Grade K Science
Unit 3 Life Science

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Topic 5 (34 days) – Needs of Living Things
Topic 4 (34 days) – Environments

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.

Unit 3 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-ESS2-2. 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-ESS3-3. Communicate solutions that will reduce the impact of humans on living organisms and non-living things in the local environment. * [Clarification Statement: Examples of human impact on the environment (land, water, air, plants, and animals) 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-ESS3-1. Use a model to represent the relationship between the needs of different plants or 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-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.

Unit 3 NYSSLS Science and Engineering Practices (SEP)

- Planning and Carrying Out Investigations
- Analyzing and Interpreting Data
- Asking Questions and Defining Problems
- Developing and Using Models
- Constructing Explanations and Using Models
- Obtaining, Evaluating, and Communicating Information
- Engaging in Argument from Evidence

Unit 3 NYSSLS Disciplinary Core Ideas (DCI)

- **LS1.C: Organization for Matter and Energy Flow in Organisms**
  - (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. (K-LS1-1
- **ESS2.E: Biogeology**
  - Plants and animals can change their environment. (K-ESS2-2)
- **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)
- **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.
    (secondary to K-ESS2-2), (K-ESS3-3)
- **ETS1.B: Developing Possible Solutions**
  - (NYSED) Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas to other people (secondary to 2-LS2-2)

Unit 3 NYSSLS Cross Cutting Concepts (CCC)

- Cause and Effect
- Patterns
- Systems and System Models

Resources

- Savvas Elevate Science Book NY Grade K Topics 5-6
- Savvas Easybridge (access via BPS Staff Resources or Clever)
- Savvas Lab materials
- http://ngss.nsta.org/Classroom-Resources.aspx

Measurement of Student Learning

- Lesson Quiz
- Topic Assessment and Remediation
- Evidence-Based Assessment
- Quest Rubrics

Savvas Elevate Science Supports

- Topic Differentiated Instruction in TE
- Topic Remediation Summary in TE
- Leveled Readers
- ELL Support in TE
- ELL Vocabulary Support in TE

English Language Learners (ELL) Enhancements To access hyperlinked material, you must be logged into your BPS Google Drive	**Listening** • **Cross- Linguistic Practices:** 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.) • **Activating Prior Knowledge** 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 • **Activating Prior Knowledge** • **Visuals** - GIFs, pictures- will assist students in understanding what they are listening to. Use **visual thinking strategies** to set the lens for learning. • Video to review or introduce a topic – use **closed captioning** to help students see the words and pronunciations while they listen to the content. • **Word stretching / Vowel stretching** when instructing allows student to listen closely to the pronunciation of the word • **Performance Level Descriptors** 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.
	Speaking • **Sentence Stems/Frames** - to begin a sentence - such as *Evolution is…* or *I think that evolution is…* • **Academic Conversation Starters:** Have a visual of a list of academic sentence starters that students can refer to in a discussion. • **Choral Reading** - To build fluency, self-confidence and motivation with reading/speaking • Create **movement** 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 • **Performance Level Descriptors** 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.
	Reading • Supplementary Text to help reinforce concepts. • **Visual Aids** - Pictures or models to support vocabulary words and concepts • Video to review or introduce a topic - use **closed captioning** to help students read along while they listen to the content. • **4 Square / Frayer models** to help students gain a deeper understanding of vocabulary. • **Highlighting** important text to assist students in answering questions after the reading. • **Chunking**-Break reading of text into chunks or paragraphs • **Performance Level Descriptors** 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 grades K. • **Vocabulary Morphology**- 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.

<table>
<tr><td></td><td><u>Instructional Accommodations</u> (depending on the student's needs)
● 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</td></tr>
<tr><td rowspan="3">Special Education Modifications

Special Education students must have accommodations as per Individual Educational Plan (IEP)</td><td><u>Instructional</u>
● 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</td></tr>
<tr><td><u>Technology:</u>
● 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</td></tr>
<tr><td><u>In Class Assessments</u>
● Provide multiple options for projects
● Use of timer in class
● Break all complex tasks into chunks</td></tr>
<tr><td>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</td><td>● 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.</td></tr>
<tr><td>Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom</td><td>● 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</td></tr>
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