

# Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: 2</b>	<b>Content Area: Science</b>
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## Introduction

In these units of study, students investigate phenomena involving properties of matter and changes to matter, relationships in habitats, Earth's water and changes to Earth's surface. Science and engineering practices include constructing explanations, designing solutions, and engaging in argument from evidence as well as planning and carrying out investigations and analyzing and interpreting data. Crosscutting concepts include stability and change; structure and function; and the influence of engineering, technology, and science on society and the natural world. Students are expected to demonstrate understanding of these concepts and practices along with the science ideas.

<b>Grade 2: Science</b>
<b>Original Adoption: October 23, 2018</b>
<b>Revised on: March 18, 2019</b>
<b>Revised by: C. McBride</b>
<b>Revised on: August 16, 2022</b>
<b>Revised by: C. McBride</b>

<b>Recommended Pacing Guide</b>	
<b>Unit 1: Properties of Matter</b>	25 Days
<b>Unit 2: Changing Matter</b>	25 Days
<b>Unit 3: Earth's Water and Land</b>	25 Days
<b>Unit 4: Earth's Processes</b>	20 days
<b>Unit 5: Habitats</b>	20 days

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<b>Unit 1: Properties of Matter</b>	<b>Duration: 20 days</b>
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**Science Standards**  
2-PS1-1, 2-PS1-2, K-2-ETS1-1, K-2 ETS1-2

**Disciplinary Core Ideas**

**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.

**Science and Engineering Practices**

**SEP.2 Developing and Using Models** Develop a simple model based on evidence to represent a proposed object or tool

**SEP.3 Planning and Carrying Out Investigations** Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question

**SEP.6 Designing Solutions** Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem

**Crosscutting Concepts**

CCC.1 Patterns Patterns in the natural and human designed world can be observed

CCC.2 Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes

CCC.4 Systems and System Models Systems in the natural and designed world have parts that work together

**Connections to Nature of Science Science is a Human Endeavor**

Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

**Computer Science and Design Thinking Standards**

8.2.2.ED.1: Communicate the function of a product or device.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. (K-2-ETS1-1, K-2 ETS1-2)

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process (K-2-ETS1-1, K-2 ETS1-2)

8.2.2.ED.4: Identify constraints and their role in the engineering design process

**Interdisciplinary Standards ELA/Literacy**

RI. Describe how reasons support specific points the author makes in a text.

W.2.7 Participate in shared research and writing projects

W.2.8 Recall information from experiences or gather information from provided sources to answer a question.

MP.2 Reason abstractly and quantitatively

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MP.5 USe appropriate tools strategically.

## **Enduring Understandings**

Matter has properties that can be described and classified.  
Matter can change form.

## **Essential Questions**

How can we describe matter?  
How can matter change form?  
What are the properties of matter?  
How can we use properties of matter to build things or design solutions to problems?

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

*The following skills are encouraged and taught:*  
Demonstrate creativity and innovation.  
Utilize critical thinking to make sense of problems and persevere in solving them.  
Use technology to enhance productivity increase collaboration and communicate effectively  
Work productively in teams while using cultural/global competence.

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

9.4.2.Cl.1: Demonstrate openness to new ideas and perspectives (K-2-ETS1-1, K-2 ETS1-2)  
9.4.2.Cl.2: Demonstrate originality and inventiveness in work (K-2-ETS1-1, K-2 ETS1-2)

LGBT and Disabilities Law N.J.S.A 18A:35-4.35 Instruction on the political, economic, and social integration of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum

Amistad Law: N.J.S.A 18A:52:16A-88-4.35 Instruction regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of secondary school students.

Holocaust Law N.J.S.A 18A:35-28  
Instruction on the Holocaust and genocides in an appropriate place in the curriculum with an emphasis on the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

## **Student Learning Goals/Objectives**

*Students will know:*

*Students will be able to:*

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<p>How to classify matter based on properties            How to measure matter            How to collect and analyze data by measuring and recording observations</p>	<p>2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties            2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.            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</p>
<b>Assessment Evidence</b>	
<p><b>Performance Tasks</b>            Use shapes to build objects            Collect and and analyze testing data from the development of a solution</p>	<p><b>Other Assessments</b>  <b>Formative:</b></p> <ul style="list-style-type: none"> <li>● Lesson quizzes, and reviews</li> <li>● Student investigations and models</li> <li>● Language Arts writing activities</li> <li>● Graphic Organizers &amp; Guided Notes</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys/ Evaluation</li> <li>● Jigsaw</li> <li>● Think, Pair, Share</li> <li>● Quizzes</li> </ul> <p><b>Alternative:</b></p> <ul style="list-style-type: none"> <li>● Modified tests and quizzes</li> <li>● Group work</li> <li>● Peer assessments</li> <li>● Labs</li> <li>● Projects</li> <li>● Portfolio Assessments</li> </ul> <p><b>Summative</b></p>

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	<ul style="list-style-type: none"><li>● Unit Test/Topic Test</li><li>● Unit Project</li><li>● Performance Assessment/Tasks</li><li>● Engineering projects</li></ul> <p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"><li>● Unit pre-test</li><li>● Beginning of the year, mid year, and end of the year SGO</li></ul>
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<b>Core Instructional &amp; Supplemental Materials</b>	
<p><b>Suggested Activities/Resources:</b></p> <ul style="list-style-type: none"><li>● Savvas Realize “Elevate Science”<ul style="list-style-type: none"><li>○ Lesson explorations</li><li>○ Hands-on activities</li><li>○ Virtual Labs</li><li>○ Video based projects</li><li>○ Performance tasks</li><li>○ Engineering projects</li><li>○ Student investigations</li></ul></li></ul>	<p><b>Varied Levels of Text:</b></p> <ul style="list-style-type: none"><li>● leveled readers</li><li>● Newsela</li><li>● Storyworks</li><li>● Career Connection</li><li>● Mason, A. (2006). Build it! Structures, systems and you</li><li>● Van Dusen, C. (2007). If I built a car</li><li>● Beaty, A. (2007). Iggy Peck, architect.</li><li>● Spires, A. (2014). The most magnificent thing.</li></ul>

<b>Modifications and Accommodations</b>
<p><b>English Language Learners:</b></p> <ul style="list-style-type: none"><li>● Provide pictures and well labeled models</li><li>● Speak slowly and gesture when necessary</li><li>● Pre-teach vocabulary words</li><li>● Extended time on assessments</li><li>● Small group for assessment</li><li>● Review Vocabulary</li><li>● Allow for alternate responses during activities and assessments</li><li>● Literacy and language support strategies including discourse</li><li>● Use a poster, slide, or picture to support student listening in science such as GLAD pictorial input chart</li><li>● Preview science texts with students, discussing salient text features such as tables, graphs, and photographs before they read it.</li><li>● Provide summaries and include native language texts.</li></ul>

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- Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.
- Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or [Google Translate](#). Look beyond grammar and spelling to understand student ideas.
- Home culture connections

### **Special Education/504 Plans/Students with Disabilities:**

- Follow specific IEP/504 accommodations and modifications
- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Allow alternate assignments and assessments
- Differentiated Instruction

### **Students at Risk of Failure:**

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Incorporate social/emotional discussions
- Encourage and monitor positive peer collaboration
- Provide academic resources for both home and school use
- Provide incentives to increase motivation and collaboration

### **Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input
- Connect concepts to students' sense of "place" as physical, historical, and sociocultural dimensions
- Ask questions that elicit students' funds of knowledge
- Use cultural artifacts that are meaningful
- Use project-based learning as a form of connected science
- Provide resources for science instruction

### **Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary

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- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Use cultural artifacts that are meaningful relevant
- Integrate community involvement
- Include role models and mentors of similar racial or ethnic backgrounds

### **Gifted and Talented**

- Peer mediated strategies
- Cooperative learning groups
- Differentiated instruction

### *Presentation accommodations allow a student to:*

- Vary the method of presentation: lecture, small groups, large group, demonstration, individual experimentation
- Explore real world connections
- Use technology tools to enhance content

### *Response accommodations allow a student to:*

- Turn and Talk
- Reward risk taking while encouraging students to think “outside of the box”

### *Setting accommodations allow a student to:*

- Use flexible seating
- Have choice in seating/grouping

### *Timing accommodations allow a student to:*

- Have flexible pacing in terms of content, assignments, and assessments
- Explore extended activities

### *Scheduling accommodations allow a student to:*

- Establish a timeline for completing a project
- Have rigorous Pacing

### *Organization skills accommodations allow a student to:*

- Model executive functioning
- Utilize independent skills practices

### *Assignment modifications allow a student to:*

- Complete enrichment tasks

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- Write longer passages on essays and open ended responses including academic vocabulary
- Answer higher order thinking questions
- Cite text evidence
- Create alternate projects or assignments, student developed rubrics, student choice when completing a project or alternate labs

*Curriculum modifications provide:*

- Topics of interest to the student and/or relevant to how the world works
- Students access to supplemental reading materials matched to individual student lexiles
- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others

**Unit 2: Changing Matter**

**Duration: 20 days**

### **Science Standards**

**2-PS1-1, 2-PS1-3, 2-PS1-4, K-2-ETS1-1, K-2 ETS1-2**

### **Disciplinary Core Ideas**

**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 observable properties. A great variety of objects can be built up from a small set of pieces.  
**PS1.B Chemical Reactions** Heating or cooling a substance may cause changes that can be observed. Sometimes these changes are reversible, and sometimes they are not.

### **Science and Engineering Practices**

SEP.3 Planning and Carrying Out Investigations Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question  
SEP.6 Constructing Explanations and Designing Solutions Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena  
SEP.7 Engaging in Argument from Evidence Construct an argument with evidence to support a claim.

### **Crosscutting Concepts**

CCC.1 Patterns Patterns in the natural and human designed world can be observed  
CCC.2 Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes  
CCC.2 Cause and Effect Events have causes that generate observable patterns  
CCC.4 Systems and System Models Systems in the natural and designed world have parts that work together

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CCC.5 Energy and Matter Objects may break into smaller pieces and be put together into larger pieces or change shape

### **Connections to Nature of Science Science is a Human Endeavor**

Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

### **Computer Science and Design Thinking Standards**

8.2.2.ED.1: Communicate the function of a product or device.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. (K-2-ETS1-1, K-2 ETS1-2)

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process (K-2-ETS1-1, K-2 ETS1-2)

8.2.2.ED.4: Identify constraints and their role in the engineering design process.

### **Interdisciplinary Standards ELA/Literacy**

RI. Describe how reasons support specific points the author makes in a text.

RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

W.2.8 Recall information from experiences or gather information from provided sources to answer a question.

MP. Reason abstractly and quantitatively

### **Enduring Understandings**

Matter can change.

Heating and cooling cause matter to change.

Properties of matter can be used to design solutions to problems.

### **Essential Questions**

How can matter change?

What causes matter to change?

How can we use properties of materials to build a structure or improve a product?

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

*The following skills are encouraged and taught:*

Demonstrate creativity and innovation.

Utilize critical thinking to make sense of problems and persevere in solving them.

Use technology to enhance productivity increase collaboration and communicate effectively

Work productively in teams while using cultural/global competence.

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<b>Career Readiness, Life Literacies, and Key Skills Standards</b>
<p>9.4.2.CI.1: Demonstrate openness to new ideas and perspectives            9.4.2.CI.2: Demonstrate originality and inventiveness in work (K-2-ETS1-1, K-2 ETS1-2)</p>
<p>LGBT and Disabilities Law N.J.S.A 18A:35-4.35 Instruction on the political, economic, and social integration of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum</p> <p>Amistad Law: N.J.S.A 18A:52:16A-88-4.35 Instruction regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of secondary school students.</p> <p>Holocaust Law N.J.S.A 18A:35-28            Instruction on the Holocaust and genocides in an appropriate place in the curriculum with an emphasis on the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.</p>

<b>Student Learning Goals/Objectives</b>	
<p><i>Students will know:</i></p> <p>How to make a plan to change matter            Objects may break into smaller pieces and be put together into larger pieces or change shapes.            Different properties are suited to different purposes.            A great variety of objects can be built up from a small set of pieces            How to explain whether a change caused by heating or cooling is reversible or not.            How to design a way to use properties of materials to build a structure or improve a product            Structural Engineer Careers</p>	<p><i>Students will be able to:</i></p> <p>2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties            2-PS1-3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object..            2-PS1-4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.            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</p>

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<b>Assessment Evidence</b>	
<p><b>Performance Tasks</b></p> <p>Use shapes to build objects</p> <p>Collect and and analyze testing data from the development of a solution</p> <p>Design a way to use properties of materials to build a structure</p> <p>Improve the design of a sipping cup so that it does not leak</p> <p>Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of each.</p> <p>Research structural engineer careers</p> <p>Observe patterns in events generated due to cause and effect relationships.</p> <p>Construct an argument with evidence to support a claim.</p> <p>Construct an argument with evidence that some changes caused by heating or cooling can be reversed, and some cannot.</p> <p>Explain reversible changes include materials such as water and butter at different temperatures.</p> <p>Explain irreversible changes include cooking an egg, freezing a plant leaf, heating paper</p>	<p><b>Other Assessments</b></p> <p><b>Formative:</b></p> <ul style="list-style-type: none"> <li>● Lesson quizzes, and reviews</li> <li>● Student investigations and models</li> <li>● Language Arts writing activities</li> <li>● Graphic Organizers &amp; Guided Notes</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys/ Evaluation</li> <li>● Jigsaw</li> <li>● Think, Pair, Share</li> <li>● Quizzes</li> </ul> <p><b>Alternative:</b></p> <ul style="list-style-type: none"> <li>● Modified tests and quizzes</li> <li>● Group work</li> <li>● Peer assessments</li> <li>● Labs</li> <li>● Projects</li> <li>● Portfolio Assessments</li> </ul> <p><b>Summative</b></p> <ul style="list-style-type: none"> <li>● Unit Test/Topic Test</li> <li>● Unit Project</li> <li>● Performance Assessment/Tasks</li> <li>● Engineering projects</li> </ul> <p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"> <li>● Unit pre-test</li> <li>● Beginning of the year, mid year, and end of the year SGO</li> </ul>

<b>Core Instructional &amp; Supplemental Materials</b>	
<p><b>Suggested Activities/Resources:</b></p> <ul style="list-style-type: none"> <li>● Savvas Realize “Elevate Science”               <ul style="list-style-type: none"> <li>○ Lesson explorations</li> <li>○ Hands-on activities</li> </ul> </li> </ul>	<p><b>Varied Levels of Text:</b></p> <ul style="list-style-type: none"> <li>● leveled readers</li> <li>● Newsela</li> <li>● Storyworks</li> </ul>

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<ul style="list-style-type: none"><li>○ Virtual Labs</li><li>○ Video based projects</li><li>○ Performance tasks</li><li>○ Engineering projects</li><li>○ Student investigations</li></ul> <p><a href="https://teaching.betterlesson.com/lesson/636230/thousands-of-tiny-pieces-can-create-something-big">https://teaching.betterlesson.com/lesson/636230/thousands-of-tiny-pieces-can-create-something-big</a></p> <p><a href="https://teaching.betterlesson.com/lesson/636201/take-it-apart-put-it-together">https://teaching.betterlesson.com/lesson/636201/take-it-apart-put-it-together</a></p>	<ul style="list-style-type: none"><li>● Career Connection: Structural Engineer</li><li>● “The Magic School Bus Bakes a Cake: Ready Set Dough!”</li><li>● Hanson, A. (2011). Melting matter</li><li>● Zoehfeld, K.W. (2015). What is the world made of? All about solids, liquids and gasses.</li><li>● Ross, M.E. (2007). What’s the matter in Mr. Whiskers’ room?</li><li>● Braun, E. (2012). Joe Joe the wizard brews up solids, liquids and gasses.</li></ul>

### Modifications and Accommodations

#### English Language Learners:

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Pre-teach vocabulary words
- Extended time on assessments
- Small group for assessment
- Review Vocabulary
- Allow for alternate responses during activities and assessments
- Literacy and language support strategies including discourse
- Use a poster, slide, or picture to support student listening in science such as GLAD pictorial input chart
- Preview science texts with students, discussing salient text features such as tables, graphs, and photographs before they read it.
- Provide summaries and include native language texts.
- Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.
- Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or [Google Translate](#). Look beyond grammar and spelling to understand student ideas.
- Home culture connections

#### Special Education/504 Plans/Students with Disabilities:

- Follow specific IEP/504 accommodations and modifications
- Strategic grouping
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- Small group for assessments
- Check in’s during experiments to help refocus
- Allow alternate assignments and assessments

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- Differentiated Instruction

### **Students at Risk of Failure:**

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Incorporate social/emotional discussions
- Encourage and monitor positive peer collaboration
- Provide academic resources for both home and school use
- Provide incentives to increase motivation and collaboration

### **Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input
- Connect concepts to students' sense of "place" as physical, historical, and sociocultural dimensions
- Ask questions that elicit students' funds of knowledge
- Use cultural artifacts that are meaningful
- Use project-based learning as a form of connected science
- Provide resources for science instruction

### **Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
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- Integrate community involvement
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### **Gifted and Talented**

- Peer mediated strategies
- Cooperative learning groups
- Differentiated instruction

*Presentation accommodations allow a student to:*

- Vary the method of presentation: lecture, small groups, large group, demonstration, individual experimentation
- Explore real world connections
- Use technology tools to enhance content

*Response accommodations allow a student to:*

- Turn and Talk
- Reward risk taking while encouraging students to think “outside of the box”

*Setting accommodations allow a student to:*

- Use flexible seating
- Have choice in seating/grouping

*Timing accommodations allow a student to:*

- Have flexible pacing in terms of content, assignments, and assessments
- Explore extended activities

*Scheduling accommodations allow a student to:*

- Establish a timeline for completing a project
- Have rigorous Pacing

*Organization skills accommodations allow a student to:*

- Model executive functioning
- Utilize independent skills practices

*Assignment modifications allow a student to:*

- Complete enrichment tasks
- Write longer passages on essays and open ended responses including academic vocabulary
- Answer higher order thinking questions
- Cite text evidence
- Create alternate projects or assignments, student developed rubrics, student choice when completing a project or alternate labs

*Curriculum modifications provide:*

- Topics of interest to the student and/or relevant to how the world works
- Students access to supplemental reading materials matched to individual student lexiles
- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others

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<b>Unit 3: Earth's Water and Land</b>	<b>Duration: 20 days</b>
<b>Science Standards</b> 2-ESS2-1, 2-ESS2-2, 2-ESS2-3, K-2-ETS1-2, K-2-ETS1-3	
<b>Disciplinary Core Ideas</b> <b>ESS2.B Plate Tectonics and Large Scale System Interactions</b> Maps show where things are located. One can map the shapes and kinds of land and water in any area. <b>ESS2.C The Roles of Water in Earth's Surface Processes</b> Water is found in the ocean, rivers, lakes and ponds. Water exists as solid ice and in liquid form. <b>2-ETS1.C Optimizing the Design Solution</b> Because there is always more than one possible solution to a problem, it is useful to compare and test designs.	
<b>Science and Engineering Practices</b> SEP.2 Developing and Using Models Develop a model to represent patterns in the natural world SEP.8 Obtaining, Evaluating, and Communicating Information Obtain information using various texts, text features, and other media that will be useful in answering a scientific question	
<b>Crosscutting Concepts</b> CCC.1 Patterns Patterns in the natural and human designed world can be observed CCC.2 Cause and Effect Recognize that events have causes that generate observable patterns CCC.3 Scale, Proportion, and Quantity Relative scales allow objects and events to be compared and described	
<b>Connections to Nature of Science Science is a Human Endeavor</b> Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.	
<b>Computer Science and Design Thinking Standards</b> 8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process or optimize a solution.	
<b>Interdisciplinary Standards ELA/Literacy</b> RI.2.7 Explain how specific images contribute to and clarify a text. W.2.8 Recall information from experiences or gather information from provided sources to answer a question. 2.G.A.3 Partition circles and rectangles into two, three or four equal shares, describe the shares using words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.	

# Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

**Content Area: Science**

2.MD.1 Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks and measuring tape.  
2.MP.5 Use appropriate tools strategically.

## **Enduring Understandings**

Different landforms can be found on Earth's surface.  
Models can be used to describe landforms.  
Different bodies of water can be found on Earth.  
Maps show where things are located. One can map the shapes and kinds of land and water in any area.

## **Essential Questions**

What are the different landforms on Earth?  
How can we model different landforms?  
What are the different bodies of water on Earth and where are they located?  
How can we use maps to locate Earth's features?

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

*The following skills are encouraged and taught:*  
Demonstrate creativity and innovation.  
Utilize critical thinking to make sense of problems and persevere in solving them.  
Use technology to enhance productivity increase collaboration and communicate effectively  
Work productively in teams while using cultural/global competence.

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

9.4.2.Cl.1: Demonstrate openness to new ideas and perspectives  
9.4.2.Cl.2: Demonstrate originality and inventiveness in work

LGBT and Disabilities Law N.J.S.A 18A:35-4.35 Instruction on the political, economic, and social integration of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum

Amistad Law: N.J.S.A 18A:52:16A-88-4.35 Instruction regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of secondary school students.

Holocaust Law N.J.S.A 18A:35-28

## Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: 2</b>	<b>Content Area: Science</b>
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Instruction on the Holocaust and genocides in an appropriate place in the curriculum with an emphasis on the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

### Student Learning Goals/Objectives

<p><i>Students will know:</i></p> <p>How to identify different landforms.          How to identify different bodies of water.          How to make maps of an area and measure distances on maps.          How to analyze and interpret data about landforms.          How to develop a model to represent the shapes and kinds of land and bodies of water in an area          How to document digital photographs of landforms</p>	<p><i>Students will be able to:</i></p> <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.          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</p>
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### Assessment Evidence

<p><b>Performance Tasks</b></p> <p>Identify landforms          Obtain information using various texts, text features (table 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.          Use maps to show where land and water are on Earth          Make model of landforms          Identify bodies of water          Research landforms and create document of digital images          Optimize solutions for a problem involving improving the design of a dam p. 97          Make a map of the playground.</p>	<p><b>Other Assessments</b></p> <p><b>Formative:</b></p> <ul style="list-style-type: none"> <li>● Lesson quizzes, and reviews</li> <li>● Student investigations and models</li> <li>● Language Arts writing activities</li> <li>● Graphic Organizers &amp; Guided Notes</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys/ Evaluation</li> <li>● Jigsaw</li> <li>● Think, Pair, Share</li> <li>● Quizzes</li> </ul> <p><b>Alternative:</b></p> <ul style="list-style-type: none"> <li>● Modified tests and quizzes</li> <li>● Group work</li> <li>● Peer assessments</li> <li>● Labs</li> <li>● Projects</li> <li>● Portfolio Assessments</li> </ul>
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	<b>Summative</b> <ul style="list-style-type: none"><li>● Unit Test/Topic Test</li><li>● Unit Project</li><li>● Performance Assessment/Tasks</li><li>● Engineering projects</li></ul> <b>Benchmark Assessments:</b> <ul style="list-style-type: none"><li>● Unit pre-test</li><li>● Beginning of the year, mid year, and end of the year SGO</li></ul>
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<b>Core Instructional &amp; Supplemental Materials</b>	
<b>Suggested Activities/Resources:</b> <ul style="list-style-type: none"><li>● Savvas Realize “Elevate Science”<ul style="list-style-type: none"><li>○ Lesson explorations</li><li>○ Hands-on activities</li><li>○ Virtual Labs</li><li>○ Video based projects</li><li>○ Performance tasks</li><li>○ Engineering projects</li><li>○ Student investigations</li></ul></li></ul>	<b>Varied Levels of Text:</b> <ul style="list-style-type: none"><li>● leveled readers</li><li>● Newsela</li><li>● Storyworks</li><li>● Career Connection: Map Maker</li><li>● Smith, P. (2015). How do wind and water change Earth?</li><li>● Hyde, N. (2010). Soil erosion and how to prevent it</li><li>● Koontz, R. (2006). Erosion: Changing Earth’s surface.</li><li>● Dorros, A. (2000). Follow the water from brook to ocean</li><li>● Locker, T. (2002). Water dance</li><li>● Smith, P. (2015). Earth’s landforms and bodies of water.</li><li>● Lobel, A. (1993). Ming Lo moves the mountain</li></ul>

<b>Modifications and Accommodations</b>
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<b>English Language Learners:</b> <ul style="list-style-type: none"><li>● Provide pictures and well labeled models</li><li>● Speak slowly and gesture when necessary</li><li>● Pre-teach vocabulary words</li><li>● Extended time on assessments</li><li>● Small group for assessment</li></ul>
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## Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

**Content Area: Science**

- Review Vocabulary
- Allow for alternate responses during activities and assessments
- Literacy and language support strategies including discourse
- Use a poster, slide, or picture to support student listening in science such as GLAD pictorial input chart
- Preview science texts with students, discussing salient text features such as tables, graphs, and photographs before they read it.
- Provide summaries and include native language texts.
- Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.
- Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or [Google Translate](#). Look beyond grammar and spelling to understand student ideas.
- Home culture connections

### **Special Education/504 Plans/Students with Disabilities:**

- Follow specific IEP/504 accommodations and modifications
- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Allow alternate assignments and assessments
- Differentiated Instruction

### **Students at Risk of Failure:**

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Incorporate social/emotional discussions
- Encourage and monitor positive peer collaboration
- Provide academic resources for both home and school use
- Provide incentives to increase motivation and collaboration

### **Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input
- Connect concepts to students' sense of "place" as physical, historical, and sociocultural dimensions
- Ask questions that elicit students' funds of knowledge
- Use cultural artifacts that are meaningful
- Use project-based learning as a form of connected science

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

**Content Area: Science**

- Provide resources for science instruction

### **Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Use cultural artifacts that are meaningful relevant
- Integrate community involvement
- Include role models and mentors of similar racial or ethnic backgrounds

### **Gifted and Talented**

- Peer mediated strategies
- Cooperative learning groups
- Differentiated instruction

### *Presentation accommodations allow a student to:*

- Vary the method of presentation: lecture, small groups, large group, demonstration, individual experimentation
- Explore real world connections
- Use technology tools to enhance content

### *Response accommodations allow a student to:*

- Turn and Talk
- Reward risk taking while encouraging students to think “outside of the box”

### *Setting accommodations allow a student to:*

- Use flexible seating
- Have choice in seating/grouping

### *Timing accommodations allow a student to:*

- Have flexible pacing in terms of content, assignments, and assessments
- Explore extended activities

### *Scheduling accommodations allow a student to:*

- Establish a timeline for completing a project
- Have rigorous Pacing

# Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

**Content Area: Science**

*Organization skills accommodations allow a student to:*

- Model executive functioning
- Utilize independent skills practices

*Assignment modifications allow a student to:*

- Complete enrichment tasks
- Write longer passages on essays and open ended responses including academic vocabulary
- Answer higher order thinking questions
- Cite text evidence
- Create alternate projects or assignments, student developed rubrics, student choice when completing a project or alternate labs

*Curriculum modifications provide:*

- Topics of interest to the student and/or relevant to how the world works
- Students access to supplemental reading materials matched to individual student lexiles
- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others

**Unit 4: Earth's Processes**

**Duration: 20 days**

**Science Standards**

**2-ESS1-1, 2-ESS2-1, K-2-ETS1-3**

**Disciplinary Core Ideas**

**ESS1.C The History of Planet Earth** Some events happen very quickly, others occur very slowly over a period of time much longer than one can observe.

**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.

**Science and Engineering Practices**

**SEP.2 Developing and Using Models** Develop a model to represent patterns in the natural world.

**SEP.6 Constructing Explanations and Designing Solutions** Make observations from several sources to construct an evidence-based account for natural phenomena. Compare multiple solutions to a problem.

**Crosscutting Concepts**

**CCC.6 Stability and Change** Things may change slowly or quickly

# Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

**Content Area: Science**

## **Connections to Nature of Science Science is a Human Endeavor**

Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

## **Computer Science and Design Thinking Standards**

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process or optimize a solution. (K-2-ETS1-3)

## **Interdisciplinary Standards ELA/Literacy**

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.MD.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units by using drawings and equations with a symbol for the unknown number to represent the problem.

## **Enduring Understandings**

Earth changes quickly and slowly.  
People can change Earth.  
People can reduce the effects caused by Earth's changes.

## **Essential Questions**

How does Earth change?  
What evidence supports how Earth changes?  
How can people change Earth?

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

*The following skills are encouraged and taught:*  
Demonstrate creativity and innovation.  
Utilize critical thinking to make sense of problems and persevere in solving them.  
Use technology to enhance productivity increase collaboration and communicate effectively  
Work productively in teams while using cultural/global competence.

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

9.4.2.CI.1: Demonstrate openness to new ideas and perspectives  
9.4.2.CI.2: Demonstrate originality and inventiveness in work  
8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution. (K-2-ETS1-3)  
9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (K-2-ETS1-3).  
9.4.2.CT.2: Identify possible approaches and resources to execute a plan  
9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)v

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LGBT and Disabilities Law N.J.S.A 18A:35-4.35 Instruction on the political, economic, and social integration of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum

Amistad Law: N.J.S.A 18A:52:16A-88-4.35 Instruction regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of secondary school students.

Holocaust Law N.J.S.A 18A:35-28  
 Instruction on the Holocaust and genocides in an appropriate place in the curriculum with an emphasis on the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

<b>Student Learning Goals/Objectives</b>
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*Students will know:*  
 Earth changes quickly through volcanoes, earthquakes, flood and landslides, and slowly through erosion, deposition, and weathering processes.  
 How to design and build a model to show how volcanoes change Earth.  
 How wind and water change the shape of land.  
 How to gather information to design a model to show how the ocean affects coastal areas.  
 How people change Earth.

*Students will be able to:*  
 2-ESS1-1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly  
 2-ESS2-1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.  
 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.

<b>Assessment Evidence</b>
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**Performance Tasks**  
 Use evidence to explain how Earth changes quickly and slowly.  
 Design models to show how ocean waves affect the shore and coastal towns, and how people can slow down changes to the surface of the Earth.

- Other Assessments**  
**Formative:**
- Lesson quizzes, and reviews
  - Student investigations and models
  - Language Arts writing activities
  - Graphic Organizers & Guided Notes
  - Directed Reading
  - Cooperative Group Learning
  - Homework
  - Journal Entries
  - Exit Tickets
  - Polls/ Surveys/ Evaluation
  - Jigsaw

## Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: 2</b>	<b>Content Area: Science</b>
	<ul style="list-style-type: none"> <li>● Think, Pair, Share</li> <li>● Quizzes</li> </ul> <p><b>Alternative:</b></p> <ul style="list-style-type: none"> <li>● Modified tests and quizzes</li> <li>● Group work</li> <li>● Peer assessments</li> <li>● Labs</li> <li>● Projects</li> <li>● Portfolio Assessments</li> </ul> <p><b>Summative</b></p> <ul style="list-style-type: none"> <li>● Unit Test/Topic Test</li> <li>● Unit Project</li> <li>● Performance Assessment/Tasks</li> <li>● Engineering projects</li> </ul> <p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"> <li>● Unit pre-test</li> <li>● Beginning of the year, mid year, and end of the year SGO</li> </ul>

<b>Core Instructional &amp; Supplemental Materials</b>	
<p><b>Suggested Activities/Resources:</b></p> <ul style="list-style-type: none"> <li>● Savvas Realize “Elevate Science”             <ul style="list-style-type: none"> <li>○ Lesson explorations</li> <li>○ Hands-on activities</li> <li>○ Virtual Labs</li> <li>○ Video based projects</li> <li>○ Performance tasks</li> <li>○ Engineering projects</li> <li>○ Student investigations</li> </ul> </li> </ul>	<p><b>Varied Levels of Text:</b></p> <ul style="list-style-type: none"> <li>● leveled readers</li> <li>● Newsela</li> <li>● Storyworks</li> <li>● Career Connection: Environmental Engineer</li> <li>● Smith, P. (2015). How do wind and water change Earth?</li> <li>● Hyde, N. (2010). Soil erosion and how to prevent it</li> <li>● Koontz, R. (2006). Erosion: Changing Earth’s surface.</li> <li>● Dorros, A. (2000). Follow the water from brook to ocean</li> <li>● Locker, T. (2002). Water dance</li> <li>● Smith, P. (2015). Earth’s landforms and bodies of water.</li> </ul>

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	<ul style="list-style-type: none"><li>• Lobel, A. (1993). Ming Lo moves the mountain</li></ul>
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### Modifications and Accommodations

#### English Language Learners:

- Provide pictures and well labeled models
- Speak slowly and gesture when necessary
- Pre-teach vocabulary words
- Extended time on assessments
- Small group for assessment
- Review Vocabulary
- Allow for alternate responses during activities and assessments
- Literacy and language support strategies including discourse
- Use a poster, slide, or picture to support student listening in science such as GLAD pictorial input chart
- Preview science texts with students, discussing salient text features such as tables, graphs, and photographs before they read it.
- Provide summaries and include native language texts.
- Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.
- Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or [Google Translate](#). Look beyond grammar and spelling to understand student ideas.
- Home culture connections

#### Special Education/504 Plans/Students with Disabilities:

- Follow specific IEP/504 accommodations and modifications
- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Allow alternate assignments and assessments
- Differentiated Instruction

#### Students at Risk of Failure:

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Incorporate social/emotional discussions
- Encourage and monitor positive peer collaboration
- Provide academic resources for both home and school use
- Provide incentives to increase motivation and collaboration

#### Economically Disadvantaged:

- Provide clear, achievable expectations, do not lower academic requirements for them.

## Long Beach Island Consolidated School District Curriculum Guide

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**Content Area: Science**

- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input
- Connect concepts to students' sense of "place" as physical, historical, and sociocultural dimensions
- Ask questions that elicit students' funds of knowledge
- Use cultural artifacts that are meaningful
- Use project-based learning as a form of connected science
- Provide resources for science instruction

### **Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers
- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Use cultural artifacts that are meaningful relevant
- Integrate community involvement
- Include role models and mentors of similar racial or ethnic backgrounds

### **Gifted and Talented**

- Peer mediated strategies
- Cooperative learning groups
- Differentiated instruction

*Presentation accommodations allow a student to:*

- Vary the method of presentation: lecture, small groups, large group, demonstration, individual experimentation
- Explore real world connections
- Use technology tools to enhance content

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: 2**

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*Response accommodations allow a student to:*

- Turn and Talk
- Reward risk taking while encouraging students to think “outside of the box”

*Setting accommodations allow a student to:*

- Use flexible seating
- Have choice in seating/grouping

*Timing accommodations allow a student to:*

- Have flexible pacing in terms of content, assignments, and assessments
- Explore extended activities

*Scheduling accommodations allow a student to:*

- Establish a timeline for completing a project
- Have rigorous Pacing

*Organization skills accommodations allow a student to:*

- Model executive functioning
- Utilize independent skills practices

*Assignment modifications allow a student to:*

- Complete enrichment tasks
- Write longer passages on essays and open ended responses including academic vocabulary
- Answer higher order thinking questions
- Cite text evidence
- Create alternate projects or assignments, student developed rubrics, student choice when completing a project or alternate labs

*Curriculum modifications provide:*

- Topics of interest to the student and/or relevant to how the world works
- Students access to supplemental reading materials matched to individual student lexiles
- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others

# Long Beach Island Consolidated School District Curriculum Guide

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<b>Unit 5: Habitats</b>	<b>Duration: 20 days</b>
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**Science Standards**  
**2-LS4-1, K-2-ETS1-2**

**Disciplinary Core Ideas**

**LS4.D Biodiversity and Humans** There are many different kinds of living things in an area, and they exist in different places on land and in water.

**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.

**Science and Engineering Practices**

SEP.1 Asking questions Define a simple problem that can be solved through the development of a new or improved object or tool.

SEP.2 Developing and Using Models Develop a simple model based on evidence to represent a proposed object or tool.

SEP.3 Planning and Carrying Out Investigations Make observations and/or measurements to collect data that can be used to make comparisons.

SEP.4 Analyzing and Interpreting Data Use observations to describe patterns and/or relationships in the natural and designed world in order to answer scientific questions and solve problems.

SEP.8 Obtaining, Evaluating, and Communicating Information Communicate information or design ideas and/or solutions with others in oral and/or written forms using models, drawing, writing or numbers that provide detail about scientific ideas, practices and/or design ideas.

**Crosscutting Concepts**

CCC.4 Systems and System Models Systems in the natural and designed world have parts that work together.

CCC.6. Structure and Function The shape and stability of structures of natural and designed objects are related to their functions.

**Connections to Nature of Science Science is a Human Endeavor**

Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

**Computer Science and Design Thinking Standards**

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process or optimize a solution. (K-2-ETS1-2)

**Interdisciplinary Standards ELA/Literacy**

W.2.7 Participate in shared research and writing projects.

# Long Beach Island Consolidated School District Curriculum Guide

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W.2.8 Recall information from experiences or gather information from provided sources to answer a question.

## **Enduring Understandings**

There are many different kinds of living things in any area, and they exist in different places on land and in water.

Plants and animals get what they need to survive from their habitats.

Events have causes that generate observable patterns.

Plants depend on water and light to grow.

## **Essential Questions**

What do plants and animals get from their habitats?

How can we conduct an investigation to determine whether plants need sunlight and water to grow?

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

*The following skills are encouraged and taught:*

Demonstrate creativity and innovation.

Utilize critical thinking to make sense of problems and persevere in solving them.

Use technology to enhance productivity increase collaboration and communicate effectively

Work productively in teams while using cultural/global competence.

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

9.4.2.Cl.1: Demonstrate openness to new ideas and perspectives

9.4.2.Cl.2: Demonstrate originality and inventiveness in work

LGBT and Disabilities Law N.J.S.A 18A:35-4.35 Instruction on the political, economic, and social integration of persons with disabilities and lesbian, gay, bisexual, and transgender people, in an appropriate place in the curriculum

Amistad Law: N.J.S.A 18A:52:16A-88-4.35 Instruction regarding the contributions of African-Americans to our country in an appropriate place in the curriculum of secondary school students.

Holocaust Law N.J.S.A 18A:35-28

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Instruction on the Holocaust and genocides in an appropriate place in the curriculum with an emphasis on the personal responsibility that each citizen bears to fight racism and hatred whenever and wherever it happens.

**Student Learning Goals/Objectives**

<p><i>Students will know:</i>                  Examples of different habitats.                  How plants and animals get what they need to survive from their habitats.                  Where plants and animals live on land.                  How to conduct an investigation to determine the best type of habitat for a plant and communicate results to others.</p>	<p><i>Students will be able to:</i>                  2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.                  K-2-ETS1-2 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.</p>
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**Assessment Evidence**

<p><b>Performance Tasks</b>                  Investigate and explore different habitats to compare their diversity.                  Conduct investigation to test the type of habitat that is best for plants.                  Plan a habitat on Mars p.202                  Protect a habitat project</p>	<p><b>Other Assessments</b>  <b>Formative:</b></p> <ul style="list-style-type: none"> <li>● Lesson quizzes, and reviews</li> <li>● Student investigations and models</li> <li>● Language Arts writing activities</li> <li>● Graphic Organizers &amp; Guided Notes</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys/ Evaluation</li> <li>● Jigsaw</li> <li>● Think, Pair, Share</li> <li>● Quizzes</li> </ul> <p><b>Alternative:</b></p> <ul style="list-style-type: none"> <li>● Modified tests and quizzes</li> <li>● Group work</li> <li>● Peer assessments</li> <li>● Labs</li> <li>● Projects</li> <li>● Portfolio Assessments</li> </ul> <p><b>Summative</b></p>
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	<ul style="list-style-type: none"> <li>● Unit Test/Topic Test</li> <li>● Unit Project</li> <li>● Performance Assessment/Tasks</li> <li>● Engineering projects</li> </ul> <p><b>Benchmark Assessments:</b></p> <ul style="list-style-type: none"> <li>● Unit pre-test</li> <li>● Beginning of the year, mid year, and end of the year SGO</li> </ul>
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### Core Instructional & Supplemental Materials

<p><b>Suggested Activities/Resources:</b></p> <ul style="list-style-type: none"> <li>● Savvas Realize “Elevate Science”             <ul style="list-style-type: none"> <li>○ Lesson explorations</li> <li>○ Hands-on activities</li> <li>○ Virtual Labs</li> <li>○ Video based projects</li> <li>○ Performance tasks</li> <li>○ Engineering projects</li> <li>○ Student investigations</li> </ul> </li> </ul> <p><a href="#">Do Plants Need Sunlight?</a> or “What Do Land Plants Need?”</p>	<p><b>Varied Levels of Text:</b></p> <ul style="list-style-type: none"> <li>● leveled readers</li> <li>● Newsela</li> <li>● Storyworks</li> <li>● Career Connection: Ecologist p. 219</li> <li>● Ward, J. (2009). The busy tree</li> <li>● Fredericks, A. (2001). Under one rock: Bugs, slugs and other ughs</li> <li>● Fleming, D. (1998). In the small, small pond.</li> <li>● Guiberson, B. (1991). Cactus hotel.</li> </ul>
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### Modifications and Accommodations

<p><b>English Language Learners:</b></p> <ul style="list-style-type: none"> <li>● Provide pictures and well labeled models</li> <li>● Speak slowly and gesture when necessary</li> <li>● Pre-teach vocabulary words</li> <li>● Extended time on assessments</li> <li>● Small group for assessment</li> <li>● Review Vocabulary</li> <li>● Allow for alternate responses during activities and assessments</li> <li>● Literacy and language support strategies including discourse</li> <li>● Use a poster, slide, or picture to support student listening in science such as GLAD pictorial input chart</li> <li>● Preview science texts with students, discussing salient text features such as tables, graphs, and photographs before they read it.</li> </ul>
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- Provide summaries and include native language texts.
- Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.
- Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or [Google Translate](#). Look beyond grammar and spelling to understand student ideas.
- Home culture connections

### **Special Education/504 Plans/Students with Disabilities:**

- Follow specific IEP/504 accommodations and modifications
- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Allow alternate assignments and assessments
- Differentiated Instruction

### **Students at Risk of Failure:**

- Strategic grouping
- Pre-teach concepts
- Small group for assessments
- Check in's during experiments to help refocus
- Incorporate social/emotional discussions
- Encourage and monitor positive peer collaboration
- Provide academic resources for both home and school use
- Provide incentives to increase motivation and collaboration

### **Economically Disadvantaged:**

- Provide clear, achievable expectations, do not lower academic requirements for them.
- Build a safe and nurturing atmosphere
- Be flexible with assignments
- Offer several alternatives from which all students can choose.
- Allow students to finish assignments independently, or give them the opportunity to complete tasks at their own pace.
- Use real-world examples and create mental models for abstract idea
- Provide increased knowledge base and vocabulary use about real world experiences.
- Share the decision making in class.
- Maintain expectations while offering choice and soliciting input
- Connect concepts to students' sense of "place" as physical, historical, and sociocultural dimensions
- Ask questions that elicit students' funds of knowledge
- Use cultural artifacts that are meaningful
- Use project-based learning as a form of connected science
- Provide resources for science instruction

### **Culturally Diverse:**

- Involve families in student learning
- Provide social/emotional support
- Respect cultural traditions
- Build in more group work to encourage interaction with peers

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- Show photos, videos, and definitions when possible for culturally unique vocabulary
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor
- Support verbal explanations with non verbal cues: Gestures/ facial expressions Props, realia, manipulatives, concrete materials Visuals, graphs, pictures, maps
- Provide positive praise to increase motivation
- Provide real world connections and emphasize the value of education
- Communicate high expectations for the success of all students
- Use cultural artifacts that are meaningful relevant
- Integrate community involvement
- Include role models and mentors of similar racial or ethnic backgrounds

### **Gifted and Talented**

- Peer mediated strategies
- Cooperative learning groups
- Differentiated instruction

#### *Presentation accommodations allow a student to:*

- Vary the method of presentation: lecture, small groups, large group, demonstration, individual experimentation
- Explore real world connections
- Use technology tools to enhance content

#### *Response accommodations allow a student to:*

- Turn and Talk
- Reward risk taking while encouraging students to think “outside of the box”

#### *Setting accommodations allow a student to:*

- Use flexible seating
- Have choice in seating/grouping

#### *Timing accommodations allow a student to:*

- Have flexible pacing in terms of content, assignments, and assessments
- Explore extended activities

#### *Scheduling accommodations allow a student to:*

- Establish a timeline for completing a project
- Have rigorous Pacing

#### *Organization skills accommodations allow a student to:*

- Model executive functioning
- Utilize independent skills practices

#### *Assignment modifications allow a student to:*

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- Complete enrichment tasks
- Write longer passages on essays and open ended responses including academic vocabulary
- Answer higher order thinking questions
- Cite text evidence
- Create alternate projects or assignments, student developed rubrics, student choice when completing a project or alternate labs

*Curriculum modifications provide:*

- Topics of interest to the student and/or relevant to how the world works
- Students access to supplemental reading materials matched to individual student lexiles
- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others