

Winslow Township School District

Grade 2 Science

Unit 4: Our Earth, Weather, and Space

Overview: In this unit of study, students use information and models to identify and represent the shapes and kinds of land and bodies of water in an area and where water is found on Earth. Students demonstrate grade-appropriate proficiency in developing and using models and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas

Overview	Standards for Science	Unit Focus	Essential Questions
<p><u>Unit 4</u></p> <p style="text-align: center;">Our Earth, Weather, and Space</p>	<ul style="list-style-type: none"> • 2-ESS2-2 • 2-ESS2-3 • 2-PS1-1 • WIDA 1,4 	<ul style="list-style-type: none"> • Observing patterns in the natural world. • Obtaining information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) and other media that will be useful in answering a scientific question. • Obtaining information to identify where water is found on Earth and to communicate that it can be a solid or liquid. • Developing a model to represent patterns in the natural world. • Developing a model to represent the shapes and kinds of land and bodies of water in an area. • Making observations from several sources to construct an evidence- based account for natural phenomena. • Comparing multiple solutions to a problem. • Asking questions, make observations, and gather information about a situation people want to change. • Defining a simple problem that can be solved through the development of a new or improved object or tool. • Developing a simple model based on evidence to represent a proposed object or tool. • Developing 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. 	<ul style="list-style-type: none"> • How are the different types of water and land useful to people? • What changes earth’s surface? • What are rocks, sand, and soil? • What can we learn from fossils? • How does weather change? • Why do we measure weather? • What is the water cycle? • What are stars and planets? • What causes day and night? • Why does the moon seem to change? • What causes the seasons?
<p><i>Unit 4: Enduring Understandings</i></p>	<ul style="list-style-type: none"> • Water is a natural resource with many uses. • Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. • Weather can be observed and forms recognizable patterns. • Weather changes can be measured through the use of technology. • Precipitation, evaporation, and condensation are part of the water cycle. • The stars and planets are always in the sky. • The Earth’s revolution and rotation are responsible for the seasons, as well as day and night. 		

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Curriculum Unit 4	Standards		Pacing	
			Days	Unit Days
Unit 4: Our Earth, Weather, and Space	2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area.	10	45
	2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.	10	
	2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	10	
	Assessment, Re-teach and Extension		6	

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Disciplinary Core Ideas	Indicator #	Indicator
<p>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)</p>	2-ESS2-2	Develop a model to represent the shapes and kinds of land and bodies of water in an area.
	2-ESS2-3	Obtain information to identify where water is found on Earth and that it can be solid or liquid.
<p>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)</p> <p>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. (2-PS1-1)</p>	2-PS1-1	Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

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• Assessment Plan

- Class discussions
- Independent & group work/projects
- Teacher and/or book series provided quizzes, tests, and a performance task to assess student mastery
- Homework monitor and assess class work
- Benchmark assessments
- Teacher Observations
- Performance Tasks
- Short Constructed Responses

- Observe patterns in the natural world.
- Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) and other media that will be useful in answering a scientific question.
- Obtain information to identify where water is found on Earth and to communicate that it can be a solid or liquid.
- Develop a model to represent patterns in the natural world.
- Develop a model to represent the shapes and kinds of land and bodies of water in an area.

Resources

- Chromebooks
- HSP Science Teacher Manual
- Lab Explorations
- Big Books pg.
- Leveled Readers
- Activity book
- Vocab activities and cards
- Group discussions
- Manipulatives
- SMARTboard / Mimio Technology
- Google Applications (Documents, Forms, Spreadsheets, Presentation)
- Linkit
- Readworks website
- [NJ Department of Education](#)
- Harcourt HSP New Jersey Science textbook
- HSP Lab Manual
- HSP New Jersey Science-Teacher’s Inquiry Tool Kit
- Lesson Planner Resource Pages
- Science Leveled Readers and Science Guides
- HSP Science eBook
- Chromebooks
- Anchor Charts

Activities

- [Making a Landform Model](#): Students first explore the concept of making models by using home-made dough to create landforms. How and why people use models are then explained.
- [Planning a Landform Model](#): Students will design and create a model of their own island that includes several types of landforms and bodies of water.
- [Build a Watershed PBS](#): Students will build a physical model of a watershed and then make observations about how rain water travels over the land, eventually forming rivers and lakes. As an extension, the students take a bucket of water and make observations using actual earth materials.
- [Where in the World is Water?](#) Students will explore an interaction “globe” tossing activity, a measuring and analysis of water; and a discussion about conserving water.
- [Where is Water Found on Earth](#): Students will engage in technology as text and media and “jigsaw” their expertise about glaciers, rivers and oceans. Last, students present and then make a chart comparing their bodies of water.
- [Glaciers in Alaska](#): Students will watch a video about landscapes covered with slow moving masses of ice (fields) called glaciers.
- [Earth is the Water Planet Video](#): Students will watch a video to further understand how water was formed on Earth and why water is so important to Earth. It also highlights where water, in its different states, is located on Earth.

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Instructional Best Practices and Exemplars

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| <ol style="list-style-type: none"> 1. Identifying similarities and differences 2. Summarizing and note taking 3. Reinforcing effort and providing recognition 4. Homework and practice 5. Nonlinguistic representations | <ol style="list-style-type: none"> 6. Cooperative learning 7. Setting objectives and providing feedback 8. Generating and testing hypotheses 9. Cues, questions, and advance organizers 10. Manage response rates |
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9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, Preparation and Training & 9.4 Life Literacies and Key Skills

- 9.4.2.CI.2:** Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
- 9.4.2.CT.1:** Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).
- 9.4.2.CT.2:** Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
- 9.4.2.CT.3:** Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
- 9.4.2.DC.7:** Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).
- 9.4.2.IML.1:** Identify a simple search term to find information in a search engine or digital resource.
- 9.4.2.IML.2:** Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).
- 9.4.2.IML.3:** Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).
- 9.4.2.IML.4:** Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic) (e.g., 2.2.2.MSC.5, RL.2.9).
- 9.4.2.TL.1:** Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).
- 9.4.2.TL.2:** Create a document using a word processing application.
- 9.4.2.TL.4:** Navigate a virtual space to build context and describe the visual content.
- 9.4.2.TL.6:** Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5).
- 9.4.2.TL.7:** Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).
- The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.

Additional opportunities to address 9.1, 9.2 & 9.4:

Philadelphia Mint

<https://www.usmint.gov/learn/kids/resources/educational-standards>

Different ways to teach Financial Literacy.

<https://www.makeuseof.com/tag/10-interactive-financial-websites-teach-kids-money-management-skills/>

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Modifications for Special Education/504

Students with special needs: The students' needs will be addressed on an individual and grade level using a variety of modalities.

Accommodations will be made for those students who need extra time to complete assignment. Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

- Small group instruction
- Audio books/ Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Modeling and guided practice
- Read directions aloud
- Repeat, rephrase and clarify directions
- Extended time as needed
- Break down assignments into smaller units
- Provide shortened assignments
- Modify testing format
- Repeat directions as needed
- Graphic organizers
- Study Guides, Study Aids and Re teaching as needed

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Modifications for At-Risk Students

Formative and summative data will be used to monitor student success. At first signs of failure, student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations

- Audio books and Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Extended time as needed
- Read directions aloud
- Assist with organization
- Use of computer
- Emphasize/highlight key concepts
- Recognize success
- Provide timelines for work completion
- Break down multi-step tasks into smaller chunks
- Provide copy of class notes and graphic organizer

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English Language Learners	Modifications for Gifted Students
<p>All WIDA Can Do Descriptors can be found at this link: https://wida.wisc.edu/teach/can-do/descriptors</p> <p><input type="checkbox"/> Grade 2 WIDA Can Do Descriptors:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing <input type="checkbox"/> Oral Language <p>Students will be provided with accommodations and modifications that may include:</p> <ul style="list-style-type: none"> • Relate to and identify commonalities in science studies in student’s home country • Assist with organization • Use of computer • Emphasize/highlight key concepts • Teacher Modeling • Peer Modeling • Label Classroom Materials - Word Walls 	<p>Students excelling in mastery of standards will be challenged with complex, high level challenges related to the topic.</p> <ul style="list-style-type: none"> • Raise levels of intellectual demands • Require higher order thinking, communication, and leadership skills • Differentiate content, process, or product according to student’s readiness, interests, and/or learning styles • Provide higher level texts • Expand use of open-ended, abstract questions • Critical and creative thinking activities that provide an emphasis on research and in-depth study • Enrichment Activities/Project-Based Learning/ Independent Study <p>Additional Strategies may be located at the links:</p> <ul style="list-style-type: none"> ❖ Gifted Programming Standards ❖ Webb’s Depth of Knowledge Levels and/or Revised Bloom’s Taxonomy ❖ REVISED Bloom’s Taxonomy Action Verbs

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Interdisciplinary Connections

Interdisciplinary Connections:

ELA Standards:

RI.2.1 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (2-PS1-4)

RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-PS1-4)

RI.2.8 Describe how reasons support specific points the author makes in a text. (2-PS1-2),(2-PS1- 4)

W.2.1 Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., because, and, also) to connect opinion and reasons, and provide a concluding statement or section. (2-PS1-4)

W.2.6 With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers. (K-2-ETS1-1),(K-2-ETS1- 3)

W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2- PS1-1),(2-PS1- 2),(2-PS1-3)

W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-PS1-1),(2-PS1-2),(2- PS1-3)

SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (K-2-ETS1- 2)

Math Standards:

MP.2 Reason abstractly and quantitatively. (2-PS1-2)

MP.4 Model with mathematics. (2- PS1-1),(2-PS1-2)

MP.5 Use appropriate tools strategically. (2-PS1-2)

2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. (2-PS1-1),(2-PS1-2)

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Integration of Computer Science and Design Thinking NJSL 8

- 8.1.2.NI.2:** Describe how the Internet enables individuals to connect with others worldwide.
- 8.1.2.NI.4:** Explain why access to devices need to be secured.
- 8.1.2.DA.1:** Collect and present data, including climate change data, in various visual formats
- 8.1.2.DA.2:** Store, copy, search, retrieve, modify, and delete data using a computing device.
- 8.1.2.DA.3:** Identify and describe patterns in data visualizations.
- 8.1.2.DA.4:** Make predictions based on data using charts or graphs.
- 8.2.2.ED.1:** Communicate the function of a product or device.
- 8.2.2.ED.3:** Select and use appropriate tools and materials to build a product using the design process.
- 8.2.2.ED.4:** Identify constraints and their role in the engineering design process.
- 8.2.2.ITH.2:** Explain the purpose of a product and its value.
- 8.2.2.ITH.3:** Identify how technology impacts or improves life.
- 8.2.2.ETW.1:** Classify products as resulting from nature or produced as a result of technology.
- 8.2.2.ETW.2:** Identify the natural resources needed to create a product.
- 8.2.2.EC.1:** Identify and compare technology used in different schools, communities, regions, and parts of the world.