

Eagleswood Township School District Curriculum
Science
Grade 1

Standard Alignment September 2016
NJDOE Adoption Date September 2016
BOE Approved January 2021

Pacing Guide

Unit	Anticipated Timeframe
Unit 1: Engineering and Technology	18 Days
Unit 2: Sound	35 Days
Unit 3: Light	35 Days
Unit 4: Plant and Animal Structures	35 Days
Unit 5: Living Things and Their Young	35 Days
Unit 6: Objects and Patterns in the Sky	18 Days

Core Materials:
Studies Weekly
Houghton Mifflin Harcourt Science Dimensions

	Correlation Key	
Holocaust	Amistad	Financial Literacy

<u>Career Readiness, Life Literacies, and Key Skills Practices</u>	
Act as a responsible and contributing community members and employee.	Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
Consider the environmental, social and economic impacts of decisions.	Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.
Demonstrate creativity and innovation.	Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.

<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>

<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Career Readiness, Life Literacies, and Key Skills Core Ideas

This unit will incorporate the following core ideas

- There are ways to keep the things we value safely at home and other places.
- Different types of jobs require different knowledge and skills.
- Brainstorming can create new, innovative ideas
- Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
- Digital artifacts can be owned by individuals or organizations.
- Digital tools and media resources provide access to vast stores of information that can be searched.
- Digital tools can be used to display data in various ways.
- Digital tools have a purpose.
- Collaboration can simplify the work an individual has to do and sometimes produce a better product

Standard 8.1 Computer Science Core Ideas

This unit will include incorporate the following core ideas.

- Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.
- Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
- Individuals collect, use, and display data about individuals and the world around them.
- Data can be used to make predictions about the wor

Standard 8.2 Design Thinking Core Ideas

This Unit will incorporate the following core ideas.

- Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
- Limitations (constraints) must be considered when engineering designs.
- Human needs and desires determine which new tools are developed.
- Technology has changed the way people live and work.
- Various tools can improve daily tasks and quality of life.
- The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.
- The availability of technology for essential tasks varies in different parts of the world.

Unit 1: Science / 1st Grade

Duration: 15-20 Days (September)

Engineering and Technology

Standards:

1-PS4-1: Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate

1-PS4-2: Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated

1-PS4-3: Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light

1-PS4-4: Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance

Unit Summary: Students will be exposed to engineering and technology. This unit has two lessons attached to it and should be completed in about 15-20 Days. They will be able to define and identify problems, define and identify examples of technology, describe how people understand problems and use technology to solve problems, and explore and apply a design process

Interdisciplinary Skills

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Art

SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.1.B - Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.

SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

Computer Science and Design Thinking

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.

8.2.2.ITH.2: Explain the purpose of a product and its value.

Career Readiness, Life Literacies, and Key Skills

9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Essential Understanding

Essential Questions

Students will understand that...

- Engineers use technology in different ways
- Engineers solve different problems

- How do engineers use technology?
- How can we solve a problem?

Evidence of Student Learning

<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p>	<p>Other Assessments</p>
<ul style="list-style-type: none"> ● Pocket-Lock It - Design a way to keep things from falling out of your pocket 	<p>Formative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Interactive Notebook ● Performance Assessments ● Exit Slips ● Response Cards ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Quizzes ● Summary ● Labs ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p>

	<ul style="list-style-type: none"> • Teacher Observations • Group Work/Class Work
Vocabulary engineer/problem/solution/technology/design process	
Knowledge and Skills	
Content	Skills
<i>Students will know...</i> <ul style="list-style-type: none"> • How engineers use technology • How engineers solve problems 	<i>Students will be able to...</i> <ul style="list-style-type: none"> • Define and identify problems • Define and identify examples of technology • Describe how people understand problems and use technology to solve problems • Explore and apply a design process
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> - Keep headphones from tangling - Prevent a cat from scratching furniture 	<ul style="list-style-type: none"> - www.brainpopjr.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts)

Print Materials	
- HMH Science Dimensions Textbook/Workbook	
Websites	
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Modifications	
<p>Special Education Students / 504 <i>(These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan)</i> reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.</p> <p>English Language learners: <i>use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.</i></p> <p>Students at Risk of Failure: <i>Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.</i></p> <p>Gifted Students: <i>provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.</i></p>	

**For additional modifications and accommodations, see below*

English Language Learners

- Pre Teach vocabulary using visuals and gestures
- Chunk texts
- Graphic organizers
- Labeled pictures related to concept

Gifted and Talented

- Higher level questioning
- Students design questions
- Higher level texts
- Choice of activity to extend learning
- Expose to sophisticated vocabulary

Basic Skills/Economically Disadvantaged/Students at Risk

- Provide small group instructions
- Pre-teach concepts
- Build background knowledge
- Daily Log

Special Education

- Follow all IEP modifications
- Provide student with specific graphic organizers to help them note take about the different levels of government
- Provide opportunity to draw solution strategies
- Provide students with notes from the lesson and discussions
- Labeled pictures related to concepts

504

- Provide differentiated instruction as needed

- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
- Modified textbooks or audio-video materials

Unit 2 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Planning and Carrying Out Investigations</p> <p>Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. (1-PS4-1),(1-PS4-3)</p> <p>Constructing Explanations and Designing Solutions</p> <p>Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Make observations (firsthand or</p>	<p>PS4.A: Wave Properties Sound can make matter vibrate, and vibrating matter can make sound. (1-PS4-1)</p> <p>PS4.B: Electromagnetic Radiation Objects can be seen if light is available to illuminate them or if they give off their own light. (1-PS4-2) Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them, where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.) (1- PS4-3)</p> <p>PS4.C: Information Technologies and Instrumentation People also use a variety</p>	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes. (1-PS4-1),(1-PS4-2),(1-PS4-3)</p> <p>-----</p> <p>- Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Engineering, Technology, and Science, on Society and the Natural World People depend on various technologies in their lives; human life would be very different without technology. (1-PS4-4)</p>

<p>from media) to construct an evidence-based account for natural phenomena. (1- PS4-2) Use tools and materials provided to design a device that solves a specific problem. (1-PS4-4)</p> <p>-----Co nnections to Nature of Science Scientific Investigations Use a Variety of Methods Science investigations begin with a question. (1-PS4-1) Scientists use different ways to study the world. (1-PS4-1)</p>	<p>of devices to communicate (send and receive information) over long distances. (1- PS4-4)</p>	
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- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.

- The availability of technology for essential tasks varies in different parts of the world.

Unit 2: Science/1st Grade Sound	Duration: 30-40 Days (October-November)
Standards:	1-PS4-1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate 1-PS4-4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance
Unit Summary: Students will be exposed to sound. This unit has two lessons attached to it and should be completed in about 15-20 Days. They will be able to explore relationships, compare and contrast, investigate, identify, and explore how technology is used.	
NJ Student Learning Standards	
Interdisciplinary Skills	
Primary Interdisciplinary Connections: <u>Infused within the unit are connections to the NJSLs for Mathematics, Language Arts</u>	
SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).	
SL.1.1.B - Build on others' talk in conversations by responding to the comments of others through multiple exchanges.	
SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.	
SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.	
Computer Science and Design Thinking	

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

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8.2.2.ITH.2: Explain the purpose of a product and its value.

Career Readiness, Life Literacies, and Key Skills

9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Essential Understandings

Essential Questions

<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Sound is a kind of energy you hear when something vibrates ● You can share information using sound 	<ul style="list-style-type: none"> ● What is sound? ● How can we communicate with sound?
<p>Evidence of Student Learning</p>	
<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p>	<p>Other Assessments</p>
<ul style="list-style-type: none"> ● Explore sound - humming, playing kazoos, and play music through a speaker to make a connection between vibrations and sound 	<p>Formative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Interactive Notebook ● Performance Assessments ● Exit Slips ● Response Cards ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Quizzes ● Summary ● Labs

	<ul style="list-style-type: none"> ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Participation Rubric ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>sound/vibrate/volume/pitch/communicate</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> ● What sound is ● How you can communicate with sound 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Explore the relationship between sound and vibration ● Compare the volume and the pitch of different sounds ● Investigate how sound makes materials move ● Identify ways people communicate using sound ● Explore how technology is used to help people communicate with sound over distances

Instructional Plan

Suggested Activities

- Draw pictures of things that make light or sound.
- Take a listening walk in and around the building.
- Make a kazoo or paper cup telephone.
-
- Make instruments out of recyclable items.
- Use tuning forks to make sounds of various pitches.
- Make something move with sound (rice on a bowl)
- Blow a whistle and then create something that will amplify that sound

Resources

- www.brainpopjr.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
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Print Materials

- HMH Science Dimensions Textbook/Workbook

Websites

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Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Preview lessons
- Labeled pictures
- Using tactile objects to relate to key ideas
- Build background knowledge
- Use visuals

Gifted and Talented

- Higher level questioning

- Students design questions
- Differentiated Assignments
- Choice board to extend learning
- Complete different homework problems than peers
-

Basic Skills/Economically Disadvantaged/Students at Risk

- Highlight key words
- Frequent breaks
- Preview lessons
- Graphic organizers

Special Education

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Provide students with a study guide before a test or quiz to help them prepare
- Pre-teach and model strategies to learn and practice new vocabulary words pertaining to the unit
- Modified assignments
- Modified textbooks or audio-video materials

504

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
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Holocaust	Amistad	Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

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<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>

<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>

<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Unit 3 Disciplinary Core Ideas Chart

<p style="text-align: center;">Science and Engineering Practices</p>	<p style="text-align: center;">Disciplinary Core Ideas</p>	<p style="text-align: center;">Crosscutting Concepts</p>
<p>Planning and Carrying Out Investigations</p> <p>Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Plan and conduct investigations collaboratively to produce data to serve as the basis for evidence to answer a question. (1-PS4-1),(1-PS4-3)</p>	<p>PS4.A: Wave Properties Sound can make matter vibrate, and vibrating matter can make sound. (1-PS4-1)</p> <p>PS4.B: Electromagnetic Radiation Objects can be seen if light is available to illuminate them or if they give off their own light. (1-PS4-2) Some materials allow light to pass through them, others allow only some light through and others block all the light and create a dark shadow on any surface beyond them,</p>	<p>Cause and Effect Simple tests can be designed to gather evidence to support or refute student ideas about causes. (1-PS4-1),(1-PS4-2),(1-PS4-3)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science Influence of Engineering, Technology, and Science, on Society and the Natural World People depend on various technologies in their lives; human life would be very different without technology. (1-PS4-4)</p>

<p>Constructing Explanations and Designing Solutions</p> <p>Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (1- PS4-2) Use tools and materials provided to design a device that solves a specific problem. (1-PS4-4)</p> <p>-----Co</p> <p>nnexions to Nature of Science Scientific Investigations Use a Variety of Methods Science investigations begin with a question. (1-PS4-1) Scientists use different ways to study the world. (1-PS4-1)</p>	<p>where the light cannot reach. Mirrors can be used to redirect a light beam. (Boundary: The idea that light travels from place to place is developed through experiences with light sources, mirrors, and shadows, but no attempt is made to discuss the speed of light.) (1- PS4-3)</p> <p>PS4.C: Information Technologies and Instrumentation People also use a variety of devices to communicate (send and receive information) over long distances. (1- PS4-4)</p>	
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Career Readiness, Life Literacies, and Key Skills Core Ideas

This unit will incorporate the following core ideas

- There are ways to keep the things we value safely at home and other places.
- Different types of jobs require different knowledge and skills.
- Brainstorming can create new, innovative ideas
- Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
- Digital artifacts can be owned by individuals or organizations.
- Digital tools and media resources provide access to vast stores of information that can be searched.

- Digital tools can be used to display data in various ways.
- Digital tools have a purpose.
- Collaboration can simplify the work an individual has to do and sometimes produce a better product

Standard 8.1 Computer Science Core Ideas

This Unit will include incorporate the following core ideas.

- Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.
- Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
- Individuals collect, use, and display data about individuals and the world around them.
- Data can be used to make predictions about the wor

Standard 8.2 Design Thinking Core Ideas

This Unit will incorporate the following core ideas.

- Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
- Limitations (constraints) must be considered when engineering designs.
- Human needs and desires determine which new tools are developed.
- Technology has changed the way people live and work.
- Various tools can improve daily tasks and quality of life.
- The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.
- The availability of technology for essential tasks varies in different parts of the world.

Unit 3: Science/1st Grade

Duration: 30-40 Days (December-January)

Light	
<p>Standards:</p> <p>1-PS4-2 Make observations to construct an evidence-based account that objects in darkness can be seen only when illuminated</p> <p>1-PS4-3 Plan and conduct investigations to determine the effect of placing objects made with different materials in the path of a beam of light</p> <p>1-PS4-4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance</p>	
<p>Unit Summary: Students will be exposed to light. This unit has three lessons attached to it and should be completed in about 30-40 Days. They will be able to provide evidence based on observations, explain using evidence, explain and demonstrate, observe, and explore.</p>	
<p>NJ Student Learning Standards</p>	
<p>Interdisciplinary Skills</p>	
<p>Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLs for Mathematics, Language Arts</p>	
<p>SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).</p> <p>SL.1.1.B - Build on others' talk in conversations by responding to the comments of others through multiple exchanges.</p> <p>SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.</p> <p>SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.</p>	
<p>Computer Science and Design Thinking</p>	
<p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.</p>	

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.

8.2.2.ITH.2: Explain the purpose of a product and its value.

Career Readiness, Life Literacies, and Key Skills

9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Essential Understandings

Essential Questions

<p><i>Students will understand that...</i></p> <ul style="list-style-type: none"> ● Light helps us see ● Materials block light ● Light travels 	<ul style="list-style-type: none"> ● How does light help us see? ● How do material block light? ● How does light travel?
<p>Evidence of Student Learning</p>	
<p>Performance Tasks: <i>Activities to provide evidence for student learning of content and cognitive skills.</i></p> <ul style="list-style-type: none"> ● Make a rainbow using water, a glass, white paper, and a bright light 	<p style="text-align: center;">Other Assessments</p> <p>Formative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Interactive Notebook ● Performance Assessments ● Exit Slips ● Response Cards ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Quizzes ● Summary ● Labs ● Hands-On Activities <p>Benchmark Assessment</p>

	<ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>light/shadow/reflect</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know...</i></p> <ul style="list-style-type: none"> ● How light helps them see ● How materials block light ● How light travels 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Provide evidence, based on observations, of the relationship between the amount of light and how an object is seen ● Explain, using evidence based on observations, why objects that give off their own light can be seen in the dark ● Explain and demonstrate how different materials can allow different amounts of light to pass through ● Explain how shadows are made

	<ul style="list-style-type: none"> ● Observe that light shines in a straight line until it hits an object ● Explore how reflection can be used to redirect light ● Explore how technology is used to send and receive information using light
Instructional Plan	
<p style="text-align: center;">Suggested Activities</p> <ul style="list-style-type: none"> - Draw pictures of things that make light or sound - Use flashlights to reflect light off of mirrors - Use flashlights to shine on various mediums to test for transparency - Use flashlights to make shadow puppets 	<p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> - www.brainpopjr.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts)
Print Materials	
<ul style="list-style-type: none"> - HMH Dimensions textbook/workbook <p style="text-align: center;">Websites</p> <ul style="list-style-type: none"> - www.brainpopjr.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts) 	
Modifications	

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Use cooperative learning
- Demonstrations
- Partner with a strong English speaking partner
- Extended time
- Limit number of questions
- Speak slowly
- Chunk information

Gifted and Talented

- Create an enhanced set of introductory activities (e.g. advance organizers, concept maps, concept puzzles)
- Provide options, alternatives and choices to differentiate and broaden the curriculum
- Organize and offer flexible small group learning activities
- Differentiate Assignments
- Complete different homework assignments than peers

Basic Skills/Economically Disadvantaged/Students at Risk

- Pre-teach vocabulary using visuals and gestures
- Chunk texts
- Highlight key words
- Frequent breaks

Modifications/Accommodations**Special Education/504**

- Provide differentiated instruction as needed
- Follow all IEP modifications
- Review concepts and important vocabulary from previous lessons before teaching new information
- Check for student understanding often with formal, informal, verbal, and nonverbal measures
- Progress Monitoring
- Modified textbooks or audio-video materials

504

- Follow 504 plan
- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing

Unit 4 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
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<p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Use materials to design a device that solves a specific problem or a solution to a specific problem. (1-LS1-1)</p> <p>Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K– 2 builds on prior experiences and uses observations and texts to communicate new information. Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)</p> <p>-----Co nnections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (1-LS1-2)</p>	<p>LS1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)</p> <p>LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)</p> <p>LS1.D: Information Processing Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)</p>	<p>Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2)</p> <p>Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)</p> <p>----- Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Engineering, Technology, and Science on Society and the Natural World Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world. (1-LS1-1)</p>
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Correlation Key		
Holocaust	Amistad	Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

<p>Act as a responsible and contributing community members and employee.</p>	<p>Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>
<p>Consider the environmental, social and economic impacts of decisions.</p>	<p>Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.</p>
<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>

<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>

<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Career Readiness, Life Literacies, and Key Skills Core Ideas

This unit will incorporate the following core ideas

- There are ways to keep the things we value safely at home and other places.
- Different types of jobs require different knowledge and skills.
- Brainstorming can create new, innovative ideas
- Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
- Digital artifacts can be owned by individuals or organizations.
- Digital tools and media resources provide access to vast stores of information that can be searched.
- Digital tools can be used to display data in various ways.
- Digital tools have a purpose.
- Collaboration can simplify the work an individual has to do and sometimes produce a better product

Standard 8.1 Computer Science Core Ideas

This Unit will include incorporate the following core ideas.

- Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.
- Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
- Individuals collect, use, and display data about individuals and the world around them.
- Data can be used to make predictions about the wor

Standard 8.2 Design Thinking Core Ideas

This Unit will incorporate the following core ideas.

- Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
- Limitations (constraints) must be considered when engineering designs.
- Human needs and desires determine which new tools are developed.
- Technology has changed the way people live and work.
- Various tools can improve daily tasks and quality of life.
- The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.
- The availability of technology for essential tasks varies in different parts of the world.

Unit 4: Science/1st Grade

Duration: 30-40 Days (February-March)

Plant and Animal Structures

Unit Summary: Students will be exposed to plant and animal structures. This unit has four lessons attached to it and should be completed in about 30-40 Days. They will be able to describe, explain, relate, use evidence to describe, and use observations to design.

Standards:

1-LS1-1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help

them survive, grow, and meet their needs

NJ Student Learning Standards

Interdisciplinary Skills

SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

SL.1.1.B - Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.

SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

Students will understand that...

- Certain plant parts help plants live
- Certain body parts help animals stay safe
- Certain body parts help animals meet their needs
- Plants and animals respond to their environment in different ways

- What parts help plants live?
- What body parts help animals stay safe?
- What body parts help animals meet their needs?
- How do plants and animals respond to their environment?

Evidence of Student Learning

Performance Tasks: *Activities to provide evidence for student learning of content and cognitive skills.*

- Research a favorite animal

Other Assessments

Formative Assessments

- Teacher Observations
- Interactive Notebook

	<ul style="list-style-type: none"> ● Performance Assessments ● Exit Slips ● Response Cards ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Quizzes ● Summary ● Labs ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>Mimic/gills/lungs/adaptation/environment</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>

<p><i>Students will know....</i></p> <ul style="list-style-type: none"> ● What parts help plants live ● What body parts help animals stay safe ● What body parts help animals meet their needs ● How plants and animals respond to their environment 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Describe how parts of a plant help it to survive and grow ● Explain how parts of an animal help it to survive and grow ● Relate the shape and stability of structures to their functions ● Use evidence to describe how plants and animals process and respond to information ● Describe how human-made products are designed by applying knowledge of the natural world ● Use observations to design a solution to a human problem by mimicking how plants use their parts to survive
Instructional Plan	
<p style="text-align: center;">Suggested Activities</p> <ul style="list-style-type: none"> ● Observe plants to design something that would keep you cool ● Design a shoe to protect your feet from ice ● Observe animals to design a new tool for picking up food ● Compare animal paws/feet to sole of different bands of sneaks. Talk about traction. Does the cost of the sneaker affect how it performs? 	<p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> - www.brainpopjr.com - www.newsela.com (leveled texts) - https://www.teachengineering.org/ - www.readworks.org (leveled texts)
Print Materials	
<ul style="list-style-type: none"> - HMH Dimensions Textbook/Workbook 	
Websites	

- www.brainpopjr.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Use visuals
- Teacher check-ins
- Provide Word Wall

Gifted and Talented

- Organize and offer flexible small group learning activities
- Teach cognitive and methodological skills
- Use centers

<p>Basic Skills/Economically Disadvantaged/Students at Risk</p> <ul style="list-style-type: none"> ● Graphic organizers ● Highlight key words ● Sentence starters
<p>Special Education</p> <ul style="list-style-type: none"> ● Follow all IEP modifications ● Provide visual aids to support concepts being taught ● Use graphic organizers to help students organize important information from a lesson ● Reword Directions
<p>504</p> <ul style="list-style-type: none"> ● Follow 504 plan ● preferential seating ● extended time on tests and assignments ● reduced homework or classwork ● verbal, visual, or technology aids ● modified textbooks or audio-video materials ● behavior management support ● adjusted class schedules or grading ● verbal testing

Unit 5 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and</p>	<p>LS1.A: Structure and Function All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and</p>	<p>Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-LS1-2)</p>

<p>ideas in constructing evidence-based accounts of natural phenomena and designing solutions. Use materials to design a device that solves a specific problem or a solution to a specific problem. (1-LS1-1)</p> <p>Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in K– 2 builds on prior experiences and uses observations and texts to communicate new information. Read grade-appropriate texts and use media to obtain scientific information to determine patterns in the natural world. (1-LS1-2)</p> <p>-----Connections to Nature of Science Scientific Knowledge is Based on Empirical Evidence Scientists look for patterns and order when making observations about the world. (1-LS1-2)</p>	<p>seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (1-LS1-1)</p> <p>LS1.B: Growth and Development of Organisms Adult plants and animals can have young. In many kinds of animals, parents and the offspring themselves engage in behaviors that help the offspring to survive. (1-LS1-2)</p> <p>LS1.D: Information Processing Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)</p>	<p>Structure and Function The shape and stability of structures of natural and designed objects are related to their function(s). (1-LS1-1)</p> <p>-----</p> <p>Connections to Engineering, Technology, and Applications of Science</p> <p>Influence of Engineering, Technology, and Science on Society and the Natural World Every human-made product is designed by applying some knowledge of the natural world and is built using materials derived from the natural world. (1-LS1-1)</p>
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	Correlation Key	
Holocaust	Amistad	Financial Literacy

Career Readiness, Life Literacies, and Key Skills Practices

<p>Act as a responsible and contributing community members and employee.</p>	<p>Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.</p>
<p>Consider the environmental, social and economic impacts of decisions.</p>	<p>Students understand the interrelated nature of their actions and regularly make decisions that positively impact and/or mitigate negative impact on other people, organization, and the environment. They are aware of and utilize new technologies, understandings, procedures, materials, and regulations affecting the nature of their work as it relates to the impact on the social condition, the environment and the profitability of the organization.</p>
<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>

<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>
<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>
<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>

<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>
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Career Readiness, Life Literacies, and Key Skills Core Ideas

This unit will incorporate the following core ideas

- There are ways to keep the things we value safely at home and other places.
- Different types of jobs require different knowledge and skills.
- Brainstorming can create new, innovative ideas
- Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
- Digital artifacts can be owned by individuals or organizations.
- Digital tools and media resources provide access to vast stores of information that can be searched.
- Digital tools can be used to display data in various ways.
- Digital tools have a purpose.
- Collaboration can simplify the work an individual has to do and sometimes produce a better product

Standard 8.1 Computer Science Core Ideas

This Unit will include incorporate the following core ideas.

- Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.
- Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
- Individuals collect, use, and display data about individuals and the world around them.
- Data can be used to make predictions about the wor

Standard 8.2 Design Thinking Core Ideas

This Unit will incorporate the following core ideas.

- Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
- Limitations (constraints) must be considered when engineering designs.
- Human needs and desires determine which new tools are developed.
- Technology has changed the way people live and work.
- Various tools can improve daily tasks and quality of life.
- The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.
- The availability of technology for essential tasks varies in different parts of the world.

Unit 5: Science/1st Grade Living Things and Their Young	Duration: 30-40 Days (April-May)
Unit Summary: Students will be exposed to living things and their young. This unit has three lessons attached to it and should be completed in about 30-40 Days. They will be able to compare and contrast, observe patterns, and describe.	
Standards: 1-LS1-2 Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive 1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents	
NJ Student Learning Standards	
Interdisciplinary Skills	
SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).	

SL.1.1.B - Build on others' talk in conversations by responding to the comments of others through multiple exchanges.

SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.

SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.

Computer Science and Design Thinking

8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.

8.2.2.ITH.2: Explain the purpose of a product and its value.

Career Readiness, Life Literacies, and Key Skills

9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Essential Understandings

Essential Questions

Students will understand that...

- Plants look like their parents
- Animals look like their parents
- Animals take care of their young

- How do plants look like their parents?
- How do animals look like their parents?
- How do animals take care of their young?

Evidence of Student Learning

Performance Tasks: *Activities to provide evidence for student learning of content and cognitive skills.*

Other Assessments

- Compare animals that are wild vs animals that live with people and how they care for their young
- Compare and contrast animals the wild and pets needs. How does each get their needs met? (opportunity to investigate cost of having a pet)

Formative Assessments

- Teacher Observations
- Interactive Notebook
- Performance Assessments
- Exit Slips
- Response Cards
- Graphic Organizers

Summative Assessments

- Tests
- Quizzes
- Summary
- Labs

	<ul style="list-style-type: none"> ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Participation Rubric ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p>parent/offspring/trait/behavior</p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know....</i></p> <ul style="list-style-type: none"> ● That plants look like their parents ● That animals looks like their parents ● Animals take care of their young 	<p><i>Students will be able to ...</i></p> <ul style="list-style-type: none"> ● Compare young plants with parent plants ● Observe patterns to explain how plants of the same kind are alike and different ● Compare young animals with parent animals ● Observe patterns to explain how animals of the same kind are alike and different ● Describe how plants and animals respond to their environments to meet their needs

	<ul style="list-style-type: none"> Describe how behavior patterns of parents and offspring help offspring survive
Instructional Plan	
<p style="text-align: center;">Suggested Activities</p> <ul style="list-style-type: none"> Grow carrot tops to see how plants of the same kind are alike and different Observe brine shrimp to see if animals of the same kind look different from each other as they grow Research polar bears and lions to see how they learn from their parents 	<p style="text-align: center;">Resources</p> <ul style="list-style-type: none"> www.brainpopjr.com www.newsela.com (leveled texts) https://www.teachengineering.org/ www.readworks.org (leveled texts)
Print Materials	
<ul style="list-style-type: none"> HMH Dimensions Textbook/Workbook Rodent Rascals by Roxie Munro Animal Tracks by Arthur Dorros <p style="text-align: center;">Websites</p> <ul style="list-style-type: none"> www.brainpopjr.com www.newsela.com (leveled texts) https://www.teachengineering.org/ www.readworks.org (leveled texts) 	
Modifications	
<p>Special Education Students / 504 <i>(These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan)</i> reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.</p>	
<p>English Language learners: <i>use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.</i></p>	

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Plan activities using role play and drama
- Use visuals
- Limit Number of Questions
- Speak Slowly

Gifted and Talented

- Differentiate Assignments
- Differentiate Texts
- Complete Different Homework than peers

Basic Skills/Economically Disadvantaged/Students at Risk

- Graphic organizers
- Build background knowledge
- Increased parent communication

Special Education

- Follow all IEP modifications
- Provide manipulatives or the opportunity to draw solution strategies
- Pre-Teach concepts and key vocabulary
- Extended Time

504

- Follow 504 plan

- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing

Unit 6 Disciplinary Core Ideas Chart

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p>Planning and Carrying Out Investigations</p> <p>Planning and carrying out investigations to answer questions or test solutions to problems in K–2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions. Make observations (firsthand or from media) to collect data that can be used to make comparisons. (1-ESS1-2)</p> <p>Analyzing and Interpreting Data</p> <p>Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations. Use observations (firsthand or from media) to describe patterns in the natural world in</p>	<p>ESS1.A: The Universe and its Stars Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (1- ESS1-1)</p> <p>ESS1.B: Earth and the Solar System Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1-ESS1-2)</p>	<p>Patterns Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-ESS1-1),(1-ESS1-2)</p> <p>-----</p> <p>Connections to Nature of Science</p> <p>Scientific Knowledge Assumes an Order and Consistency in Natural Systems Science assumes natural events happen today as they happened in the past. (1-ESS1-1) Many events are repeated. (1-ESS1-1)</p>

order to answer scientific questions. (1-ESS1-1)		
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	Correlation Key	
Holocaust	Amistad	Financial Literacy

<u>Career Readiness, Life Literacies, and Key Skills Practices</u>	
Act as a responsible and contributing community members and employee.	Students understand the obligations and responsibilities of being a member of a community, and they demonstrate this understanding every day through their interactions with others. They are conscientious of the impacts of their decisions on others and the environment around them. They think about the near-term and long-term consequences of their actions and seek to act in ways that contribute to the betterment of their teams, families, community and workplace. They are reliable and consistent in going beyond the minimum expectation and in participating in activities that serve the greater good.
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<p>Demonstrate creativity and innovation.</p>	<p>Students regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand how to bring innovation to an organization.</p>
<p>Utilize critical thinking to make sense of problems and persevere in solving them.</p>	<p>Students readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.</p>
<p>Model integrity, ethical leadership and effective management.</p>	<p>Students consistently act in ways that align personal and community-held ideals and principles while employing strategies to positively influence others in the workplace. They have a clear understanding of integrity and act on this understanding in every decision. They use a variety of means to positively impact the directions and actions of a team or organization, and they apply insights into human behavior to change others' action, attitudes and/or beliefs. They recognize the near-term and long-term effects that management's actions and attitudes can have on productivity, morals and organizational culture.</p>

<p>Plan education and career paths aligned to personal goals.</p>	<p>Students take personal ownership of their own education and career goals, and they regularly act on a plan to attain these goals. They understand their own career interests, preferences, goals, and requirements. They have perspective regarding the pathways available to them and the time, effort, experience and other requirements to pursue each, including a path of entrepreneurship. They recognize the value of each step in the education and experiential process, and they recognize that nearly all career paths require ongoing education and experience. They seek counselors, mentors, and other experts to assist in the planning and execution of career and personal goals.</p>
<p>Use technology to enhance productivity, increase collaboration and communicate effectively.</p>	<p>Students find and maximize the productive value of existing and new technology to accomplish workplace tasks and solve workplace problems. They are flexible and adaptive in acquiring new technology. They are proficient with ubiquitous technology applications. They understand the inherent risks-personal and organizational-of technology applications, and they take actions to prevent or mitigate these risks.</p>
<p>Work productively in teams while using cultural/global competence.</p>	<p>Students positively contribute to every team, whether formal or informal. They apply an awareness of cultural differences to avoid barriers to productive and positive interaction. They find ways to increase the engagement and contribution of all team members. They plan and facilitate effective team meetings.</p>

Career Readiness, Life Literacies, and Key Skills Core Ideas

This unit will incorporate the following core ideas

- There are ways to keep the things we value safely at home and other places.

- Different types of jobs require different knowledge and skills.
- Brainstorming can create new, innovative ideas
- Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.
- Digital artifacts can be owned by individuals or organizations.
- Digital tools and media resources provide access to vast stores of information that can be searched.
- Digital tools can be used to display data in various ways.
- Digital tools have a purpose.
- Collaboration can simplify the work an individual has to do and sometimes produce a better product

Standard 8.1 Computer Science Core Ideas

This Unit will include incorporate the following core ideas.

- Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.
- Describing a problem is the first step toward finding a solution when computing systems do not work as expected.
- Individuals collect, use, and display data about individuals and the world around them.
- Data can be used to make predictions about the wor

Standard 8.2 Design Thinking Core Ideas

This Unit will incorporate the following core ideas.

- Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.
- Limitations (constraints) must be considered when engineering designs.
- Human needs and desires determine which new tools are developed.
- Technology has changed the way people live and work.
- Various tools can improve daily tasks and quality of life.
- The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.
- Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.
- Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment.

- The availability of technology for essential tasks varies in different parts of the world.

Unit 6: Science/1st Grade Objects and Patterns in the Sky	Duration: 15-20 Days (June)
Unit Summary: Students will be exposed to an introduction of earth’s resources. This unit has two lessons attached to it and should be completed in about 15-20 Days. They will be able to use evidence to explain things, describe things, design and communicate, and identify different natural resources.	
Standards: 1-ESS1-1 Use observations of the sun, moon, and stars to describe patterns that can be predicted 1-ESS1-2 Make observations at different times of year to relate the amount of daylight to the time of year	
NJ Student Learning Standards <p style="text-align: center;">Interdisciplinary Skills</p>	
<p>SL.1.1.A - Follow agreed-upon norms for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).</p> <p>SL.1.1.B - Build on others’ talk in conversations by responding to the comments of others through multiple exchanges.</p> <p>SL.1.1.C - Ask questions to clear up any confusion about the topics and texts under discussion.</p> <p>SL.1.3 - Ask and answer questions about what a speaker says in order to gather additional information or clarify something that is not understood.</p>	
<p style="text-align: center;">Computer Science and Design Thinking</p>	
<p>8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.</p>	

8.1.2.CS.1: Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.

8.2.2.ED.2: Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.

8.2.2.ED.3: Select and use appropriate tools and materials to build a product using the design process.

Career Readiness, Life Literacies, and Key Skills

9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.

9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.

9.4.2.TL.6: Illustrate and communicate ideas and stories using multiple digital tools (e.g., SL.2.5.).

Essential Understandings

Essential Questions

Students will understand that...

- Objects in the sky seem to change
- There are different patterns of daylight

- How do objects in the sky seem to change?
- What are patterns of daylight?

Evidence of Student Learning

Performance Tasks: *Activities to provide evidence for student learning of content and cognitive skills.*

- Explore the Moon's phases by creating a model

Other Assessments

Formative Assessments

- Teacher Observations
- Interactive Notebook
- Performance Assessments

	<ul style="list-style-type: none"> ● Exit Slips ● Response Cards ● Graphic Organizers <p>Summative Assessments</p> <ul style="list-style-type: none"> ● Tests ● Quizzes ● Summary ● Labs ● Hands-On Activities <p>Benchmark Assessment</p> <ul style="list-style-type: none"> ● Beginning of the Year Benchmark ● Mid-Year Benchmark ● End of the Year Benchmark <p>Alternative Assessments</p> <ul style="list-style-type: none"> ● Teacher Observations ● Group Work/Class Work
<p>Vocabulary</p> <p><i>star/sun/moon/phases/season</i></p>	
<p>Knowledge and Skills</p>	
<p>Content</p>	<p>Skills</p>
<p><i>Students will know....</i></p>	<p><i>Students will be able to ...</i></p>

- How objects in the sky seem to change
- Different patterns of daylight

- Identify and describe objects in the sky
- Use evidence to describe predictable patterns of the sun, moon, and stars
- Observe and model patterns of the moon's phases
- Use observations to describe characteristics of each season
- Predict patterns of change that take place from season to season
- Use observations to compare the amount of daylight from season to season
- Explore how seasons affect people and animals

Instructional Plan

Suggested Activities

- Make a solar eclipse model
- Draw pictures of the sun, moon and stars.
- Make predictions about how the earth and moon move in the sky.
- Observe and measure the sun's position in the sky and how shadows change throughout the day.
- Make drawings of the four seasons and where the moon and sun will be positioned in the sky.
- Teach students about the phases of the moon, and make models using Oreo cookies.
- Observe patterns of a sunset
- Discuss daytime and nighttime jobs

Resources

- www.brainpopjr.com
- www.education.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)

Print Materials

- HMH Dimensions Textbook/workbook
- [*The Patchwork Path: A Quilt Map to Freedom* by Bette Stroud](#)

Websites

- www.brainpopjr.com
- www.education.com
- www.newsela.com (leveled texts)
- <https://www.teachengineering.org/>
- www.readworks.org (leveled texts)

Modifications

Special Education Students / 504 (*These are just suggested ideas to modify instruction. All modifications and accommodations should be specific to each student's IEP or 504 plan*) reduce/revise assignments & assignments as per IEP; provide individual and small group assistance; notes, and study guides; provide background knowledge.

English Language learners: *use consistent, simplified language; provide bilingual when appropriate; provide cooperative learning opportunities, use modeling, visual aids, and manipulatives.*

Students at Risk of Failure: *Provide less distracting seating if possible, frequent check-in by teacher, study guides, notes, etc.*

Gifted Students: *provide additional enrichment activity involving demonstrating knowledge, deeper research to answer a higher level questions, or complimentary assignment.*

Suggested Options for Differentiation

English Language Learners

- Use visuals
- Teacher check-ins
- Limit number of questions
- Provide Word Wall

Gifted and Talented

- Organize and offer flexible small group learning activities

- Create alternate projects or assignments that challenge thinking
- Differentiate test questions

Basic Skills/Economically Disadvantaged/Students at Risk

- Graphic organizers
- Highlight key words
- Frequent breaks
- Sentence starters

Special Education

- Follow all IEP modifications
- Provide visual aids to support concepts being taught
- Allow students to verbalize before beginning an assignment
- Extended time
- Use alternative assessments
- Pre Teach key vocabulary

504

- Follow 504 plan
- preferential seating
- extended time on tests and assignments
- reduced homework or classwork
- verbal, visual, or technology aids
- modified textbooks or audio-video materials
- behavior management support
- adjusted class schedules or grading
- verbal testing