



Grade K Science
Unit 3 Life Science
Topic 5 Needs of Living Things - 34 days

Unit Overview - In this unit students will learn what plants and animals need to survive. In **Topic 5**, through investigations students will discover some ways that plants and animals obtain what they need to survive. Students will learn different ways plants and animals can grow and change. Students take this knowledge in Topic 6 and connect the knowledge to environments. Students will learn about different environments that plants and animals live; explore different ways plants and animals change the environments in which they live; and learn about different ways that people can change the environments in order to get the resources they need. Lastly, students investigate the different things people can do to help protect the environment.

Topic Essential Question: What do plants and animals need to survive?

Lessons

- Topic Launch/Quest Kickoff
- Lesson 1 Needs of Plants
- Lesson 2 Needs of Animals
- Lesson 3 Needs of People
- Lesson 4 Life Cycles
- Topic Close –Assessment, Quest Findings

NYSSLS Performance Expectations (PE)

K-LS1-1. 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 and other materials to live, grow, and thrive.]

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.

Higher Order Thinking (HOTS)

Higher Order Thinking Skills (HOTS) will be identified within each topic plan. Kindergarten HOTS include:

- sequencing
- categorizing
- identifying patterns
- cause and effect
- researching
- brainstorming
- use of scientific method
- inferencing
- academic vocabulary

<p>Topic Opener PE: K-LS1-1 SEP: Planning and Carrying Out Investigations* Analyzing and Interpreting Data* DCI: LS1.C – Organization for Matter and Energy Flow in Organisms <ul style="list-style-type: none"> (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. CCC: Patterns* *Denotes Higher Order Thinking Skill</p>	<p>Savvas Highlighted labs are important to the understanding of the instructional concepts in this lesson and must be completed during Science instructional time.</p> <ul style="list-style-type: none"> uConnect Lab – What if plants do not get what they need? * Quest Kickoff – Lets Build a Park! Leveled Readers STEM Engineering Reader Science Song – Living Things
<p>Lesson 1 Needs of Plants PE: K-LS1-1 SEP: Analyzing and Interpreting Data* DCI: LS1.C – Organization for Matter and Energy Flow in Organisms <ul style="list-style-type: none"> (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. CCC: Patterns* *Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective <ul style="list-style-type: none"> Students will recognize what plants need to survive. Vocabulary <ul style="list-style-type: none"> survive pattern Connect <ul style="list-style-type: none"> TE/SB p. 150 Jumpstart Discovery Investigate <ul style="list-style-type: none"> TE/SB pp. 151-152 uInvestigate Lab – How do plants get water?* Video – How Plants Use Air, Water, and Sunlight to Grow? Crosscutting Concepts – Toolbox - Patterns* Synthesize <ul style="list-style-type: none"> TE/SB pp. 153-155 Interactivity – Plants Have Needs* Literacy Toolbox – Alike and Different* Quest Connection Quest Check-In – Caring for Plants at the Park* Demonstrate <ul style="list-style-type: none"> TE/SB p.154 Lesson 1 Quiz </p>

<p><u>Lesson 2 Needs of Animals</u> PE: K-LS1-1, K-ESS2-1, K-2-ETS1-2 SEP: Asking Questions and Defining Problems* Developing and Using Models* Constructing Explanations and Designing Solutions* DCI: LS1.C – Organization for Matter and Energy Flow in Organisms</p> <ul style="list-style-type: none"> (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. <p>ETS1.B – Developing Possible Solutions</p> <ul style="list-style-type: none"> 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. <p>CCC: Patterns*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective</p> <ul style="list-style-type: none"> Students will recognize what animals need to survive. <p>Vocabulary</p> <ul style="list-style-type: none"> gills <p>Connect</p> <ul style="list-style-type: none"> TE/SB p. 156 Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none"> TE/SB pp. 157-158 Video – Types of Foods Animals Eat <i>uInvestigate Lab – What feet do the best job?*</i> Math Toolbox - Count* <p>Synthesize</p> <ul style="list-style-type: none"> TE/SB pp. 159-161 Interactivity – Locating an Animal’s Needs? Quest Connection Reading Check – Alike and Different* Quest Check-In: Fish in the Park <p>Demonstrate</p> <ul style="list-style-type: none"> TE/SB p.160 Lesson 2 Quiz
<p><u>Lesson 3 Needs of People</u> PE: K-LS1-1 SEP: Analyzing and Interpreting Data* DCI: LS1.C – Organization for Matter and Energy Flow in Organisms</p> <ul style="list-style-type: none"> (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. <p>CCC: Patterns*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective</p> <ul style="list-style-type: none"> Students will recognize what people need to survive. <p>Vocabulary</p> <ul style="list-style-type: none"> shelter <p>Connect</p> <ul style="list-style-type: none"> TE/SB p. 164 Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none"> TE/SB pp. 165-166 Video – Things that People Need to Live <i>uInvestigate Lab – What should you wear?*</i> Crosscutting Concepts Toolbox - Patterns* Reading Check - Identify <p>Synthesize</p> <ul style="list-style-type: none"> TE/SB pp. 167-168 Interactivity – People Have Needs Quest Connection* Quest Check-In – A Place to Sit* <p>Demonstrate</p> <ul style="list-style-type: none"> TE/SB p.167 Lesson 3 Quiz

<p>Lesson 4 Life Cycles</p> <p>PE: K-LS1-1</p> <p>SEP: Planning and Carrying Out Investigations* Obtaining, Evaluating, and Communicating Information*</p> <p>DCI:</p> <p>LS1.C – Organization for Matter and Energy Flow in Organisms</p> <ul style="list-style-type: none"> (NYSED) All animals need food, air, and water in order to live, grow, and thrive. Animals obtain food from plants or from other animals. Plants need water, air, and light to live, grow, and thrive. <p>CCC: Patterns*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas</p> <p>Guiding Objective</p> <ul style="list-style-type: none"> Students will recognize that plants and animals grow and change as they go through life cycles. <p>Vocabulary</p> <ul style="list-style-type: none"> life cycle change hatch <p>Connect</p> <ul style="list-style-type: none"> TE/SB p. 170 Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none"> TE/SB pp. 171-172 Video – Life Cycle of a Salmon Investigate Lab – How does a plant grow and change?* <p>Synthesize</p> <ul style="list-style-type: none"> TE/SB pp. 173-177 Interactivity – Life Cycle of a Pepper Plant Reading Check – Alike and Different* Quest Connection* Quest Check-In – How do Caterpillars Change?* <p>Demonstrate</p> <ul style="list-style-type: none"> TE/SB p.175 Lesson 4 Quiz
<p>Topic Close</p> <ul style="list-style-type: none"> Assessment and Remediation TE/SE pp. 178-185 Quest Finding p.176 	<p>Topic 5 Enrichment</p> <p>Topic 5- Lesson 1 Enrichment- TE pp. 153 - This activity extends student understanding of the lesson by encouraging them to work with numbers and colors by drawing flowers.</p> <p>Topic 5- Lesson 2 Enrichment- TE pp. 160 - This activity extends student understanding of the lesson by encouraging them to read and answer questions about an animal scientist. Academic vocabulary used include tool, insect and hunt.</p> <p>Enrichment Skill- Academic Vocabulary</p> <p>Topic 5- Lesson 3 Enrichment- TE pp. 167 - This activity extends student understanding of the lesson by encouraging them to identify the main ideas and details in a story. Students will use observations from the natural world to describe patterns. Enrichment Skill- Patterns</p> <p>Topic 5- Lesson 4 Enrichment- TE pp. 175- This activity provides students the opportunity to view the life cycles of 2 different living things and compare/contrast the cycles by completing a Venn diagram.</p> <p>Enrichment Skill- Patterns</p>

<p>English Language Learners (ELL) Enhancements</p> <p>To access hyperlinked material, you must be logged into your BPS Google Drive</p>	<p><u>Listening</u></p> <ul style="list-style-type: none"> ● <u>Cross- Linguistic Practices</u>: Gives students opportunities to make connections between what they hear and their home language (For example, allow students to listen to a passage and identify cognates.) ● <u>Activating Prior Knowledge</u> Activating prior knowledge means both eliciting from students what they already know and building initial knowledge that they need in order to access upcoming content ● <u>Activating Prior Knowledge</u> ● <u>Visuals</u> - GIFs, pictures- will assist students in understanding what they are listening to. Use <u>visual thinking strategies</u> to set the lens for learning. ● Video to review or introduce a topic – use <u>closed captioning</u> to help students see the words and pronunciations while they listen to the content. ● <u>Word stretching / Vowel stretching</u> when instructing allows student to listen closely to the pronunciation of the word ● <u>Performance Level Descriptors</u> this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of listening Scroll for grade K.
	<p><u>Speaking</u></p> <ul style="list-style-type: none"> ● <u>Sentence Stems/Frames</u> - to begin a sentence - such as <i>Evolution is...</i> or <i>I think that evolution is...</i> ● <u>Academic Conversation Starters</u>: Have a visual of a list of academic sentence starters that students can refer to in a discussion. ● <u>Choral Reading</u> - To build fluency, self-confidence and motivation with <u>reading/speaking</u>. ● Create <u>movement</u> to go with the word. Movement can be a motivating factor, as well as a kinesthetic tool for conceptualizing the rhythm and flow of fluent reading while triggering brain function for optimal learning. ● <u>Performance Level Descriptors</u> This document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of speaking. Scroll for grade K.
	<p><u>Reading</u></p> <ul style="list-style-type: none"> ● Supplementary Text to help reinforce concepts. ● <u>Visual Aids</u> - Pictures or models to support vocabulary words and concepts ● Video to review or introduce a topic - use <u>closed captioning</u> to help students read along while they listen to the content. ● <u>4 Square / Frayer models</u> to help students gain a deeper understanding of vocabulary. ● <u>Highlighting</u> important text to assist students in answering questions after the reading. ● <u>Chunking</u>-Break reading of text into chunks or paragraphs ● <u>Performance Level Descriptors</u> this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of reading. Scroll for grade K. ● <u>Vocabulary Morphology</u>- Morphology relates to the segmenting of words into affixes (prefixes and suffixes) and roots or base words, and the origins of words. Understanding that words connected by meaning can be connected by spelling can be critical to expanding a student's vocabulary
	<p><u>Instructional Accommodations (depending on the student's needs)</u></p> <ul style="list-style-type: none"> ● Extended time for tests in class, projects and assignments ● Directions read. Broken down as necessary ● Model how to complete the activity in the lesson ● Oral simplification of directions or questions ● Translated version of test when available. Student may have both version English and native language version ● Use of <u>approved bilingual glossaries</u> from NYS in each subject

<p>Special Education Modifications Special Education students must have accommodations as per Individual Educational Plan (IEP)</p>	<p><u>Instructional</u></p> <ul style="list-style-type: none"> ● Pre-teach vocabulary ● Use picture vocabulary ● Scaffold Depth of Knowledge questions ● Provide copy of notes/notes in “cloze” form ● Use of Think, Pair, and Share strategy to help process information ● Scaffold written assignments with the use of graphic organizers ● Allow for multiple ways to respond (verbal, written, response board) ● Provide model of performance task ● Modify informational text to fit the needs of the students ● Provide a digital or paper interactive notebook ● Present complex tasks in multiple ways ● Provide mnemonic strategies for scientific concepts <hr/> <p><u>Technology:</u></p> <ul style="list-style-type: none"> ● Audio reading of text ● Text to type functions ● Videos to clarify/visualize science concepts ● Record class lecture/discussions and make accessible to student ● Nearpod- interactive presentations of notes <hr/> <p><u>In Class Assessments</u></p> <ul style="list-style-type: none"> ● Provide multiple options for projects ● Use of timer in class ● Break all complex tasks into chunks
<p>Step Up to Writing Step Up to Writing materials can be found in BPS Science K-12 Schoology Folder K Resources K Curriculum Materials SUTW materials</p>	<ul style="list-style-type: none"> ● Easy Two-Column Notes ● Breaking Down Definitions ● Paragraph Frame- What I Learned ● <u>Performance Level Descriptors</u> this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of writing. Scroll for grade K.
<p>Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom</p>	<ul style="list-style-type: none"> ● Materials, resources, and/or discussions address diverse cultural backgrounds and real-world applications ● Artifacts (posters, charts, etc.) in the science classroom are representative of the cultures of the student population ● All students are given an opportunity to engage in science discourse ● Teacher demonstrates high expectations for all students