



**Grade 2 Science**  
**Unit 2 Earth and Space Science**  
**Topic 3 Earth's Land and Water 30 days**

**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.

**Topic Essential Question:** How can you describe land and water on Earth?

**Lessons**

- Topic Launch/Quest Kickoff
- Lesson 1 Describe Earth's Surface
- Lesson 2 Water on Earth
- Lesson 3 Map Land and Water
- Topic Close - Assessment, Quest Findings

**NYSSLS Performance Expectations (PE)**

**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.**

**Higher Order Thinking (HOTS)**

Higher Order Thinking Skills (HOTS) will be identified within each topic plan. Grade 2 HOTS include:

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

<p><b>Topic Opener</b>  <b>PE:</b> 2-ESS2-1, 2-ESS2-2, 2-ESS2-3  <b>SEP:</b> Obtaining, Evaluating, and Communicating Information*  <b>DCI:</b>  <b>ESS2.B</b> – Plate Tectonics and Large-Scale System Interactions</p> <ul style="list-style-type: none"> <li>• Maps show where things are located. One can map the shapes and kinds of land and water in any area.</li> </ul> <p><b>*Denotes Higher Order Thinking Skill</b></p>	<p><b>Savvas</b>  <b>Highlighted labs are important to the understanding of the instructional concepts in this lesson and must be completed during Science instructional time.</b></p> <ul style="list-style-type: none"> <li>• <b><i>u</i>Connect Lab – What covers most of the surface of the Earth?*</b></li> <li>• Quest Kickoff – Map Your Hike?*</li> <li>• Leveled Readers</li> <li>• STEM Engineering Reader</li> <li>• Science Song – Water, Air, and Land</li> </ul>
<p><b>Lesson 1 – Describe Earth’s Surface</b>  <b>PE:</b> 2-ESS2-2, 2-ESS2-3  <b>SEP:</b> Obtaining, Evaluating, and Communicating Information*          Developing and Using Models*  <b>DCI:</b>  <b>ESS2.B</b> – Plate Tectonics and Large-Scale System Interaction</p> <ul style="list-style-type: none"> <li>• Maps show where things are located. One can map the shapes and kinds of land and water in any area.</li> </ul> <p><b>ESS2.C</b> - The Roles of Water in Earth’s Surface Processes</p> <ul style="list-style-type: none"> <li>• Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.</li> </ul> <p><b>*Denotes Higher Order Thinking Skill</b></p>	<p><b>Savvas</b>  <b>Guiding Objective</b></p> <ul style="list-style-type: none"> <li>• Students will identify different landforms on Earth’s surface.</li> </ul> <p><b>Vocabulary</b></p> <ul style="list-style-type: none"> <li>• landform</li> <li>• slope</li> <li>• plains</li> <li>• plateau</li> <li>• canyon</li> </ul> <p><b>Connect</b></p> <ul style="list-style-type: none"> <li>• TE/SB p. 82</li> <li>• Jumpstart Discovery*</li> </ul> <p><b>Investigate</b></p> <ul style="list-style-type: none"> <li>• TE/SB pp. 83-84</li> <li>• <b><i>u</i>Investigate Lab – How can you make a map of a special place?*</b></li> <li>• Video – Describe Earth’s Surface</li> <li>• Reading Check – Picture Clues*</li> <li>• Quest Connection*</li> </ul> <p><b>Synthesize</b></p> <ul style="list-style-type: none"> <li>• TE/SB pp. 85-86</li> <li>• Interactivity – What is that landform?</li> <li>• Literacy Toolbox – Picture Clues*</li> </ul> <p><b>Demonstrate</b></p> <ul style="list-style-type: none"> <li>• TE/SB p.87</li> <li>• Lesson 1 Quiz</li> <li>• <b>Quest Check-In Lab – How can you model landforms?*</b></li> </ul>

<p><b><u>Lesson 2 Water on Earth</u></b>  <b>PE:</b> 2-ESS2-2, 2-ESS2-3, K-2 ETS1-3  <b>SEP:</b> Developing and Using Models*          Constructing Explanations and Designing Solutions*  <b>DCI:</b>  <b>ESS2.B</b> – Plate Tectonics and Large-Scale System Interaction  <ul style="list-style-type: none"> <li>Maps show where things are located. One can map the shapes and kinds of land and water in any area.</li> </ul> <b>ESS2.C</b> - The Roles of Water in Earth’s Surface Processes  <ul style="list-style-type: none"> <li>Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.</li> </ul> <b>ETS1.C: Optimizing the Design Solution</b>  <ul style="list-style-type: none"> <li>Because there is always more than one possible solution to a problem, it is useful to compare and test designs.</li> </ul> <b>CCC:</b> Patterns*   <b>*Denotes Higher Order Thinking Skill</b></p>	<p><b>Savvas</b>  <b>Guiding Objective</b>  <ul style="list-style-type: none"> <li>Students will identify different bodies of water. Students will be able to explain if a body of water is solid or liquid.</li> </ul> <b>Vocabulary</b>  <ul style="list-style-type: none"> <li>fresh water</li> <li>glacier</li> </ul> <b>Connect</b>  <ul style="list-style-type: none"> <li>TE/SB p. 90</li> <li>Jumpstart Discovery</li> </ul> <b>Investigate</b>  <ul style="list-style-type: none"> <li>TE/SB pp. 91-92</li> <li>Video – Water on Earth*</li> <li><b>Investigate Lab – Where is the best place to cross the water?*</b></li> <li>Reading Check – Picture Clue*</li> </ul> <b>Synthesize</b>  <ul style="list-style-type: none"> <li>TE/SB pp. 93-95</li> <li>Interactivity – Water, Water Everywhere</li> <li>Quest Connection*</li> <li>Quest Check-In – Describe Earth’s Water*</li> </ul> <b>Demonstrate</b>  <ul style="list-style-type: none"> <li>TE/SB p.94</li> <li>Lesson 2 Quiz</li> </ul> </p>
<p><b><u>Lesson 3 Map Land and Water</u></b>  <b>PE:</b> 2-ESS2-2  <b>SEP:</b> Developing and Using Models*          Obtaining, Evaluating, and Communicating Information*  <b>DCI:</b>  <b>ESS2.B</b> – Plate Tectonics and Large-Scale System Interaction  <ul style="list-style-type: none"> <li>Maps show where things are located. One can map the shapes and kinds of land and water in any area.</li> </ul> <b>CCC:</b> Scale, Proportion, and Quantity*   <b>*Denotes Higher Order Thinking Skill</b></p>	<p><b>Savvas</b>  <b>Guiding Objective</b>  <ul style="list-style-type: none"> <li>Students will use maps to show where land and water are on Earth.</li> </ul> <b>Vocabulary</b>  <ul style="list-style-type: none"> <li>model</li> <li>key</li> <li>scale</li> </ul> <b>Connect</b>  <ul style="list-style-type: none"> <li>TE/SB p. 98</li> <li>Jumpstart Discovery*</li> </ul> <b>Investigate</b>  <ul style="list-style-type: none"> <li>TE/SB pp. 99-100</li> <li>Video – Mapping Land and Water</li> <li><b>Investigate Lab – Why do mapmakers use different maps?*</b></li> <li>Visual Literacy*</li> </ul> <b>Synthesize</b>  <ul style="list-style-type: none"> <li>TE/SB pp. 100-101</li> <li>Interactivity – Map and Go</li> <li>Crosscutting Concept Toolbox- Scale, Proportion, and Quantity*</li> <li>Quest Connection*</li> </ul> <b>Demonstrate</b>  <ul style="list-style-type: none"> <li>TE/SB pp.101</li> <li>Lesson 3 Quiz</li> <li><b>Quest Check-In Lab – How far is it from here to there?*</b></li> </ul> </p>

<p><b>Topic Close</b></p> <ul style="list-style-type: none"> <li>• Assessment and Remediation TE/SE pp. 106-111</li> <li>• Quest Finding TE/SB p. 104</li> </ul>	<p><b>Topic 3 Enrichment</b></p> <p><b>Topic 3 - Lesson 1 Enrichment</b> - TE p. 85 - This activity extends student understanding of the lesson by having students research unusual landforms.</p> <p><b>Enrichment Skill - Research</b></p> <p><b>Topic 3 - Lesson 2 Enrichment</b> - TE p. 93 -This activity provides student reinforcement in the lesson by having students research vernal pools.</p> <p><b>Enrichment Skill- Research</b></p>
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<p><b>English Language Learners (ELL) Enhancements</b></p> <p>To access <a href="#">hyperlinked</a> material, you must be logged into your BPS Google Drive</p>	<p><b>Listening</b></p> <ul style="list-style-type: none"> <li>• <b>Cross- Linguistic Practices:</b> 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).</li> <li>• <b>Activating Prior Knowledge</b> 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.</li> <li>• <b>Activating Prior Knowledge</b></li> <li>• <b>Visuals</b> - GIFs, pictures- will assist students in understanding what they are listening to. Use <b>visual thinking strategies</b> to set the lens for learning.</li> <li>• Video to review or introduce a topic – use <b>closed captioning</b> to help students see the words and pronunciations while they listen to the content.</li> <li>• <b>Word stretching / Vowel stretching</b> when instructing allows student to listen closely to the pronunciation of the word.</li> <li>• <b>Performance Level Descriptors</b> 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.</li> </ul>
	<p><b>Speaking</b></p> <ul style="list-style-type: none"> <li>• <b>Sentence Stems/Frames</b> - to begin a sentence - such as <i>Evolution is...</i> or <i>I think that evolution is...</i></li> <li>• <b>Academic Conversation Starters:</b> Have a visual of a list of academic sentence starters that students can refer to in a discussion.</li> <li>• <b>Choral Reading</b> - To build fluency, self-confidence and motivation with <a href="#">reading/speaking</a></li> <li>• Create <b>movement</b> 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</li> <li>• <b>Performance Level Descriptors</b> 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.</li> </ul>
	<p><b>Reading</b></p> <ul style="list-style-type: none"> <li>• Supplementary Text to help reinforce concepts.</li> <li>• <b>Visual Aids</b> - Pictures or models to support vocabulary words and concepts</li> <li>• Video to review or introduce a topic - use <b>closed captioning</b> to help students read along while they listen to the content.</li> <li>• <b>4 Square / Frayer models</b> to help students gain a deeper understanding of vocabulary.</li> <li>• <b>Highlighting</b> important text to assist students in answering questions after the reading.</li> <li>• <b>Chunking</b>-Break reading of text into chunks or paragraphs</li> <li>• <b>Performance Level Descriptors</b> 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.</li> <li>• <b>Vocabulary Morphology</b>- 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.</li> </ul>

Grade 2 Unit 2 Earth and Space Science

**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 per Individual Educational Plan (IEP)

**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
- **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

**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 Grade 2 Resources Grade 2 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 2.

Grade 2 Unit 2 Earth and Space Science

**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