



Grade 2 Science Unit # 2 Earth Science

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Topic 3 (30 days) – Earth’s Water and Land
Topic 4 (28 days) – Earth’s Processes

Unit Overview: In this unit students will read about various bodies of water and landforms and learn about their features. Students will explore maps and learn to find places on them, learning to use the key and the scale on the map. Students will learn that Earth is constantly changing in a variety of ways. Earth can change quickly or slowly. Students will make and use models to compare and analyze design solutions that slow or prevent weathering due to wind and water to protect areas of human development.

Unit 2 NYSSLS Performance Expectations (PE)

- 2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.**
 [Clarification Statement: Examples of events and timescales could include volcanic explosions and earthquakes, which happen quickly and weathering and erosion of rocks, which may occur slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.]
- 2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.**
 [Clarification Statement: Examples of solutions could include different designs for using rocks, shrubs, grass, and trees to hold back wind, water, and land.]
- 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.** [Assessment Boundary: Assessment does not include quantitative scaling in models.]
- 2-ESS2-3. Obtain information to identify where water is found on Earth and that it can be solid or liquid.**
- 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.**

Unit 2 NYSSLS Science and Engineering Practices (SEP)

- Obtaining, Evaluating, and Communicating Information
- Developing and Using Models
- Constructing Explanations and Designing Solutions

Unit 2 NYSSLS Disciplinary Core Ideas (DCI)

- ESS2.B: Plate Tectonics and Large-Scale System Interactions**
- Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2- 2)
- ESS2.C: The Roles of Water in Earth’s Surface Processes**
- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3)
- ETS1.C: Optimizing the Design Solution**
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (K-2-ETS1-3)
- ESS1.C: The History of Planet Earth**
- Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (2-ESS1-1)
- ESS2.A: Earth Materials and Systems**
- Wind and water can change the shape of the land. (2- ESS2-1)
- ETS1.B: Developing Possible Solutions**
- 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. (K-2-ETS1-2)

Unit 2 NYSSLS Cross Cutting Concepts (CCC)

- Patterns
- Scale, Proportion, and Quantity
- Structure and Function
- Stability and Change

Resources

- Savvas Elevate Science Book NY Edition Grade 2 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
- Exam view Assessment

Savvas Elevate Science Supports

- Topic Differentiated Instruction in TE
- Topic Remediation Summary in TE
- 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 2.

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 2.

Reading

	<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 ● 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 2. ● 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 <hr/> <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 <hr/> <p>Technology:</p>

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	<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><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 -->Gr 2 Resources -->Gr 2 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 2.
<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