# Science G2

Ewing Public Schools
2099 Pennington Road
Ewing, NJ 08618

Board Approved Date: January 24, 2022 Michael Nitti
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In accordance with The Ewing Public Schools' Policy 2230, Course Guides, this curriculum has been reviewed and found to be in compliance with all policies and all affirmative action criteria.

## Table of Contents

## Course Description and Rationale

Students in this course will learn to explain scientific phenomena. The Next Generation Science Standards (NGSS) performance expectations rely on three dimensions of learning to develop student understanding of scientific concepts. Core conceptual ideas are learned by engaging in scientific and engineering practices and considering crosscutting concepts. These three dimensions support students in developing useable knowledge to explain real world phenomena in the sciences.

In science, performance expectations at the elementary school level use three dimensional learning to foster student understanding of science concepts.

Students will use the following eight NGSS Science and Engineering Practices to demonstrate understanding of the disciplinary core ideas and develop critical thinking skills:

- Asking questions (science) and defining problems (engineering)
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using math and computational thinking
- Constructing explanations (science) and designing solutions (engineering)
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information

The following seven crosscutting concepts support the development of a deeper understanding of the disciplinary core ideas:

- Patters
- Cause and effect: mechanism and explanation
- Scale, proportion, and quantity
- Systems and system models
- Energy and matter: flows, cycles and conservation
- Structure and function

The course is a year-long course that meets for 45 minutes per day, on average for half the days of each marking period. The course uses a project-based approach to exploring many concepts. Many of the core ideas will be applied to engineering problems, allowing students to also develop an understanding of the engineering design process. This will further develop problem solving and critical thinking skills as students work to design, test, solve, and revise solutions to problems. The crosscutting concepts of patterns through structure and function are used as organizing concepts for these disciplinary core ideas. These performance expectations focus on students demonstrating proficiency in developing and using models, using mathematical thinking, and obtaining, evaluating and communicating information; and to use these practices to demonstrate understanding of the core ideas.

The course content is arranged into three units of study:

- Earth’s systems: Processes that Shape the Earth
- Structures and Properties of Matter
- Interdependent Relationships in Ecosystems

## Career Readiness, Life Literacies and Key Skills

During this course, students will work on developing, to an age appropriate level, the following Career Readiness, Life Literacies, and Key Skills:

Disciplinary Concepts:

- Career Awareness and Planning
  - Different types of jobs require different knowledge and skills
- Creativity and Innovation
  - Brainstorming can create new, innovative ideas
- Critical thinking and Problem-solving
  - Critical thinkers must first identify a problem then develop a plan to address it in order to effectively solve a problem
- Digital Citizenship
  - Young People can have a positive impact on the natural world in the fight against climate change
- Information and Media Literacy
  - Digital tools and media resources provide access to vast stores of information that can be searched.
  - Digital tools can be used to display data in various ways.
  - A variety of diverse sources, contexts, disciplines and cultures provide valuable and necessary information that can be used for different purposes.
  - Information is shared or conveyed in a variety of formats and sources.
- Technology Literacy
  - Digital tools have a purpose.
  - Collaboration can simplify the work an individual has to do and sometimes produce a better product.

**Technology Integration**

**Computer Science and Design Thinking**

During this course, students will work on developing, to an age appropriate level, the following computer Science and Design Thinking Skills:

Disciplinary Concepts and Core Ideas:

- Data and Analysis
  - Individuals collect, use and display data about individuals and the world around them.
  - Data can be used to make predictions about the world.
- Engineering Design
  - Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
  - Limitations (constraints) must be considered when engineering designs
- Interaction of Technology and Humans
  - Human needs and desires determine which new tools are developed.
  - Technology has changed the way people live and work.
  - Various tools can improve daily tasks and quality of life.

- Effects of Technology on the Natural World
  - The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
  - Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
  - Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.

ELA Integration:

- **NJSLS.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-ESS1-1), (2-PS1-4)
- **NJSLS.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-ESS1-1),(2-ESS2-1), (2-PS1-4)
- **NJSLS.RI.2.8** Describe how reasons support specific points the author makes in a text. (2-PS1-2),(2-PS1-4)
- **NJSLS.RI.2.9** Compare and contrast the most important points presented by two texts on the same topic. (2-ESS2-1)
- **NJSLS.SL.2.2** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. (2-ESS1-1)
- **NJSLS.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), (2-LS2-2)
- **NJSLS.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)
- **NJSLS.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-ESS1-1),(2-ESS2-3)
- **NJSLS.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-ESS1-1), (2-LS2-1),(2-LS4-1), (2-PS1-1),(2-PS1-2),(2-PS1-3)
- **NJSLS.W.2.8** Recall information from experiences or gather information from provided sources to answer a question. (2-ESS1-1),(2-ESS2-3),(2-LS2-1),(2-LS4-1), (2-PS1-1),(2-PS1-2),(2-PS1-3)

**Mathematics Integration:**

- **NJSLS.MP.2** Reason abstractly and quantitatively. (2-ESS2-1),(2-ESS2-1),(2-ESS2-2), (2-LS2-1),(2-LS4-1), (2-PS1-2)
- **NJSLS.MP.4** Model with mathematics. (2-ESS1-1),(2-ESS2-1),(2-ESS2-2), (2-LS2-1),(2-LS2-2),(2-LS4-1), (2-PS1-1),(2-PS1-2)
- **NJSLS.MP.5** Use appropriate tools strategically. (2-ESS2-1), (2-LS2-1), (2-PS1-2)
- **NJSLS.2.NBT.A** Understand place value. (2-ESS1-1)
- **NJSLS.2.NBT.A.3** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2-ESS2-2)
- **NJSLS.2.MD.B.5** Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (2-ESS2-1)
- **NJSLS.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. (2-LS2-2),(2-LS4-1), (2-PS1-1),(2-PS1-2)

## Unit 1: Earth's Systems: Processes that Shape the Earth

## Recommended Pacing – 30 days

### Why is This Unit Important?

This unit targets two major areas of Earth's Systems:  Processes that Shape the Earth:

- Students are able to apply their understanding of the idea that wind and water can change the shape of the land to compare design solutions to slow or prevent such change.
- Students are able to 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.

### Disciplinary Core Ideas:

- Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe (2-ESS1-1)
- Wind and water can change the shape of the land (2-ESS2-1)
- Maps show where things are located.  One can map the shapes and kinds of land and water in any area (2-ESS2-2)
- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form. (2-ESS2-3)
- Because there is always more than one possible solution to a problem.  It is useful to compare and test designs (secondary to 2-ESS2-1)

### Science and Engineering Practices:

- Develop a model to represent patterns in the natural world. (2-ESS2-2)
- Make observations from several sources to construct an evidence-based account for natural phenomena. (2-ESS1-1)
- Compare multiple solutions to a problem. (2-ESS2-1)
- 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)

### Cross Cutting Concepts:

- Patterns in the natural world can be observed (2-ESS-2) (2-ESS2-3)
- Things may change slowly or rapidly (2-ESS2-1)

**Enduring Understandings:**

- Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe.
- Wind and water can change the shape of the land.
- Maps show where things are located. One can map the shapes and kinds of land and water in any area.
- Water is found in the ocean, rivers, lakes, and ponds. Water exists as solid ice and in liquid form.
- Because there is always more than one possible solution to a problem, it is useful to compare and test designs.
- Patterns in the natural world can be observed.
- Things may change slowly or rapidly.
- Developing and using technology has impacts on the natural world.
- Scientists study the natural and material world.

**Essential Questions:**

- What happens during an earthquake?
- Why does weathering need to occur before erosion can occur?
- How does land change and what are some things that cause it to change?
- How is the formation of a gorge similar to the formation of a gully? How do they differ?
- What are the different kinds of land and bodies of water?

**Acquired Knowledge:**

- The effect of earthquakes in a city versus in the wild
- The process of weathering
- The process of erosion
- The types of landforms
- The types of bodies of water
- The ways wind can change landforms
- The way water can change landforms

**Acquired Skills:**

- Develop and model to represent patterns in the natural world.
- Make observations from several sources to construct an evidence-based account for natural phenomena
- Compare multiple solutions to a problem
- 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.

**Assessments:**

Formative Assessments:

- Group discussions/presentations:
  - Propose higher order questions
  - Present information to students to ask a question
  - Have students discuss their answers with their peers at their table and discuss together as a group

Summative Assessments:

- Project:
  - Protecting New Orleans

Benchmarks:

- Students will be assessed on their ability to 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 erosion of rocks, which occurs slowly.] [Assessment Boundary: Assessment does not include quantitative measurements of timescales.]
- Students will be assessed on their ability to 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 of dikes and windbreaks to hold back wind and water, and different designs for using shrubs, grass, and trees to hold back the land.]
- Students will be assessed on their ability to 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.]

Alternative Assessments:

- Modified project requirements and rubrics

**Suggested Learning Experiences and Instructional Activities:**

**Anticipatory Sets:**

- Processes that Shape the Earth

**In-Class Activities and Laboratory Experiences:**

- Erosion
- Make Observations
- Compare Solutions
- Make a Model
- Obtain Information

**Closure and Reflection Activities:**

- Career Exploration: Glaciologist

**Instructional Materials:**

Exploring Science – Cengage & National Geographic Learning; 2016

**Technology Connections:**

- https://climatekids.nasa.gov/menu/play/
- http://ngss-k-5-ausd.weebly.com/2earthrsquos-systems-processes-that-shape-the-earth-part-1.html
- http://ngss-k-5-ausd.weebly.com/2earthrsquos-systems-processes-that-shape-the-earth-part-2.html

## Unit 2: Structures and Properties of Matter

## Recommended Pacing – 30 days

### Why is This Unit Important?

This unit targets a major area of Structure and Properties of Matter

- Students are expected to develop an understanding of observable properties of materials, developing this understanding, at this level, through analysis and classification of different materials.

### Disciplinary Core Ideas:

- 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)
- Different properties are suited to different purposes (2-PS1-2), (2-PS1-3)
- A great variety of objects can be built up from a small set of pieces (2-PS1-3)
- Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible and sometimes they are not (2-PS1-4)

### Science and Engineering Practices:

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question (2-PS1-1)
- Analyze data from tests of an object or tool to determine if it works as intended (2-PS1-2)
- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (2-PS1-3)
- Construct an argument with evidence to support a claim. (2-PS1-4)

### Cross Cutting Concepts:

- Patterns in the natural and human designed world can be observed (2-PS-1
- Events have causes that generate observable patterns. (2-PS1-4)
- Simple tests can be designed to gather evidence to support or refute student ideas about causes. (2-PS1-3)
- Objects may break into smaller pieces and be put together into larger pieces, or change shapes. (2-PS1-3)

**Enduring Understandings:**

- 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
- Different properties are suited to different purposes
- A great variety of objects can be built up from small set of pieces.
- Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible and sometimes they are not.
- Patterns in the natural and human designed world can be observed.
- Events have causes that generate observable patterns.
- Simple tests can be designed to gather evidence to support or refute student ideas about causes.
- Objects may break into smaller pieces and be put together into larger pieces, or change shapes.
- Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world.
- Scientists search for cause and effect relationships to explain natural events.

**Essential Questions:**

- How are materials similar and different from one another?
- How do the properties of materials relate to their use?
- How can you tell the difference between different states of matter?
- What does heating and cooling do to matter?
- Are all objects made of other objects? When? When not so?

**Acquired Knowledge:**

- Definition of properties
- State of matter and their relationship to temperature
- The effects of heating
- The effects of cooling
- The composition of objects from other objects

**Acquired Skills:**

- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.
- Analyze data from tests of an object or tool to determine if it works as intended.
- Make observations (firsthand or from media) to construct an evidence based account for natural phenomena.
- Construct an argument with evidence to support a claim.

**Assessments:**

Formative Assessments:

- Group discussions/presentations:
  - Propose higher order questions
  - Present information to students to ask a question
  - Have students discuss their answers with their peers at their table and discuss together as a group

Summative Assessments:

- Project:
  - Make an Argument

Benchmarks:

- Students will be assessed on their ability to plan and conduct an investigation to describe and classify different kinds of materials by their observable properties. [Clarification Statement: Observations could include color, texture, hardness, and flexibility. Patterns could include the similar properties that different materials share.]
- Students will be assessed on their ability to analyze data obtained from testing different materials to determine which materials have the properties that best suited for an intended purpose. [Clarification Statement: Examples of properties could include strength, flexibility, hardness, texture and absorbency.]
- Students will be assessed on their ability to make observations to construct an evidence-based account on how an object made of a small set of pieces can be disassembled and made into a new object. [Clarification Statement: Examples of pieces could include blocks, building bricks, or other assorted small objects.]
- Students will be assessed on their ability to construct an argument with evidence that some changes cause by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter and different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

Alternative Assessments:

- Modified project requirements and rubrics

## Suggested Learning Experiences and Instructional Activities:

### Anticipatory Sets:

- Structure

### In-Class Activities and Laboratory Experiences:

- Solids and Liquids
- Plan and Investigate
- Materials that Absorb
- Make Observations

### Closure and Reflection Activities:

- Career Exploration:  Materials Scientist

## Instructional Materials:

Exploring Science – Cengage & National Geographic Learning; 2016

## Technology Connections:

- https://www.bbc.co.uk/programmes/b0078m3n
- https://www.topmarks.co.uk/Interactive.aspx?cat=70
- http://ngss-k-5-ausd.weebly.com/2structure-and-properties-of-matter-part-1.html
- http://ngss-k-5-ausd.weebly.com/2structure-and-properties-of-matter-part-2.html
- https://www.youtube.com/watch?v=P_RQuRzp7SE
- https://www.whatihavelearnedteaching.com/second-grade-science-stations-for-properties-of-matter/

## Unit 2: Interdependent Relationships in Ecosystems

## Recommended Pacing – 30 days

### Why is This Unit Important?

This unit targets two major areas of Interdependent Relations in Ecosystems

- Students are expected to develop an understanding of what plants need to grow and how plants depend on animals for see dispersal and pollination.
- Students are also expected to compare the diversity of life in different habitats.

### Disciplinary Core Ideas:

- Plants depend of water and light to grow. (2-LS2-1)
- Plants depend on animals for pollination or to move their sees around (2-LS2-2)
- There are many different kinds of living things in any area, and they exist in different places on land and in water (2-LS4-1)
- 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 (secondary to 2-LS2-2)

### Science and Engineering Practices:

- Develop a simple model based on evidence to represent a proposed object or tool (2-LS2-2)
- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a questions (2-LS2-1)
- Make observations (firsthand or from media) to collect data which can be used to make comparisons. (2-LS4-1)

### Cross Cutting Concepts:

- Events have causes that generate observable patterns. (2-LS2-1)
- The shape and stability of structures of natural and designed objects are related to their function(s) (2-LS2-2)

**Enduring Understandings:**

- Plants depend on animals for pollination or to move their seeds around.
- There are many different kinds of living things in any area, and they exist in different places on land and in water.
- 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.
- Events have causes that generate observable patterns.
- The shape and stability of structures of natural and designed objects are related to their function(s).
- Scientists look for patterns and order when making observations about the world.

**Essential Questions:**

- What do plants need to grow?
- How do plants and animals help each other?
- How many types of living things live in a place?
- How does life in water and life on land differ? How are they the same?

**Acquired Knowledge:**

- The physical needs of plants
- The role of animals in pollination
- The role of animals in seed disbursal
- Biodiversity

**Acquired Skills:**

- Develop a simple model based on evidence to represent a proposed object or tool.
- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.
- Make observations (firsthand or from media) to collect data which can be used to make comparisons.

**Assessments:**

Formative Assessments:

- Group discussions/presentations:
    - Propose higher order questions
    - Present information to students to ask a question
    - Have students discuss their answers with their peers at their table and discuss together as a group

Summative Assessments:

- Project:
    - Develop a Model

Benchmarks:

- Students will be assessed on their ability to plan and conduct an investigation to determine if plants need sunlight and water to grow. [Assessment Boundary: Assessment is limited to testing one variable at a time.]
- Students will be assessed on their ability to develop a simple model that mimics the function of animal in dispersing seeds or pollinating plants.
- Students will be assessed on their ability to make observations of plants and animals to compare the diversity of life in different habitats. [Clarification Statement: Emphasis is on the diversity of living things in each of a variety of different habitats.] [Assessment Boundary: Assessment does not include specific animal and plant names in specific habitats.]
- Students will be assessed on their ability to construct an argument with evidence that some changes cause by heating or cooling can be reversed and some cannot. [Clarification Statement: Examples of reversible changes could include materials such as water and butter and different temperatures. Examples of irreversible changes could include cooking an egg, freezing a plant leaf, and heating paper.]

Alternative Assessments:

- Modified project requirements and rubrics

**Suggested Learning Experiences and Instructional Activities:**

**Anticipatory Sets:**

- What Plants Need

**In-Class Activities and Laboratory Experiences:**

- Sustainability Project – Bio-Diversity
- Plants and Light
- Plan and investigate
- Save the Bees!
- Make Observations

**Closure and Reflection Activities:**

- Career Exploration: Field Biologist

**Instructional Materials:**

Exploring Science – Cengage & National Geographic Learning; 2016

**Technology Connections:**

- http://ngss-k-5-ausd.weebly.com/2interdependent-relationships-in-ecosystems.html
- https://thewonderofscience.com/2ls41
- https://teachingscience.us/diversity-of-life-in-different-habitats-2nd-grade-science-unit/

## Sample Standards Integration

**Career Readiness, Life Literacies, and Key Skills**

**9.4.2.IML.2**

For example in Unit 2, students will have to construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

**9.4.2.DC.7**

For example in Unit 1, students need to evaluate how human constructions and natural resource usage have effected how wind and water change the shape of the land.

**9.4.2.CI.2**

For example in Unit 1, students compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.

**9.4.2.CT.1**

For example in Unit 2, students will analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

**9.4.2.CT.3**

For example in Unit 3, students will develop a model that mimics the function of an animal in dispersing seeds or pollinating plants.

**8.1 Computer Science and Design Thinking**
**All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and create and communicate knowledge.**

For example in Unit 3, students will access, manage, evaluate, and synthesize information to make observations of plants and animals to compare the diversity of life in different habitats.

**Interdisciplinary Connections**

**NJSLS.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-ESS1-1), (2-PS1-4)

**NJSLS.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-ESS1-1),(2-ESS2-1), (2-PS1-4)

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

**NJSLS.RI.2.9** Compare and contrast the most important points presented by two texts on the same topic. (2-ESS2-1)

**NJSLS.SL.2.2** Recount or describe key ideas or details from a text read aloud or information presented orally or through other media. (2-ESS1-1)

**NJSLS.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), (2-LS2-2)

**NJSLS.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)

**NJSLS.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-ESS1-1),(2-ESS2-3)

**NJSLS.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-ESS1-1), (2-LS2-1),(2-LS4-1), (2-PS1-1),(2-PS1-2),(2-PS1-3)

**NJSLS.W.2.8** Recall information from experiences or gather information from provided sources to answer a question. (2-ESS1-1),(2-ESS2-3),(2-LS2-1),(2-LS4-1), (2-PS1-1),(2-PS1-2),(2-PS1-3)

*These standards are met through the completion of the benchmark performances in all 3 units. For example in Unit 3, students will read texts and use media to* compare the diversity of life in different habitats.

**NJSLS.MP.2** Reason abstractly and quantitatively. (2-ESS2-1),(2-ESS2-1),(2-ESS2-2), (2-LS2-1),(2-LS4-1), (2-PS1-2)

**NJSLS.MP.4** Model with mathematics. (2-ESS1-1),(2-ESS2-1),(2-ESS2-2), (2-LS2-1),(2-LS2-2),(2-LS4-1), (2-PS1-1),(2-PS1-2)
**NJSLS.MP.5** Use appropriate tools strategically. (2-ESS2-1), (2-LS2-1), (2-PS1-2)

*These standards are met through the completion of the benchmark performances in all 3 units. For example in Unit 1, students will have to reason both abstractly and quantitatively c*ompare multiple solutions and models designed to slow or prevent wind or water from changing the shape of the land.

**NJSLS.2.MD.B.5** Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (2-ESS2-1)

**NJSLS.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. (2-LS2-2),(2-LS4-1), (2-PS1-1),(2-PS1-2)

*These standards are met through the completion of the benchmark performances in all 3 units. For example in Unit 2, students will* analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

**NJSLS.2.NBT.A** Understand place value. (2-ESS1-1)

**NJSLS.2.NBT.A.3** Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2-ESS2-2)

*These standards are met through the completion of the benchmark performance in Unit 1, students will* develop a model to represent the shapes and kinds of land and bodies of water in an area.