Grade 2 - Unit 2 - Erosion & Earth's Surface

Mission Statement
The primary goal of the Swedesboro-Woolwich School District is to prepare each student with the real life skills needed to compete in a highly competitive global economy. This will be achieved by providing a comprehensive curriculum, the integration of technology, and the professional services of a competent and dedicated faculty, administration, and support staff. Guiding this mission will be Federal mandates, including No Child Left Behind, the New Jersey Core Curriculum Content Standards, and local initiatives addressing the individual needs of our students as determined by the Board of Education. The diverse resources of the school district, which includes a caring PTO and active adult community, contribute to a quality school system. They serve an integral role in supporting positive learning experiences that motivate, challenge and inspire children to learn.

Unit/Module 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 will also apply their understanding of the idea that wind and water can change the shape of land to compare design solutions to slow or prevent such change. The crosscutting concept of patterns; stability and change; structure and function; and the influence of engineering, technology, and science on society and the natural world is called out as an organizing concept for these disciplinary core ideas. Students demonstrate grade-appropriate proficiency in developing and using models; obtaining, evaluating, and communicating information; asking questions and defining problems; and constructing explanations and designing solutions. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Standards Covered in Current Unit/Module	
Related Standards and Learning Goals	
SCI.K-2-ETS1-1	Ask questions, make observations, and gather information about a situation people want to change (e.g., climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.
SCI.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.
SCI.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.
SCI.2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.
Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.
SCI.2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.
SCI.2-ESS2-2 Develop a model to represent the shapes and kinds of land and bodies of water in an area.
SCI.2-ESS2-3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.
TECH.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).
TECH.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).

Disciplinary Core Ideas

- 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)

Science and Engineering Practices

- Developing and Using Models
  - Develop a model to represent patterns in the natural world. (2-ESS2-2)
- Obtaining, Evaluating, and Communicating Information
  - 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. (2-ESS2-3)

Crosscutting Concepts

- Patterns
  - Patterns in the natural world can be observed. (2-ESS2-2, 2-ESS2-3)

Learning Targets	Essential Questions
• I can analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs . • I can ask questions, make observations, and gather information about a situation people want to change (e.g. climate change) to define a simple problem that can be solved through the development of a new or improved object or tool.	• How can we identify where water is found on Earth and if it is solid or liquid? • In what ways can you represent the shapes and kinds of land and bodies of water in an area?

• I can compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. • I can develop a model to represent the shapes and kinds of land and bodies of water in an area • I can 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. • I can use information from several sources to provide evidence that Earth events can occur quickly or slowly.	

Unit/Module Weekly Learning Activities and Pacing Guide			
Topic & # Days	**NJ Standards**	**Critical Knowledge & Skills**	**Possible Resources & Activities**
Unit 2 1 day	• 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.	**Obj. We are learning to**: • Targets Listed Above **Suggested Formative Assessment(s)**: • Graphic Organizers • Mystery Science Formative Assessments • Mystery Science Summative Assessments • Plant Drawings • Plant Pattern Recordings	Activities: • Anchor Phenomenon: • Strange River Materials • Mystery Science Lessons • Read Alouds • Cross Cut Weather Reading Activities • Mystery Labs • Additional Hands on Activities • Teacher Devised or Created Worksheets • Barinpop Jr. • Philadelphia Zoo Unless Contest

Unit 2 4 days	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.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings	Activities: ● Lesson 1: ● If you floated down a river, where would you end up? Materials ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest
Unit 2 4 days	2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings	Activities: ● Lesson 2: ● Why is there sand at the beach? Materials ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest

Unit 2 3 days	2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly. 2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings	Activities: ● Lesson 3: ● Where do flash floods happen? Materials ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest
Unit 2 4 days	2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings	Activities: ● Lesson 4: ● What's strong enough to make a canyon? Materials ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest

Unit 2 5 days	2-ESS2-1. Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land. 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. 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.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments ● Plant Drawings ● Plant Pattern Recordings	Activities: ● Lesson 5: ● How can you stop a landslide? ● Unit Assessment Materials ● Mystery Science Lessons ● Read Alouds ● Cross Cut Weather Reading Activities ● Mystery Labs ● Additional Hands on Activities ● Teacher Devised or Created Worksheets ● Barinpop Jr. ● Philadelphia Zoo Unless Contest
Unit 2 1 day	2-ESS1-1. Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	**Obj. We are learning to**: ● Targets Listed Above **Suggested Formative Assessment(s)**: ● Graphic Organizers ● Mystery Science Formative Assessments ● Mystery Science Summative Assessments	Activities: ● Performance Task: ● How long is the shortest river? Materials ● Mystery Science Lessons

	2-ESS2-2. Develop a model to represent the shapes and kinds of land and bodies of water in an area.	• Plant Drawings • Plant Pattern Recordings	• Read Alouds • Cross Cut Weather Reading Activities • Mystery Labs • Additional Hands on Activities • Teacher Devised or Created Worksheets • Barinpop Jr. • Philadelphia Zoo Unless Contest

Interdisciplinary Connections	Career Ready, Life Literacies, and Key Skills
NJSLS ELA 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. (2-ESS2-3) W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-ESS2-3) 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. (2-ESS2-2) NJSLS Mathematics MP.2 Reason abstractly and quantitatively. (2-ESS2-2) MP.4 Model with mathematics. (2-ESS2-2) 2.NBT.A.3 Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2- ESS2-2) English Language Arts Students gather information about the types of landforms and bodies of water from experiences or from text and digital resources. They can use this information to answer questions such as, "Where can water be found as solid ice or snow year round?" Students should also have the opportunity to use their research to publish a writing piece, with guidance and support from adults or collaboratively with peers, based on their findings about various landforms and bodies of water. Diagrams, drawings, photographs, audio or video recordings, poems, dioramas, models, or other	CS.K-2.8.1.2.DA.3 Identify and describe patterns in data visualizations. CS.K-2.8.1.2.DA.4 Make predictions based on data using charts or graphs. CAEP.9.2.4.A.2 Identify various life roles and civic and work‐related activities in the school, home, and community. CAEP.9.2.4.A.4 Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success. TECH.9.4.2.CI.1 Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2). TECH.9.4.2.CI.2 Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a). TECH.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). TECH.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).

visual displays can accompany students' writing to help recount experiences or clarify thoughts and ideas Mathematics As students collect data about the size of landforms and bodies of water, these numbers can be used to answer questions, make comparisons, or solve problems. For example, If students know that a mountain is 996 feet in height, a lake is 550 feet deep, a river is 687 miles long, and a forest began growing about 200 years ago, have students show each number in three ways using base-ten blocks, number words, and expanded form. A stream was 17 inches deep before a rainstorm and 33 inches deep after a rainstorm. How much deeper did it get during the rainstorm? As students engage in these types of mathematical connections, they are also modeling with mathematics and reasoning abstractly and quantitatively. When modeling with mathematics, students diagram situations mathematically (using equations, for example) and/or solve addition or subtraction word problems. When students reason abstractly and quantitatively, they manipulate symbols (numbers and other math symbols) abstractly and attend to the meaning of those symbols while doing so. Climate Change Students will continue participation in the Philadelphia Zoo UNLESS contest.	

Link to Additional Components including Cross Curricular Connections, Accommodations, Assessments, Etc

ELA Enduring Understanding Statements