



Grade K Science
Unit 2 Earth and Space Science
Topic 3 Sunlight - 24 days

Unit Overview: In this unit students will expand on their ideas about the sun and weather. **Topic 3** has students discovering that the Sun gives Earth heat and light. Students will also explore how the Sun affects Earth's surface. In Topic 4 students will expand on their understanding of weather. Students will explore factors that affect different kinds of weather; recognize weather patterns and differences in these patterns in various places; recognize seasonal differences in temperature, storms, and plants; and finally, model and explore storms.

Topic Essential Question: How does sunlight help us?

Lessons

- Topic Launch/Quest Kickoff
- Lesson 1 The Sun
- Lesson 2 Sunlight and the Earth's Surface
- Topic Close –Assessment, Quest Findings

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.]

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-PS1-1, K-PS3-1, K-PS3-2 SEP: Constructing Explanations and Designing Solutions* Planning and Carrying Out Investigations* Analyzing and Interpreting Data* DCI: PS1.A - Structure and Properties of Matter <ul style="list-style-type: none"> 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. PS3.B - Conservation of Energy and energy Transfer <ul style="list-style-type: none"> Sunlight warms Earth’s surface. CCC: Cause and Effect* *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"> <i>u</i>Connect Lab - What can you observe about the Sun?* Quest Kickoff – Keep it Cool* Leveled Readers STEM Engineering Reader Science Song – The Sun
<p>Lesson 1- The Sun PE: K-PS1-1, K-PS3-1 SEP: Analyzing and Interpreting Data* DCI: PS1.A - Structure and Properties of Matter <ul style="list-style-type: none"> 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. PS3.B - Conservation of Energy and energy Transfer <ul style="list-style-type: none"> Sunlight warms Earth’s surface CCC: Cause and Effect* *Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective <ul style="list-style-type: none"> Students will describe the Sun. Vocabulary <ul style="list-style-type: none"> star Connect <ul style="list-style-type: none"> TE/SB p. 78 Jumpstart Discovery Investigate <ul style="list-style-type: none"> TE/SB pp. 79-80 <i>u</i>Investigate Lab - What can the Sun do?* Video – The Sun Literacy Toolbox – Picture Clues Synthesize <ul style="list-style-type: none"> TE/SB pp. 81-82 Interactivity – The Sun Quest Connection* Quest Check-In – Staying Cool* Demonstrate <ul style="list-style-type: none"> TE/SB p.82 Lesson 1 Quiz </p>

<p><u>Lesson 2 Sunlight and the Earth’s Surface</u> PE: K-PS1-1; K-PS3-1; K-PS-3-2 SEP: Planning and Carrying Out Investigations* DCI: PS1.A - Structure and Properties of Matter</p> <ul style="list-style-type: none"> 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. <p>PS3.B - Conservation of Energy and energy Transfer</p> <ul style="list-style-type: none"> Sunlight warms Earth’s surface <p>CCC: Cause and Effect*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective</p> <ul style="list-style-type: none"> Students will observe how sunlight warms everything on the Earth’s surface. <p>Vocabulary</p> <ul style="list-style-type: none"> Earth <p>Connect</p> <ul style="list-style-type: none"> TE/SB p. 86 Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none"> TE/SB pp. 87-90 Video – Sunlight and Earth’s Surface uInvestigate Lab – Which objects change in the Sun?* Engineering Practice – Toolbox – Plan an Investigation* <p>Synthesize</p> <ul style="list-style-type: none"> TE/SB pp. 90-91 Interactivity - How Can the Sun Make Temperature Change? Quest Connection* <p>Demonstrate</p> <ul style="list-style-type: none"> TE/SB pp.91-92 Lesson 2 Quiz Quest Check-In Lab – Which material makes the best roof?*
<p><u>Topic Close</u></p> <ul style="list-style-type: none"> Assessment and Remediation TE/SE pp. 94-101 Quest Finding p.92 	<p><u>Topic 3 Enrichment</u> Topic 3- Lesson 1 Enrichment - TE p.82 - This activity extends student understanding of the lesson by encouraging them to identify objects in the sky. Enrichment Skill- Categorize</p> <p>Topic 3- Lesson 2 Enrichment - TE p.91 - This activity provides student reinforcement in understanding the effects of sunlight on Earth’s surfaces. Enrichment Skill- Brainstorming</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

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<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 ● 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.
<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