Grade K Science
Unit 2 Earth Science

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Topic 3 (24 days) – Sunlight
Topic 4 (34 days) – Earth's Weather

Unit Overview: In this unit students will develop their ideas about the sun and weather. Topic 3 allows student discovery that the Sun gives Earth heat and light. Students will explore how the Sun affects Earth's surface. In Topic 4 students will continue to develop their understanding of weather. Students will investigate factors that affect different kinds of weather; recognize weather patterns and differences in these patterns in various places; and lastly identify seasonal differences in temperature, storms, and plants. Students conclude this topic by modeling and exploring storms.

Unit 2 NYSSLS Performance Expectations (PE)

K-PS1-1. Plan and conduct an investigation to test the claim that different kinds of matter exist as either solid or liquid, depending on temperature. [Clarification Statement: Emphasis should be on solids and liquids at a given temperature and that a solid may be a liquid at higher temperature and a liquid may be a solid at a lower temperature.] [Assessment Boundary: Only a qualitative description of temperature, such as hot, warm, and cool, is expected]

K-PS3-1. 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-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]

K-ESS2-1. 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-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-ESS3-2. 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 and local resources available for preparedness measures.]

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.

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 2 NYSSLS Science and Engineering Practices (SEP)

- Analyzing and Interpreting Data
- Obtaining, Evaluating, and Communicating Information
- Developing and Using Models
- Planning and Carrying Out Investigations
- Asking Questions and Defining Problems

Unit 2 NYSSLS Disciplinary Core Ideas (DCI)

- **PS1.A: Structure and Properties of Matter**
  - Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (K-PS1-4)
- **PS3.B: Conservation of Energy and Energy Transfer**
  - Sunlight warms Earth's surface. (K-PS3-1), (K-PS3-2)
- **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. (K-ESS2-1)
- **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. (K-2-ETS1-1)
- **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 2 NYSSLS Cross Cutting Concepts (CCC)

- Cause and Effect
- Patterns

Resources

- Savvas Elevate Science Book NY Edition Grade K Topics 3-4
- 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 grade 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.

Instructional Accommodations (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 **approved bilingual glossaries** from NYS in each subject

Special Education Modifications

Special Education students must have accommodations as

Instructional

- **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

per Individual Educational Plan (IEP)	• **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 i**nteractive notebook** • Present complex **tasks in multiple ways** • Provide **mnemonic strategies** for scientific concepts
	Technology: • **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
	In Class Assessments • Provide **multiple options** for projects • **Use of timer** in class • Break all complex tasks into chunks
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	• Easy Two-Column Notes • Breaking Down Definitions • Paragraph Frame- What I Learned • **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 writing. Scroll for grade K
Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom	• 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