



Grade 1 Science
Unit 2 Earth and Space Science
Topic 3 Sky and Earth - 30 days

Unit Overview: In **Topic 3** students will learn that the Sun is a star that provides heat and light to Earth; Earth's movement around the Sun produces seasons; and Earth's rotation produces day and night. Students will also learn that the moon rotates on its axis as it revolves around Earth. Topic 4 consists of two lessons. In lesson 1 students will learn about different weather types and the tools scientists can use to study weather. Lesson 2 will focus on how Earth receives different amounts of sunlight during the changing seasons and how this difference can affect temperature and precipitation.

Topic Essential Question: How does sunlight help us?

Lessons

- Topic Launch/Quest Kickoff
- Lesson 1 Observe the Sky
- Lesson 2 Patterns in the Sky
- Lesson 3 Daylight Changes and Seasons
- Topic Close - Assessment, Quest Findings

NYSSLS Performance Expectations (PE)

1-ESS1-1. Use observations of the Sun, moon, and stars to describe patterns that can be predicted. [Clarification Statement: Examples of patterns could include that the Sun and moon appear to rise along the eastern horizon, move in a predictable pathway across the sky, and set along the western horizon; and stars other than our Sun are visible at night depending on weather and other conditions such as light pollution but not visible during the day.] [Assessment Boundary: Assessment of star patterns is limited to stars being seen at night and not during the day.]

1-ESS1-2. Make observations at different times of year to relate the amount of daylight to the time of year. [Clarification Statement: Emphasis is on relative comparisons of the amount of daylight in the winter to the amount in the spring or fall.] [Assessment Boundary: Assessment is limited to relative amounts of daylight, not quantifying the hours or time of daylight.]

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. Grade 1 HOTS include:

- sequencing
- categorizing
- identifying patterns
- cause and effect
- researching
- brainstorming
- logic
- reasoning
- inferencing
- academic vocabulary

<p>Topic Opener PE: 1-ESS1-1, 1-ESS1-2, K-2 ETS1-1, K-2 ETS1-2 SEP: Asking Questions and Defining Problems* Developing and Using Models* Planning and Carrying Out Investigations* Analyzing and Interpreting Data* DCI: ESS1.A – The Universe and its Stars <ul style="list-style-type: none"> Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. ESS1.B – Earth and the Solar System <ul style="list-style-type: none"> Seasonal patterns of sunrise and sunset can be observed, described, and predicted. 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 – Which way will it point?* Quest Kickoff – Sky Watchers* Leveled Readers STEM Engineering Reader Science Song – The Sun
<p>Lesson 1 - Observe the Sky PE: 1-ESS1-1 SEP: Analyzing and Interpreting Data* Developing and Using Models* Planning and Carrying Out Investigations* DCI: ESS1.A - The Universe and its Stars <ul style="list-style-type: none"> Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. *Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective <ul style="list-style-type: none"> Students will observe the Sun, the moon, and the stars. Vocabulary <ul style="list-style-type: none"> star sun gravity Connect <ul style="list-style-type: none"> TE/SB p. 80 Jumpstart Discovery Investigate <ul style="list-style-type: none"> TE/SB pp. 81-82 uInvestigate Lab – Why is it hard to see stars during the day?* Video – Observe the Sky Literacy Toolbox – Picture Clues Synthesize <ul style="list-style-type: none"> TE/SB pp. 83-85 Interactivity – Day Sky* Quest Connection Quest Check-In – Stars in the Sky* Demonstrate <ul style="list-style-type: none"> TE/SB p.85 Lesson 1 Quiz </p>

<p><u>Lesson 2 Patterns in the Sky</u> PE: 1-ESS1-1, 1-ESS1-2, K-2 ETS1-2 SEP: Planning and Carrying Out Investigations* Obtaining, Evaluating, and Communicating Information* DCI: ESS1.A - The Universe and its Stars</p> <ul style="list-style-type: none"> ● Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. <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 be able to identify what causes day and night and moon phases. <p>Vocabulary</p> <ul style="list-style-type: none"> ● rotation ● sunrise ● sunset ● moon phase <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. 87-88 ● Video – Patterns in the Sky* ● uInvestigate Lab – How can you observe sun patterns?* <p>Synthesize</p> <ul style="list-style-type: none"> ● TE/SB pp. 89-92 ● Interactivity – Patterns in the Night Sky* ● Reading Check – Picture Clues* ● Quest Connection* ● Quest Check-In - Moon Patterns* <p>Demonstrate</p> <ul style="list-style-type: none"> ● TE/SB p.92 ● Lesson 2 Quiz
<p><u>Lesson 3 Daylight Changes and Seasons</u> PE:1-ESS1-2, K-2 ETS1-2 SEP: Planning and Carrying Out Investigations* Developing and Using Models* Analyzing and Interpreting Data* DCI: ESS1.A - The Universe and its Stars</p> <ul style="list-style-type: none"> ● Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. <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 be able to explain why days have different lengths during different seasons. <p>Vocabulary</p> <ul style="list-style-type: none"> ● seasons <p>Connect</p> <ul style="list-style-type: none"> ● TE/SB p. 94 ● Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none"> ● TE/SB pp. 95-96 ● Video – Daylight Changes and Seasons* ● uInvestigate Lab – How does the sun cause seasons?* <p>Synthesize</p> <ul style="list-style-type: none"> ● TE/SB pp. 96-97 ● Interactivity – Seasons Around the World ● Quest Connection <p>Demonstrate</p> <ul style="list-style-type: none"> ● TE/SB pp.97-98 ● Lesson 3 Quiz ● Quest Check-In Lab – How can you model the motions of Earth? *

<p>Topic Close</p> <ul style="list-style-type: none"> • Assessment and Remediation TE/SE pp. 104-109 • Quest Finding TE/SB p. 102 	<p>Topic 3 Enrichment</p> <p>Topic 3- Lesson 1 Enrichment- TE p. 84 This activity extends student understanding of the lesson by providing reinforcement about how gravity affects space travel.</p> <p>Enrichment Skill- Brainstorm</p> <p>Topic 3- Lesson 2 Enrichment- TE p. 89 This activity provides student reinforcement in understanding the patterns seen in United States time zones.</p> <p>Enrichment Skill- Patterns</p> <p>Topic 3- Lesson 3 Enrichment- TE p. 96 This activity provides students the opportunity to find ways to model changes in shadows during different seasons.</p> <p>Enrichment Skill- Cause and Effect.</p>
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<p>English Language Learners (ELL) Enhancements</p> <p>To access hyperlinked material, you must be logged into your BPS Google Drive</p>	<p>Listening</p> <ul style="list-style-type: none"> • 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 1.
	<p>Speaking</p> <ul style="list-style-type: none"> • Sentence Stems/Frames - to begin a sentence - such as <i>Evolution is...</i> or <i>I think that evolution is...</i> • 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 1.
	<p>Reading</p> <ul style="list-style-type: none"> • 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

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	<ul style="list-style-type: none"> ● 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 1. ● 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
	<p>Instructional Accommodations (depending on the student's needs)</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 approved bilingual glossaries from NYS in each subject

<p>Special Education Modifications Special Education students must have accommodations as per Individual Educational Plan (IEP)</p>	<p>Instructional</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
	<p>Technology:</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
	<p>In Class Assessments</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 Gr 1 Resources Gr 1 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 1.
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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