

# Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: K</b>	<b>Content Area: Science</b>
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## Kindergarten Science Curriculum

### Introduction:

Students in Kindergarten science will complete five units that include engineering and design, forces and motion, plants and animals, how the sun provides heat to the earth, and common weather patterns as well as extreme changes in weather. All science units follow the NJ Student Learning Objectives. Student progress will be measured in a variety of methods.

<b>Original Adoption: October 23, 2018</b>
<b>Revised On: July 1, 2019</b>
<b>Revised By: C. McBride, C. Sheplin</b>
<b>Revised on August 16, 2022</b>
<b>Revised By: C. McBride</b>

<b>Recommended Pacing Guide</b>	
<b>Unit 1: Pushes and Pulls</b>	20 Days
<b>Unit 2: Sunlight</b>	20 Days
<b>Unit 3: Earth's Weather</b>	20 Days
<b>Unit 4: Needs of Living Things</b>	20 Days
<b>Unit 5: Environments</b>	20 Days

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<b>Unit 1: Pushes and Pulls</b>	<b>Duration: 20 days</b>
<b>Science Standards</b> K-PS2-1, K-PS2-2, K-2-ETS1-1, K-2-ETS1-3	
<b>Disciplinary Core Ideas</b> <b>PS2.A Forces and Motion</b> Pushes and pulls can have different strengths and directions. Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. When objects touch or collide, they push on one another and can change motion. A bigger push or pull makes things speed up or slow down more quickly <b>ETS1.A: Defining and Delimiting Engineering Problems</b> A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem. <b>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. (K-2-ETS1-3)	
<b>Science and Engineering Practices</b> SEP.3 Planning and Carrying Out Investigations: With guidance, plan and conduct an investigation in collaboration with peers. SEP.4 Analyzing and Interpreting Data: Analyze data from tests of an object or tool to determine if it works as intended.	
<b>Crosscutting Concepts</b> <b>CCC.2 Cause and Effect</b> Simple tests can be designed to gather evidence to support or refute student ideas about causes	
<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>Technology Standard(s)</b> 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-ETS1-3) 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. (K-2-ETS1-1)	
<b>Interdisciplinary Standard(s) ELA/Literacy</b> RI.K.1 With prompting and support, ask and answer questions about key details in a text.	

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SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.

W.K.7 Participate in shared research and writing projects

K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference.

MP.2 Reason abstractly and quantitatively

MP.4 Model with mathematics.

## Enduring Understandings

An object starts to move when another object exerts a force on it.

Forces happen between two objects.

An object moves a long distance when a strong force is exerted on it.

An object moves a short distance when a gentle force is exerted on it.

An object starts to move in the same direction as the force that starts the motion.

Every force has a strength—gentle or strong—and a direction.

Every force has a strength—gentle or strong—and a direction, which makes the object move a certain distance and direction.

A moving object changes direction when another moving object exerts a force on it.

A moving object changes direction when a still object in its way exerts a force on it

## Essential Questions

What makes an object start to move?

What makes an object move shorter or longer distances?

What makes an object start moving in a certain direction?

What makes an object move to a certain place?

What can make a moving object change direction?

How do engineers make their solutions do all the things they want them to do?

How do engineers make their solutions do all the things they want them to do?

## 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-ETS1-3)

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

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<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>
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<b>Student Learning Goals/Objectives</b>	
<p><i>Students will know:</i></p> <p>How to organize given information using graphical or visual displays (e.g., pictures, pictographs, drawings, written observations, tables, charts). The given information students organize might include:</p> <p>The relative speed or direction of the object before a push or pull is applied (i.e., qualitative measures and expressions of speed and direction; e.g., faster, slower, descriptions* of “which way”).</p> <p>The relative speed or direction of the object after a push or pull is applied.</p> <p>How the relative strength of a push or pull affects the speed or direction of an object (i.e., qualitative measures or expressions of strength; e.g., harder, softer).</p> <p><b>Identifying relationships</b> Using their organization of the given information, students describe relative changes in the speed or direction of the object caused by pushes or pulls from the design solution.</p> <p><b>Interpreting data-</b></p>	<p><i>Students will be able to:</i></p> <p><b>K-PS2-1-</b> Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object. [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.]</p> <p><b>K-PS2-2-</b> Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull. [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions would include tools such as a ramp to increase the speed of the object and a structure that would cause an</p>

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Students describe the goal of the design solution.

Students describe their ideas about how the push or pull from the design solution causes the change in the object's motion.

Based on the relationships they observed in the data, students describe whether the push or pull from the design solution causes the intended change in speed or direction of motion of the object.

With guidance, students collaboratively identify the phenomenon under investigation, which includes the following idea: the effect caused by different strengths and directions of pushes and pulls on the motion of an object.

With guidance, students collaboratively identify the purpose of the investigation, which includes gathering evidence to support or refute student ideas about causes of the phenomenon by comparing the effects of different strengths of pushes and pulls on the motion of an object.

**Identifying the evidence to address this purpose of the investigation-**

With guidance, students collaboratively develop an investigation plan to investigate the relationship between the strength and direction of pushes and pulls and the motion of an object (i.e., qualitative measures or expressions of strength and direction; e.g., harder, softer, descriptions\* of "which way"). Students describe\* how the observations they make connect to the purpose of the investigation, including how the observations of the effects on object motion allow causal relationships between pushes and pulls and object motion to be determined

- Students predict the effect of the push or pull on the motion of the object, based on prior experiences.

**Planning the investigation-**

In the collaboratively developed investigation plan, students describe  
The object whose motion will be investigated.  
What will be in contact with the object to cause the push or pull.

object such as a marble or ball to turn.]  
[Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]

**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-ETS1-3** Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

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<p>The relative strengths of the push or pull that will be applied to the object to start or stop its motion or change its speed.</p> <p>The relative directions of the push or pull that will be applied to the object</p> <p>How the motion of the object will be observed and recorded</p> <p>How the push or pull will be applied to vary strength or direction</p> <p><b>Collecting the data-</b></p> <p>According to the investigation plan they developed, and with guidance, students collaboratively make observations that would allow them to compare the effect on the motion of the object caused by changes in the strength or direction of the pushes and pulls and record their data.</p>	
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<b>Assessment Evidence</b>
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<p><b>Performance Tasks</b></p> <p>Design simple tests to gather evidence to support or refute ideas about cause-and-effect relationships.</p> <p>Plan and conduct an investigation in collaboration with peers.</p> <p>Collaboratively plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object</p> <p>Some examples of pushes and pulls on the motion of an object could include:</p> <p>A string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, objects colliding and pushing on each other.</p> <p>Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects.</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 Note Taking</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys with self evaluation component</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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<p>Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn</p>	<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> <li>● Push and Pull Activity  <a href="https://tbamoodle.tbaisd.org/course/view.php?id=161">https://tbamoodle.tbaisd.org/course/view.php?id=161</a></li> <li>● Collision Activities (dominoes, bowling pins)</li> <li>● Pulling and pushing activities with carts, wagons, or scooters</li> <li>● “A Push or a Pull” by Peter Weatherall- music video  <a href="https://www.youtube.com/watch?v=FOcY37oGhj">https://www.youtube.com/watch?v=FOcY37oGhj</a></li> <li>● STEM Activity- Teacher Resource Video  <a href="#">Pre-Kindergarten STEM Activity at Bright Horizons</a></li> </ul> <p>Force Work and Energy Relationship - by www.makemegenius.com</p> <ul style="list-style-type: none"> <li>● <a href="https://www.youtube.com/watch?v=PD7a1EWjsTc">https://www.youtube.com/watch?v=PD7a1EWjsTc</a></li> <li>● Pushing and Pulling - Force, Work and Energy- Learning Junction</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>● <i>Talking About Forces</i></li> <li>● <i>Building with Forces</i></li> <li>● <i>Room 4 Solves a Problem</i></li> <li>● <i>A Busy Day in Pushville</i></li> <li>● <i>Forces in Ball Games</i></li> <li>● <i>Awesome Dawson</i> by Chris Gall</li> <li>● Llewellyn, C. (2004). And everyone shouted: “Pull!”: A first look at forces and motion.</li> <li>● Waring, G. (2009). Oscar and the cricket: A book about moving and rolling</li> <li>● Mayer, L. (2013). Newton and me</li> <li>● Koehler, L. (2015). The little snowplow.</li> </ul>

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<p><a href="https://www.youtube.com/watch?v=vAThuCmwp9I">https://www.youtube.com/watch?v=vAThuCmwp9I</a></p> <ul style="list-style-type: none"><li>• “Push and Pull” song <a href="https://www.youtube.com/watch?v=XZlqas0tixo">https://www.youtube.com/watch?v=XZlqas0tixo</a></li><li>• NASA Engineering in the Classroom <a href="https://www.jpl.nasa.gov/edu/teach/resources/engineering-in-the-classroom.php">https://www.jpl.nasa.gov/edu/teach/resources/engineering-in-the-classroom.php</a></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
- 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

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- 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
- 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

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- 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 2: Matter</b>	<b>Duration: 20 days</b>
<b>Science Standards</b> K-2 ETS1-1, K-2-ETS1-2	
<b>Disciplinary Core Ideas</b> <b>ETS1.A Defining and Delimiting Engineering Problems</b> A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.	
<b>Science and Engineering Practices</b> SEP.1 Asking questions and Defining Problems Ask questions based on observations to find more information about the natural and/or designed world(s). SEP.3 Planning and Carrying Out Investigations: Make observations (firsthand or from media) to collect data that can be used to make comparisons SEP.4 Analyzing and Interpreting Data: Analyze data from tests of an object or tool to determine if it works as intended.	
<b>Crosscutting Concepts</b> CCC.6 Structure and Function The shape and stability of structures of natural and designed objects are related to their function.	
<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>Technology Standard(s)</b> 8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.	
<b>Interdisciplinary Standard(s) ELA/Literacy</b> RI.2.1 Ask and answer questions as who, what, where, when, why and how to demonstrate understanding of key details in a text. W.2.8 Recall information from experiences or gather information from provided sources to answer a question. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics	

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## **Enduring Understandings**

Matter can be measured, observed, and sorted  
Matter can change  
Matter can be found in three states.  
Understanding matter can be used to improve the function of objects.

## **Essential Questions**

How can we describe objects?  
How can objects be alike and different?  
How can objects be measured?  
How can objects change?  
How can we ask questions to find information about objects?  
How can we plan and carry out an investigation?  
How can we use matter to improve the function of objects?

## **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

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.

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<b>Student Learning Goals/Objectives</b>	
<p><i>Students will know:</i>                      How objects are alike and different                      Objects (Matter) can be changed                      Objects can be measured and sorted                      There are three states of matter</p>	<p><i>Students will be able to:</i>  <b>K-2-ETS1-1</b> 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.  <b>K-2 ETS1-2</b> Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a problem</p>
<b>Assessment Evidence</b>	
<p><b>Performance Tasks</b>                      Describe, measure and sort objects                      Identify and sort objects in three states of matter                      Ask questions and make observations to gather information about a problem that can be solved through the development of a new or improved tool.                      Improve the design of a hot air balloon to make it fly higher and farther.</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 Note Taking</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys with self evaluation component</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> </ul>

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	<ul style="list-style-type: none"> <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>Describe, measure and sort objects Compare and contrast objects. Improve the function of a hot air balloon to make it fly higher.</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>● “Change it: Solids, Liquids, Gasses and You” by Adrienne Mason</li> <li>● “Solids, Liquids, and Gasses” by Ginger Garrett</li> <li>● “What is the World Made of” by Kathlween Zoehfeld</li> <li>● “What is a Liquid?” by Jennifer Boothroyd</li> <li>● “What is a Solid?” by Jennifer Boothroyd</li> <li>● “What is a Gas?” by Jennifer Boothroyd</li> <li>● What’s the Matter with Mr. Whiskers’ Room?”</li> <li>● “Solids, Liquids, and Gasses” by Carol Lindeen</li> <li>● What is Matter?” by Don Curry</li> <li>● “Matter Comes in all Shapes” by Amy Hansen</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> </ul>

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

**Content Area: Science**

- 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
- Provide resources for science instruction

# Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

**Content Area: Science**

## **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: K**

**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

# Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: K</b>	<b>Content Area: Science</b>
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<b>Unit 3: Sunlight</b>	<b>Duration: 20 days</b>
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**Science Standards**  
K-PS3-1, K-PS3-2, K-2-ETS1-1

**Disciplinary Core Ideas**  
**PS3.B Conservation of Energy and Matter** Sunlight warms Earth's surface  
**ETS1.A Defining and Delimiting Engineering Problems** A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem.

**Science and Engineering Practices**  
SEP.3 Planning and Carrying Out Investigations: Make observations (firsthand or from media) to collect data that can be used to make comparisons  
SEP.4 Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.

**Crosscutting Concepts**  
**CCC.2 Cause and Effect** Events have causes that generate observable patterns.

**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.

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

**Interdisciplinary Standard(s) ELA/Literacy**  
RI.K.1 With prompting and support, ask and answer questions about key details in a text.  
RI.K.2 With prompting and support, identify the main topic and key details of a text.  
RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

**Enduring Understandings**

Properties of sunlight  
Sunlight warms Earth's surface

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

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How to use materials to reduce warming effects of sunlight.  
Scientists use different ways to study the world.  
Events have causes that generate observable patterns.  
The shape and stability of structures of natural and designed objects are related to their function(s).  
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. Because there is always more than one possible solution to a problem, it is useful to compare and test designs.

### **Essential Questions**

What are the properties of sunlight?  
How does sunlight affect Earth's surface?  
How can we use materials to reduce the warming effects of sunlight?

### **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)  
9.4.2.Cl.2: Demonstrate originality and inventiveness in work (K-2 ETS1-1)

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.

## Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: K</b>	<b>Content Area: Science</b>
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<b>Student Learning Goals/Objectives</b>	
<p><i>Students will know:</i></p> <p>Properties of sunlight (how to describe the sun)</p> <p>How sunlight affects Earth’s surface</p> <p>How to design structures using different materials that reduce the warming effect of sunlight</p>	<p><i>Students will be able to:</i></p> <p><b>K-PS3-1</b> Make observations to determine the effect of sunlight on Earth’s surface.</p> <p><b>K-PS3-2</b> Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.</p> <p><b>K-2-ETS1-1</b> 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>
<b>Assessment Evidence</b>	
<p><b>Performance Tasks</b></p> <p>Observe patterns in events generated by cause-and-effect relationships.</p> <p>Make observations (firsthand or from media) to collect data that can be used to make comparisons.</p> <p>Make observations to determine the effect of sunlight on Earth’s surface. (Assessment of temperature is limited to relative measures such as warmer/cooler: “How can the sun make temperature change?”.)</p> <p>Examples of Earth’s surface could include sand, soil, water</p> <p>Observe patterns in events generated by cause-and-effect relationships.</p> <p>Describe how the shape and stability of structures are related to their function.</p> <p>Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem.</p> <p>Use tools and materials to design and build a structure (e.g., umbrellas, canopies, tents) that will reduce the warming effect of sunlight on an area</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 Note Taking</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys with self evaluation component</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> </ul>

# Long Beach Island Consolidated School District Curriculum Guide

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<p>Develop a simple model based on evidence to represent a proposed object or tool.</p> <p>Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.</p> <p>Analyze data from tests of an object or tool to determine if it works as intended.</p> <p>Analyze data from tests of two objects designed to solve the same problem to compare the strengths.</p>	<ul style="list-style-type: none"> <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>Sid the Science Kid: Shadows  <a href="https://why.pbslearningmedia.org/resource/0b9da686-055d-4db4-9ae8-03a4177daedb/0b9da686-055d-4db4-9ae8-03a4177daedb/">https://why.pbslearningmedia.org/resource/0b9da686-055d-4db4-9ae8-03a4177daedb/0b9da686-055d-4db4-9ae8-03a4177daedb/</a></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>● <a href="#">Casting Shadows Across Literacy and Science   Read Write Think</a></li> <li>● “What Makes a Shadow?” by Clyde Bulla</li> <li>● “The Sun: Our Nearest Star” and “What Makes Day and Night?” by Franklyn Branley “Sun Up, SUn Down” by Gail Gibbons</li> <li>● “Energy from the Sun” by Allan Fowler</li> <li>● <i>Getting Warm in the Sunlight</i></li> <li>● <i>Cool People in Hot Places</i></li> <li>● <i>Handbook of Models</i></li> <li>● <i>Asch, F. (2008). The sun is my favorite star</i></li> <li>● <i>Branley, F. (2002). The sun: Our nearest star</i></li> <li>● <i>Kleven, E. (2004). Sun bread.</i></li> <li>● <i>Bang, M. (2004). My light.</i></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> </ul>

## Long Beach Island Consolidated School District Curriculum Guide

Grade: K

Content Area: Science

- 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.
- 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

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

**Content Area: Science**

- 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

#### *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

## Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

**Content Area: Science**

*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

<b>Grade: K</b>	<b>Content Area: Science</b>
<b>Unit 4: Earth's Weather</b>	<b>Duration: 20 days</b>
<b>Science Standards</b> K-ESS2-1, K-ESS3-2, K-2-ETS1-1, K-2-ETS1-2, K-2-ETS1-3	
<b>Disciplinary Core Ideas</b> <b>ESS2.D Weather and Climate</b> Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. <b>ESS3.B Natural Hazards</b> Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. <b>ETS1.A Defining and Delimiting Engineering Problems</b> A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem. <b>ETS1.B Developing Possible Solutions</b> 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.	
<b>Science and Engineering Practices</b> SEP.2 Developing and Using Models Develop a model to represent patterns in the natural world. SEP.3 Planning and Carrying Out Investigations: With guidance, plan and conduct an investigation in collaboration with peers. SEP.4 Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. SEP.8 Obtaining, Evaluating, and Communicating Information Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.	
<b>Crosscutting Concepts</b> <b>CCC.1 Patterns</b> Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. <b>CCC.2 Cause and Effect</b> Events have causes that generate observable patterns.	
<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>Technology Standard(s)</b>	

# Long Beach Island Consolidated School District Curriculum Guide

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8.2.2.ED.1: Communicate the function of a product or device. (K-ESS2-1, K-ESS3-2)  
8.2.2.ITH.3: Identify how technology impacts or improves life. (K-ESS2-1, K-ESS3-2)  
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)  
8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process. (K-2-ETS1-1)

## **Interdisciplinary Standard(s) ELA/Literacy**

RI.K.1 With prompting and support, ask and answer questions about key details in a text.  
K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

## **Enduring Understandings**

Weather is the combination of sunlight, wind, snow, or rain and temperature in a particular region at a particular time.  
People measure these conditions to describe and record the weather and to notice patterns over time.  
People look for patterns in the weather data when they organize and order when making observations about the world.  
Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.  
Some kinds of severe weather are more likely than others in a given region.  
Weather scientists forecast severe weather so that communities can prepare for and respond to these events.  
Events have causes that generate observable patterns.  
People encounter questions about the natural world every day.  
People depend on various technologies in their lives; human life would be very different without technology.  
Before beginning to design a solution, it is important to clearly understand the problem.  
Asking questions, making observations, and gathering information are helpful in thinking about problems.  
A situation that people want to change or create can be approached as a problem to be solved through engineering

## **Essential Questions**

What are different types of weather?  
How can we make observations about the weather?  
What patterns do you observe in the weather?  
How does the weather change?  
How can we prepare for severe weather?  
How can technology be used to help us prepare for severe weather?

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

## Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: K</b>	<b>Content Area: Science</b>
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*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)

9.4.2.Cl.2: Demonstrate originality and inventiveness in work (K-2 ETS1-1)

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:*  
 Patterns in the weather and different types of weather.  
 Weather in different seasons.  
 Technology used to predict the weather.  
 Patterns in events generated by cause-and-effect relationships  
 How to read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world.  
 How to ask questions based on observations to find more information about the designed world.  
 How to ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather.

*Students will be able to:*  
**K-ESS2-1** Use and share observations of local weather conditions to describe patterns over time.  
**K-ESS3-2** Ask questions to obtain information about the purpose of weather forecasting to prepare for and respond to severe weather.  
**K-ETS1-2** Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.  
**K-2-ETS1-1** Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through

# Long Beach Island Consolidated School District Curriculum Guide

<b>Grade: K</b>	<b>Content Area: Science</b>
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<p>(Emphasis is on local forms of severe weather.)          How to define a simple problem that can be solved through the development of a new or improved object or tool.          How to ask questions, make observations, and gather information about a situation people want to change in order to define a simple problem that can be solved through the development of a new or improved object or tool.</p>	<p>the development of a new or improved object or tool.</p>
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<b>Assessment Evidence</b>
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<p><b>Performance Tasks</b>          What kinds of severe weather events tend to occur in New Jersey (e.g., thunderstorms, hurricanes, flooding, snow storms)?          What do people do in response to these types of severe weather events?          What kinds of tools can people use to solve problems caused by severe weather conditions (e.g., umbrellas, sandbags, salt, gravel, shovels, snow blowers)?          What other solutions might people use for problems caused by severe weather (e.g., closing schools and businesses; sending out emergency workers to restore utilities; sending out early warnings; stockpiling food, water, and other supplies; having a portable generator)?          What kinds of problems would we face if we had a lot of rain in a short period of time?          What problems might we have if our community experienced flooding? What kinds of problems might occur if strong winds caused damage (e.g., knocked over trees, damaged power lines, damaged homes and businesses)?          What kinds of precautions do people take during a hurricane? A tornado? A Nor'easter? Why?</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 Note Taking</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys with self evaluation component</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>
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<b>Grade: K</b>	<b>Content Area: Science</b>
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<p>Create a digital story to identify how technology can be used to improve people’s lives by forecasting severe weather.          “How can you collect rain?” activity p.117          “Predict the Weather” p.121          “What is the weather like in different seasons?” p.123          Watch a weather forecast and listen for the types of technology used to predict the weather. P.133          Explore how the wind moves: “How does the wind move?”. P. 134</p>	<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><a href="#">What's it Like Being a Broadcast Meteorologist?   NOAA SciJinks – All About Weather</a></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>● “May I Come In?” by Marsha Diane Arnold</li> <li>● “Picnic” by Matt Phelan</li> <li>● “A Year with the Wind” by Hanna Konola</li> <li>● “The Weather Girls” by Aki</li> <li>● “Tap Tap Boom Boom” by Elizabeth Bluemle</li> <li>● “Sun” by Sam Usher</li> <li>● “The Rain Came Down” by David Shannon</li> <li>● “Come On, Rain!” by Karen Hesse</li> <li>● “When the Wind Blows” by Linda Sweeney</li> <li>● “On a Magical Do Nothing Day” by Beatrice Alemanga</li> <li>● “Cloudy with a Chance of Meatballs” by Judi Barrett</li> <li>● “Thunder Cake” by Patricia Pollaco</li> <li>● “Types of Precipitation by Nadia Higgins</li> </ul>

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	<ul style="list-style-type: none"><li>• “Next Time You See a Cloud” by Emily Morgan</li><li>• “Green City: How one community survived a tornado and rebuilt for a sustainable future” by Allan Drummand</li><li>• Rabe, T. (2004). Oh say can you say what’s the weather today? All about weather</li><li>• Gibbons, G. (1993). Weather forecasting.</li><li>• Dean. J. (2013). Freddy the frogcaster</li><li>• DeWitt, L. (2015). What will the weather be?</li><li>• Kaner, E. (2007). Who likes the rain? (Exploring the elements).</li><li>• Hutchins, P. (1993). The wind blew</li><li>• Shannon, D. (2000). The rain came down.</li><li>• Asch, F. (2008). Like a windy day</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.

# Long Beach Island Consolidated School District Curriculum Guide

**Grade: K**

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- 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
- Teach study skills
- Provide students with necessary academic resources and materials
- Allow for alternative assignments
- Provide visuals
- Assign peer tutor

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- 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
- 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

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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

<b>Unit 5: Needs of Living Things</b>	<b>Duration: 20 days</b>
<b>Science Standards</b> K-LS1-1, K-2-ETS1-1, K-2-ETS1-2	
<p><b>Disciplinary Core Ideas</b></p> <p><b>LS1.C Organization for Matter and Energy Flow in Organisms</b> All organisms need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.</p> <p><b>ETS1.B Developing Possible Solutions</b> 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.</p>	
<p><b>Science and Engineering Practices</b></p> <p>SEP.1 Asking questions and Defining Problems Define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>SEP.2 Developing and Using Models Use a model to represent relationships in the natural world.</p> <p>SEP.4 Analyzing and Interpreting Data Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.</p> <p>SEP.6 Constructing Explanations and Designing Solutions Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem</p>	
<p><b>Crosscutting Concepts</b></p> <p><b>CCC.1 Patterns</b> Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.</p>	
<p><b>Connections to Nature of Science Science is a Human Endeavor</b></p> <p>Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.</p>	
<b>Technology Standard(s)</b>	

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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)

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

## **Interdisciplinary Standard(s) ELA/Literacy**

RI.K.1 With prompting and support, ask and answer questions about key details in a text.

RI.K.3 With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

K.CC.5 Count to answer, "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

## **Enduring Understandings**

An animal needs to eat food to live.

Animals can only live in a place that has the food they need.

When plants grow, they get bigger and have new parts that were not there before.

Plants need water from the place where they are in order to live and grow.

Animals need water from the place where they are in order to live and grow.

Plants get water they need with their roots from the soil around them.

Plants need light to live and grow

Plants get light they need with their leaves.

What scientists learn about living things can help people make choices about what to do.

Plants and animals grow and change

There are patterns in the needs of living things.

Living things follow patterns in their life cycles.

## **Essential Questions**

How are living things alike and different?

What do living things need to survive?

What does it look like when plants grow?

Do plants need water to grow?

How do plants get the water they need?

Do plants need light to live and grow?

How do plants get light?

How can humans make sure that other living things can live and grow? How do living things get what they need to survive?

How do living things grow and change?

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

*The following skills are encouraged and taught:*

Demonstrate creativity and innovation.

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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 (K-2 ETS1-1)  
 9.4.2.CI.2: Demonstrate originality and inventiveness in work (K-2 ETS1-1)  
 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive) (K-2 ETS1-1)

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>	
<p><i>Students will know:</i>                      What plants and animals need to survive                      Plants and animals grow and change                      There are patterns in the needs of living things.                      Living things follow patterns in their life cycles.</p>	<p><i>Students will be able to:</i>  <b>K-LS1-1</b> Use observations to describe patterns of what plants and animals (including humans) need to survive.  <b>K-ETS1-2</b> Develop a simple sketch, drawing or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.  <b>K-2-ETS1-1</b> 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>
<b>Assessment Evidence</b>	
<b>Performance Tasks</b>	<b>Other Assessments</b>

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<p>Explore what plants and animals need to survive: With guidance, students organize the given data from observations (firsthand or from media) using graphical displays (e.g., pictures, charts), including: different types of animals, data about the foods different animals eat and drink, data about plants' needs for water, data about plants' need for light</p> <p>Students identify patterns in the organized data, including that: All animals eat food, all animals drink water, plants cannot live or grow if there is no water, plants cannot live or grow if there is no light.</p> <p>Students describe that the patterns they identified in the data provide evidence that: plants need light and water to live and grow, animals need food and water to live and grow, animals get their food from plants, other animals, or both.</p> <p>Discover that plants and animals change throughout their lives. Determine patterns in the needs of living things and their life cycles Make observations, analyze data and use models to compare and contrast living things.</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 Note Taking</li> <li>● Directed Reading</li> <li>● Cooperative Group Learning</li> <li>● Homework</li> <li>● Journal Entries</li> <li>● Exit Tickets</li> <li>● Polls/ Surveys with self evaluation component</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>
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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> </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>● <i>Science Walk</i></li> <li>● <i>A Plant In the Desert</i></li> </ul>

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<ul style="list-style-type: none"> <li>○ Video based projects</li> <li>○ Performance tasks</li> <li>○ Engineering projects</li> <li>○ Student investigations</li> </ul> <p><a href="https://why.pbslearningmedia.org/resource/dc02.sci.life.colt.alive/is-it-alive/Living-and-Non-Living-Science-Living-Things-and-Their-Needs-BioEd-Online">https://why.pbslearningmedia.org/resource/dc02.sci.life.colt.alive/is-it-alive/Living and Non-Living, Science Living Things and Their Needs   BioEd Online</a></p> <p><a href="https://why.pbslearningmedia.org/resource/evscps.sci.life.seed/from-seed-to-fruit/">https://why.pbslearningmedia.org/resource/evscps.sci.life.seed/from-seed-to-fruit/</a></p> <p><a href="https://why.pbslearningmedia.org/resource/hnkgard.sci.ess.water/think-garden-the-importance-of-water/">https://why.pbslearningmedia.org/resource/hnkgard.sci.ess.water/think-garden-the-importance-of-water/</a></p> <p><a href="https://why.pbslearningmedia.org/resource/5dea21b4-6c92-46ff-982c-8650f9429c01/think-garden-plant-structure/">https://why.pbslearningmedia.org/resource/5dea21b4-6c92-46ff-982c-8650f9429c01/think-garden-plant-structure/</a></p>	<ul style="list-style-type: none"> <li>● <i>Above and Below</i></li> <li>● <i>Investigating Monarchs</i></li> <li>● <i>Handbook of Plants</i></li> <li>● <a href="#">Reading and Writing About Whales Using Fiction and Nonfiction Texts</a></li> <li>● <i>Barrett, J. (1988). Animals should definitely not wear clothing</i></li> <li>● <i>Mazer, A. (1994). The salamander room</i></li> <li>● <i>Cannon, J. (1993). Stellanuna</i></li> <li>● <i>Stewart, M. (2014) Feathers: Not just for flying.</i></li> </ul>

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> <li>● Provide summaries and include native language texts.</li> <li>● Provide sentence stems for all students to use, especially to support complex verbal practices like argumentation, explanation, and communication.</li> <li>● Engage ELs in authentic vocabulary exploration as they try to make their thoughts meaningful to others through writing. Provide dictionaries or <a href="#">Google Translate</a>. Look beyond grammar and spelling to understand student ideas.</li> <li>● Home culture connections</li> </ul> <p><b>Special Education/504 Plans/Students with Disabilities:</b></p> <ul style="list-style-type: none"> <li>● Follow specific IEP/504 accommodations and modifications</li> <li>● Strategic grouping</li> <li>● Pre-teach concepts</li> </ul>

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

- Strategic grouping
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#### *Scheduling accommodations allow a student to:*

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#### *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

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**Content Area: Science**

- Opportunities for open-ended, self-directed activities
- Opportunities to get graded or assessed using a different standard than the one for others.