay warm in winter? **Additional learning opportunities/strategies:** ● Utilize other Pearson resources, online resources, and/or web links to support learning.	○ TE pp. 50-51; SE p. 34 ○ Analyze and Apply TE p. 51 **Pearson Chapter 2 - Lesson 3**: ● Engage and Explore ○ Envision It! TE p. 52 ○ TE p. 52; SE p. 35 ● Explain and Elaborate ○ TE pp. 52-53; SE p. 35 ○ Explain, Compare, Interpret TE p. 53 **Pearson Chapter 2 - Lesson 4**: ● Engage and Explore ○ Envision It! TE p. 54 ○ TE p. 54; SE p. 36 ● Explain and Elaborate ○ TE pp. 54-55; SE p. 36 ○ Explain and Analyze TE p. 55 ● Evaluate ○ TE p. 60 ○ TE pp. 64-65 **Additional resources:** ● Multi-Disciplinary Center Flip Chart ● Science Song Coloring Book ● http://www.bozemanscience.com/ ● http://ngss.nsta.org/ ● https://www.teachingchannel.org/ngss
Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation.	

Science - Grade K

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Advanced Leveled Content Reader Use project-based science learning to connect science with observable phenomena.	On-Level Content Reader Use project-based science learning to connect science with observable phenomena	Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community. Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). Provide multiple grouping opportunities for students to share their ideas and to encourage work among various	Provide ELL students with multiple literacy strategies. Utilize the ELL lesson plan to identify content and language objectives. Use project-based science learning to connect science with observable phenomena. Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge. Utilize the ELL handbook for best practices and instructional strategies.

		backgrounds and cultures (e.g. multiple representation and multimodal experiences). Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. Use project-based science learning to connect science with observable phenomena. Structure the learning around explaining or solving a social or community- based issued	

Unit Title: Kindergarten - Unit 5 - Basic Needs of Humans

How do people impact the environment as they gather and use what they need to live and grow?

In this unit of study, students develop an understanding of what humans need to survive and the relationship between their needs and where they live. The crosscutting concept of cause and effect is called out as the organizing concept for the disciplinary core ideas. Students demonstrate grade-appropriate proficiency in asking questions and defining problems, and in obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.
This unit is based on K-ESS3-3 and K-2 ETS1-1.

Stage 1: Desired Results

Standards & Indicators:

- **NJSLS – Science**
  - **Science and Engineering Practices (SEP)**
    - Planning and Carrying Out Investigations
      - Make observations (firsthand or from media) to collect data that can be used to make comparisons. (K-PS3-1)
    - Obtaining, Evaluating, and Communicating Information

Science - Grade K

- Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. (K-ESS3-3)
- Asking Questions and Defining Problems
  - Ask questions based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)
  - Define a simple problem that can be solved through the development of a new or improved object or tool. (K-2-ETS1-1)

- **Disciplinary Core Ideas (DCI)**
  - ESS3.C: Human Impacts on Earth Systems
    - Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3)
  - ETS1.B: Developing Possible Solutions
    - Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.(secondary) (K-ESS3-3)
  - ETS1.A: Defining and Delimiting Engineering Problems
    - A situation that people want to change or create can be approached as a problem to be solved through engineering. (K-2-ETS1-1)
    - Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
    - Before beginning to design a solution, it is important to clearly understand the problem. (K2-ETS1-1)
- **Crosscutting Concepts (CCC)**
  - Cause and Effect
    - Events have causes that generate observable patterns. (K-ESS3-3)
  - Structure and Function
    - The shape and stability of structures of natural and designed objects are related to their function(s). (K-2-ETS1-2)

Central Idea / Enduring Understanding:	**Essential/Guiding Question:**
• In this unit of study, students develop an understanding of what humans need to survive and the relationship between their needs and where they live. The crosscutting concept of cause and effect is called out as the organizing concept for the disciplinary core ideas. Students demonstrate grade-appropriate proficiency in asking questions and defining problems, and in obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.	• How can humans reduce the impact of climate change and humans on the land, water, air, and other living things in the local environment? • What do plants and animals need?

Science - Grade K

Content:

- Events have causes that generate observable patterns.
- Things that people do to live comfortably can affect the world around them.
- People can make choices that reduce their impacts on the land, water, air, and other living things.
- Designs can be conveyed through sketches, drawings, or physical models.
- These representations are useful in communicating ideas for a problem's solutions to other people.
- A situation that people want to change or create can be approached as a problem to be solved through engineering.
- Asking questions, making observations, and gathering information are helpful in thinking about problems.
- Before beginning to design a solution, it is important to clearly understand the problem.

Skills (Student Learning Objectives):

- Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.* [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.] (K-ESS3-3)
- 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 ETS1-1)

Interdisciplinary Connection(s):

- **NJSLS – Math**
  - MP.2: Reason abstractly and quantitatively.
  - MP.4: Model with mathematics.
  - MP.5: Use appropriate tools strategically.
- **NJSLS – English Language Arts**
  - W.IW.K.2. Use a combination of drawing, dictating, and writing to compose informative/explanatory texts to convey ideas.
  - RI.CR.K.1. With prompting and support, ask and answer questions about key details in an informational text (e.g., who, what, where, when, why, how).
  - W.SE.K.6. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.
- **NJSLS – Career Readiness, Life Literacies and Key Skills**
  - 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives.
  - 9.4.2.CI.2: Demonstrate originality and inventiveness in work.
  - 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem
  - 9.4.2.CT.2: Identify possible approaches and resources to execute a plan.
  - 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
  - 9.4.2.DC.7: Describe actions peers can take to positively impact climate change.

Stage 2: Assessment Evidence

Performance Task(s):

- STEM Activity

Other Evidence:

- Post-activity discussion questions

Science - Grade K

• Formative Assessments • Guided Inquiry Labs • Performance Expectation Activities • Inquiry Investigate It!	• Review Vocabulary Smart Cards • Students make connections to the “Unlock the Big ?” in each lesson. • Have students restate or contrast topics in each lesson

Stage 3: Learning Plan

Learning Opportunities/Strategies:	Resources:
Pearson Chapter 2 ○ Biography	**Pearson Chapter 2** ○ Biography- John Gruener ■ TE p. 61; SE p. 40
Pearson Chapter 2 - Lesson 5: What do you need? • Engage and Explore ○ Envision It! - Tell about the people. ○ Activate prior knowledge ○ Students will analyze what they need. • Explain and Elaborate ○ What do you need?	**Pearson Chapter 2 - Lesson 5:** • Engage and Explore ○ Envision It! TE p. 56 ○ TE p. 56; SE p. 37 • Explain and Elaborate ○ TE pp. 56-57; SE p. 37 ○ Infer and Compare TE p. 57
Pearson Chapter 2 - Lesson 6: How do living things affect where they live? • Engage and Explore ○ Envision It! - Tell about living and nonliving things. ○ Activate prior knowledge ○ Students will investigate how things affect where they live. • Explain and Elaborate ○ How do living things affect where they live?	**Pearson Chapter 2 - Lesson 6:** • Engage and Explore ○ Envision It! TE p. 58 ○ TE p. 58; SE p. 38 • Explain and Elaborate ○ TE pp. 58-59; SE p. 38 ○ Infer and Explain TE p. 59
Pearson Chapter 3 - Lesson 6: What is recycling? • Engage and Explore ○ Envision It! - Tell about a recycling bin. ○ Activate prior knowledge ○ Students will ask questions about items that can be recycled. • Explain and Elaborate ○ What can you recycle? ○ How does recycling affect **climate change**?	**Pearson Chapter 3 - Lesson 6**: • Engage and Explore ○ Envision It! TE p. 58 ○ TE p. 96; SE p. 59 • Explain and Elaborate ○ TE pp. 96-97; SE p. 59 ○ Infer, Cause and Effect, and Apply TE p. 97

Science - Grade K

○ How can we increase recycling to have more of an impact on **climate change?** ● Evaluate ○ Formative Assessment ● Unit Cumulative Activities ○ Performance-Based Assessment ○ Performance-Based Activity **Kindergarten Lesson 7 from Green Our Planet: What can we do with a tree?** ● Engage and Explore ● What kinds of things are made from trees? ● Tell what a tree or plant needs to grow. ● Activate prior knowledge ● Students will ask questions about how trees might help the environment ● Explain and Elaborate ○ What does a tree do for the air? ○ Where might we plant a tree? ○ Why should we NOT cut trees down? ● Evaluate ○ Formative assessment **Additional learning opportunities/strategies:** ● Utilize other Pearson resources, online resources, and/or web links to support learning.	● Evaluate ○ TE pp. 66-67 ● Unit Cumulative Activities ○ TE p. 69 ○ TE p. 109e **What can we do with a tree?** ● Engage and Explore ○ Video-What can we do with a tree? (Kindergarten lesson 7 from Green Our Planet https://www.youtube.com/watch?v=ycCrvrec6lg ● Explain and Elaborate ○ Class discussion about questions asked in the video ● Evaluate ○ Formative assessment at the end of the video **Additional resources:** ● Multi-Disciplinary Center Flip Chart ● http://www.bozemanscience.com/ ● http://ngss.nsta.org/ ● https://www.teachingchannel.org/ngss

Differentiation *Please note: Teachers who have students with 504 plans that require curricular accommodations are to refer to Struggling and/or Special Needs Section for differentiation.

High-Achieving Students	On Grade Level Students	Struggling Students	Special Needs/ELL
Advanced Leveled Content Reader Use project-based science learning to connect science with observable phenomena.	On-Level Content Reader Use project-based science learning to connect science with observable phenomena	Structure lessons around questions that are authentic, relate to students' interests, social/family background and knowledge of their community.	Provide ELL students with multiple literacy strategies. Utilize the ELL lesson plan to identify content and language objectives.

Science - Grade K

		Provide students with multiple choices for how they can represent their understandings (e.g. multisensory techniques-auditory/visual aids; pictures, illustrations, graphs, charts, data tables, multimedia, modeling). Provide opportunities for students to connect with people of similar backgrounds (e.g. conversations via digital tool such as SKYPE, experts from the community helping with a project, journal articles, and biographies). Provide multiple grouping opportunities for students to share their ideas and to encourage work among various backgrounds and cultures (e.g. multiple representation and multimodal experiences). Engage students with a variety of Science and Engineering practices to provide students with multiple entry points and multiple ways to demonstrate their understanding. Use project-based science learning to connect science with observable phenomena.	Use project-based science learning to connect science with observable phenomena. Use Envision it! to frontload the lesson by activating prior knowledge and building background knowledge. Utilize the ELL handbook for best practices and instructional strategies.

		Structure the learning around explaining or solving a social or community-based issued	

Science Pacing Guide
Grade K

MP	Units	Unit TOTAL*	Cumulative TOTAL**
MP1	**Unit 1 – Pushes and Pulls** Chapter 1: Read Aloud, Try It!, Lesson 2, Lesson 3, Lesson 4, and Inquiry Investigate It!	**22 days**	**22 days**
MP1	**Unit 2 – Effects of the Sun** Chapter 3: Read Aloud, Lesson 1, Lesson 2, Lesson 3, Lesson 5, and Scaffolded Inquiry Support: Guided	**22 days**	**44 days**
MP2	**Unit 3 – Weather** Chapter 3: Try It!, Lesson 4, STEM Activities, and Inquiry Investigate It!	**22 days**	**66 days**
MP3	**Unit 4 – Basic Needs of Living Things** Chapter 2: Try It!, Lesson 2, Lesson 3, Lesson 4, and Inquiry Investigate It!	**44 days**	**110 days**
MP4	**Unit 5 – Basic Needs of Humans** Chapter 2: Biography, Lesson 5, and Lesson 6; Chapter 3: Lesson 6 and Performance-Based Activity	**24 days**	**134 days**
MP1-4	**FLEX DAYS**	**16 days**	**150 days**

* Unit Total is inclusive of introduction, instruction, assessment, labs, projects, etc. for that particular unit.

** Cumulative Total is a running total, inclusive of prior and current units.