



Totowa Public Schools

Shop

Grades 3-5

Aligned to NJSL Standards

Revised and BOE Adopted: 8/31/2022

Revised 12/14/2022

Units of Study & Pacing Guide

<u>Unit of Study</u>	<u>Timeline</u>	<u>Notes</u>
Unit 1: Problem Solving & Design	6 Weeks	
Unit 2: Tool Safety	6 Weeks	
Unit 3: Woodworking	6 Weeks	

Title	Problem Solving and Design
Unit Duration	6 Weeks
Unit Summary & Rationale	Students will learn the steps to plan, design, and write up their solutions to proposed real world problems. The first step in any project is being able to sketch a design. It does not matter if it is successful, as failure leads to a greater understanding of our problem.
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • What scale best fits this design? • How would you redesign this project to make it more functional? • If given the opportunity to do this challenge again, what would you do differently? • What was the most challenging part of the assignment?
Enduring Understandings	<ul style="list-style-type: none"> • The first step in any creation project begins with the design phase. Here, students learn that failure leads to a greater understanding of the process.
Learning Outcomes	<ul style="list-style-type: none"> • Use a ruler and sketchbook to design. • Students will learn the steps to plan, design, and write up their solutions to proposed real world problems. • Students will be introduced to the idea of scale and perspective drawings to create their first design portfolio entries. • Career Exploration - Examine careers in engineering.
Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Interactive Notebooks, Sketchbooks, Safety test
Summative	Tests, Pre-Assessments, Quizzes, Written Responses, Projects
Alternative and Benchmark	Alternative - Read to the student and chart oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, Project based-learning, Sketchbook

	<p>Benchmark – LinkIt Benchmark Assessment, Teacher generated summative assessments</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	<p>Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, hand tools, wood, machines, safety glasses, pencils, folders, rulers, other appropriate tools for the shop.</p> <p>Approved Class Resource List</p>
Content & Interdisciplinary Standards	
Computer Science & Design Thinking	
NJSLS	Activity
<p>Engineering design is a systematic and creative process of communicating and collaborating to meet a design challenge. Often, several design solutions exist, each better in some way than the others.</p>	<ul style="list-style-type: none"> ● 8.2.5.ED.1: Explain the functions of a system and its subsystems. ● 8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. ● 8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
<p>Engineering design requirements include desired features and limitations that need to be considered</p>	<ul style="list-style-type: none"> ● 8.2.5.ED.4: Explain factors that influence the development and function of products and systems (e.g., resources, criteria, desired features, constraints). ● 8.2.5.ED.5: Describe how specifications and limitations impact the engineering design process. ● 8.2.5.ED.6: Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the design process.
<p>The technology developed for the human designed world can have unintended consequences for the environment. Technology must be continually developed</p>	<ul style="list-style-type: none"> ● 8.2.5.ETW.1: Describe how resources such as material, energy, information, time, tools, people, and capital are used in products or systems. ● 8.2.5.ETW.2: Describe ways that various technologies are used to reduce improper use of resources.

<p>and made more efficient to reduce the need for non-renewable resources.</p>	<ul style="list-style-type: none"> • 8.2.5.ETW.3: Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. • 8.2.5.ETW.4: Explain the impact that resources, such as energy and materials used to develop technology, have on the environment. • 8.2.5.ETW.5: Identify the impact of a specific technology on the environment and determine what can be done to increase positive effects and to reduce any negative effects, such as climate change.

Computer Science and Design Thinking Practices

- Fostering an Inclusive Computing and Design Culture
- Collaborating Around Computing and Design
- Recognizing and Defining Computational Problems
- Developing and Using Abstractions
- Creating Computational Artifacts
- Testing and Refining Computational Artifacts
- Communicating About Computing and Design

NJ: 2016 SLS: English Language Arts

- RI.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RI.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- RI.3.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- W.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.3.2a. Introduce a topic and group related information together; include text features (e.g., illustrations, diagrams, captions) when useful to support comprehension.
- SL.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.

- L.3.6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).
- RI.4.1 Refer to details and examples in a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
- RI.4.3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
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- SL.4.4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- W.4.10. Write routinely over extended time frames (time for research, reflection, metacognition/self-correction and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline- specific tasks, purposes, and audiences.
- L.4.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).

- RI.5.1 Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
- RI.5.3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- RI.5.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
- W.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.5.2a. Introduce a topic clearly to provide a focus and group related information logically; include text features such as headings, illustrations, and multimedia when useful to aiding comprehension.
- W.5.4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- SL.5.6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.

- L.5.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 8th Grade)

Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.

- Act as a responsible and contributing community members and employee.
- Attend to financial well-being.
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence

- 9.4.5.DC.1: Explain the need for and use of copyrights.
- 9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a).
- 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.
- 9.2.5.CAP.2: Identify how you might like to earn an income.
- 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations.
- 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements.
- 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6).
- 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).
- 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).
- 9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).

Interdisciplinary Connections

<p style="text-align: center;">Math</p>	<ul style="list-style-type: none"> • 3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). • 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters. • 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. • 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. • 5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
<p style="text-align: center;">Visual & Performing Art</p>	<ul style="list-style-type: none"> • 1.5.5.Cr1a: Brainstorm and curate ideas to innovatively problem solve during artmaking and design projects. • 1.5.5.Cr1b: Individually and collaboratively set goals, investigate, choose, and demonstrate diverse approaches to art-making that is meaningful to the makers. • 1.5.5.Cr2a: Experiment and develop skills in multiple art-making techniques and approaches, through invention and practice. • 1.5.5.Cr2b: Demonstrate craftsmanship through the safe and respectful use of materials, tools and equipment. • 1.5.5.Cr2c: Individually or collaboratively represent environments or objects of personal significance that includes a process of peer discussion, revision and refinement. • 1.5.5.Re7a: Speculate about artistic processes. Interpret and compare works of art and other responses.

Connections and Skills	<ul style="list-style-type: none"> • Critical thinking • Collaboration and Teamwork • Problem Solving • Digital Citizenship • Career Awareness and Planning
SEL	<ul style="list-style-type: none"> • Responsible Decision-Making • Self-Awareness New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx

Title	Tool Safety
Unit Duration	6 Weeks
Unit Summary & Rationale	Prior to working with any tools, students must learn and demonstrate being able to work safely in the woodshop. This unit is dedicated to teaching students how to be safe in the shop.
Unit Goals	
Essential Questions	<ul style="list-style-type: none"> • When should you use a tool? • If an injury occurs, what do you do? • Where should you work on your project? • What do you do if you are done early?
Enduring Understandings	<ul style="list-style-type: none"> • Always respect others, tools, and the woodshop. • Safety is everyone's responsibility. We must always remember to work in a safe environment.
Learning Outcomes	<ul style="list-style-type: none"> • Identify basic classroom safety • List Safety rules for tools and machinery • Demonstrate proper safety when using machines.
Assessment Evidence	

Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Interactive Notebooks, Sketchbooks, Safety test
Summative	Tests, Pre-Assessments, Quizzes, Written Responses, Projects
Alternative and Benchmark	<p>Alternative - Read to the student and chart oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, Project based-learning, Sketchbook</p> <p>Benchmark – LinkIt Benchmark Assessment, Teacher generated summative assessments</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	<p>Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, hand tools, wood, machines, safety glasses, pencils, folders, rulers, other appropriate tools for the shop.</p> <p>Approved Class Resource List</p>
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- Attend to financial well-being.
- Consider the environmental, social and economic impacts of decisions
- Demonstrate creativity and innovation.
- Utilize critical thinking to make sense of problems and persevere in solving them.
- Model integrity, ethical leadership and effective management.
- Plan education and career paths aligned to personal goals.
- Use technology to enhance productivity increase collaboration and communicate effectively.
- Work productively in teams while using cultural/global competence

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- 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7).

- 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6).
- 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2).
- 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1).
- 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems.
- 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3).

Interdisciplinary Connections

Visual and Performing Art

- 1.5.5.Cr1a: Brainstorm and curate ideas to innovatively problem solve during artmaking and design projects.
- 1.5.5.Cr1b: Individually and collaboratively set goals, investigate, choose, and demonstrate diverse approaches to art-making that is meaningful to the makers.
- 1.5.5.Cr2a: Experiment and develop skills in multiple art-making techniques and approaches, through invention and practice.
- 1.5.5.Cr2b: Demonstrate craftsmanship through the safe and respectful use of materials, tools and equipment.
- 1.5.5.Cr2c: Individually or collaboratively represent environments or objects of personal significance that includes a process of peer discussion, revision and refinement.
- 1.5.5.Re7a: Speculate about artistic processes. Interpret and compare works of art and other responses.

Mathematics

- 3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units).
- 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
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	<ul style="list-style-type: none"> • 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. • 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. • • 5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
Connections and Skills	<ul style="list-style-type: none"> • Critical thinking • Problem Solving • Collaboration and Teamwork • Creativity and Innovation • Digital Citizenship
SEL	<ul style="list-style-type: none"> • Responsible Decision-Making • Self-Awareness • New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx

Title	Woodworking
Unit Duration	6 Weeks
Unit Summary & Rationale	As students engage in the design process, and learn how to operate safely in a woodshop, this is their opportunity to put into practice what they have learned. Each grade level will complete a different project.
Unit Goals	
Essential Questions	What was the most challenging part of this project? How could you adapt this design to make it more functional?

Enduring Understandings	The creation of each project is unique. From the design process to the finished product, changes will be made from the original design. <u>Each project proposes a problem for students to solve. Through the design process, each student attempts to solve the problem and then begins to execute the design.</u>
Learning Outcomes	<ul style="list-style-type: none"> • Students will develop their skills on using had tools, including pull saws, hammers, block planes, brace drills, and eggbeater drills. • Students will use hand saws safely and properly to cut lumber for their projects. • Students will Identify Trademarks and why they are/were used. • Students will identify Stamps (Metal letters) and their use. • Use of a ruler, combination square, tape measure, or other measuring device to measure wood accurately Choosing the proper clamp/vise to hold wood when working with it • Aligning boards and prepping nails to assemble pieces together. • Practice the following techniques – safety, Hand Saws - Rip, crosscut, back, coping, and hack.

Projects

Grades 3 & 4 – Cutting Board

- Executing the design process.
- Discuss material trade off.
- Examine the following: Sustainability, repeatably, and life of the product.
- Build a simple machine.
- Reinforce measuring and cutting
- Utilize hand saw techniques.

Grade 5 – Robot

- Executing the design process.
- Discuss material trade off.
- Examine the following: Sustainability, repeatably, and life of the product.
- Build a simple machine.
- Reinforce measuring and cutting

- Utilize hand saw techniques.

Assessment Evidence	
Formative	Collaborative Activities, Homework, Classwork, Discussion, Independent Class Assignment, Informal Observations of Students, Interactive Notebooks, Sketchbooks, Safety test
Summative	Tests, Pre-Assessments, Quizzes, Written Responses, Projects
Alternative and Benchmark	<p>Alternative - Read to the student and chart oral responses, graphic organizers, observations, portfolios of student work, orally administered assessments, Project based-learning, Sketchbook</p> <p>Benchmark – LinkIt Benchmark Assessment, Teacher generated summative assessments</p> <p>Formative, Summative, Alternative and Benchmark Assessments</p>
Resources to Promote Learning	
Resources & Equipment Needed	<p>Smartboard, Computers, iPads, websites and digital interactives/models, Multi-media presentations, video streaming, Brain Pop, Microsoft 365, hand tools, wood, machines, safety glasses, pencils, folders, rulers, other appropriate tools for the shop.</p> <p>Approved Class Resource List</p>
Content & Interdisciplinary Standards	
Computer Science & Design Thinking	
NJSLs	Activity
Engineering design is a systematic, creative, and iterative process used to address local and global problems. The process includes generating ideas, choosing the best solution, and making, testing, and redesigning models or prototypes.	<ul style="list-style-type: none"> • 8.2.8.ED.1: Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer. • 8.2.8.ED.2: Identify the steps in the design process that could be used to solve a problem. • 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).

	<ul style="list-style-type: none"> 8.2.8.ED.4: Investigate a malfunctioning system, identify its impact, and explain the step-by-step process used to troubleshoot, evaluate, and test options to repair the product in a collaborative team.
Engineering design requirements and specifications involve making trade-offs between competing requirements and desired design features.	<ul style="list-style-type: none"> 8.2.8.ED.5: Explain the need for optimization in a design process. 8.2.8.ED.6: Analyze how trade-offs can impact the design of a product. 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).
Economic, political, social and cultural aspects of society drive development of new technological products, processes, and systems.	<ul style="list-style-type: none"> 8.2.8.ITH.1: Explain how the development and use of technology influences economic, political, social, and cultural issues.
Technology interacts with society, sometimes bringing about changes in a society's economy, politics, and culture, and often leading to the creation of new needs and wants. New needs and wants may create strains on local economies and workforces. Improvements in technology are intended to make the completion of tasks easier, safer, and/or more efficient.	<ul style="list-style-type: none"> 8.2.8.ITH.2: Compare how technologies have influenced society over time. 8.2.8.ITH.3: Evaluate the impact of sustainability on the development of a designed product or system. 8.2.8.ITH.4: Identify technologies that have been designed to reduce the negative consequences of other technologies and explain the change in impact. 8.2.8.ITH.5: Compare the impacts of a given technology on different societies, noting factors that may make a technology appropriate and sustainable in one society but not in another.
Technology advances through the processes of innovation and invention which relies upon the imaginative and inventive nature of people. Sometimes a technology developed for one purpose is adapted to serve other purposes. Engineers use a systematic process of creating or modifying technologies that is fueled and constrained by physical laws, cultural norms, and economic resources. Scientists	<ul style="list-style-type: none"> 8.2.8.NT.1: Examine a malfunctioning tool, product, or system and propose solutions to the problem. 8.2.8.NT.2: Analyze an existing technological product that has been repurposed for a different function. 8.2.8.NT.3: Examine a system, consider how each part relates to other parts, and redesign it for another purpose.

use systematic investigation to understand the natural world.

Computer Science and Design Thinking Practices

- Fostering an Inclusive Computing and Design Culture
- Collaborating Around Computing and Design
- Recognizing and Defining Computational Problems
- Developing and Using Abstractions
- Creating Computational Artifacts
- Testing and Refining Computational Artifacts
- Communicating About Computing and Design

NJ: 2016 SLS: English Language Arts

- RI.3.1 Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RI.3.3. Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.
- RI.3.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
- W.3.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.3.2a. Introduce a topic and group related information together; include text features (e.g., illustrations, diagrams, captions) when useful to support comprehension.
- SL.3.6. Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.
- L.3.6. Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships (e.g., After dinner that night we went looking for them).
- RI.4.1 Refer to details and examples in a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.

- RI.4.3. Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
- W.4.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.4.2a. Introduce a topic clearly and group related information in paragraphs and sections; include formatting (e.g., headings), illustrations, and multimedia when useful to aiding comprehension.
- SL.4.4. Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.
- W.4.10. Write routinely over extended time frames (time for research, reflection, metacognition/self-correction and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline- specific tasks, purposes, and audiences.
- L.4.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal precise actions, emotions, or states of being (e.g., quizzed, whined, stammered) and that are basic to a particular topic (e.g., wildlife, conservation, and endangered when discussing animal preservation).
- RI.5.1 Quote accurately from a text and make relevant connections when explaining what the text says explicitly and when drawing inferences from the text.
- RI.5.3. Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
- RI.5.4. Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
- W.5.2. Write informative/explanatory texts to examine a topic and convey ideas and information clearly. W.5.2a. Introduce a topic clearly to provide a focus and group related information logically; include text features such as headings, illustrations, and multimedia when useful to aiding comprehension.
- W.5.4. Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)
- SL.5.6. Adapt speech to a variety of contexts and tasks, using formal English when appropriate to task and situation.
- L.5.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships (e.g., however, although, nevertheless, similarly, moreover, in addition).

2020 SLS: Career Readiness, Life Literacies, and Key Skills

NJSLS Performance Expectations (By the end of 8th Grade)

<p>Career Readiness, Life Literacies, and Key Skills Practices describe the habits of the mind that all educators in all content areas should seek to develop in their students. They are practices that have been linked to increase college, career, and life success. These practices should be taught and reinforced in all content areas with increasingly higher levels of complexity and expectation as a student advances through a program of study.</p>	<ul style="list-style-type: none"> • Act as a responsible and contributing community members and employee. • Attend to financial well-being. • Consider the environmental, social and economic impacts of decisions • Demonstrate creativity and innovation. • Utilize critical thinking to make sense of problems and persevere in solving them. • Model integrity, ethical leadership and effective management. • Plan education and career paths aligned to personal goals. • Use technology to enhance productivity increase collaboration and communicate effectively. • Work productively in teams while using cultural/global competence
<ul style="list-style-type: none"> • 9.4.5.DC.1: Explain the need for and use of copyrights. • 9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a). • 9.4.5.CI.1: Use appropriate communication technologies to collaborate with individuals with diverse perspectives about a local and/or global climate change issue and deliberate about possible solutions (e.g., W.4.6, 3.MD.B.3,7.1.NM.IPERS.6). • 9.4.5.CI.2: Investigate a persistent local or global issue, such as climate change, and collaborate with individuals with diverse perspectives to improve upon current actions designed to address the issue (e.g., 6.3.5.CivicsPD.3, W.5.7). • 9.4.5.CI.3: Participate in a brainstorming session with individuals with diverse perspectives to expand one’s thinking about a topic of curiosity (e.g., 8.2.5.ED.2, 1.5.5.CR1a).9.4.5.CI.4: Research the development process of a product and identify the role of failure as a part of the creative process (e.g., W.4.7, 8.2.5.ED.6). • 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process (e.g., 2.1.5.EH.4, 4-ESS3-1, 6.3.5.CivicsPD.2). • 9.4.5.CT.2: Identify a problem and list the types of individuals and resources (e.g., school, community agencies, governmental, online) that can aid in solving the problem (e.g., 2.1.5.CHSS.1, 4-ESS3-1). • 9.4.5.CT.3: Describe how digital tools and technology may be used to solve problems. • 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global (e.g., 6.1.5.CivicsCM.3). 	
Interdisciplinary Connections	
Math	<ul style="list-style-type: none"> • 3.MD.C.6. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard units). • 3.MD.B.4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line

	<p>plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.</p> <ul style="list-style-type: none"> • 4.MD.A.1. Know relative sizes of measurement units within one system of units including km, m, cm, mm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. • 4.MD.B.4. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. • 5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
<p>Visual and Performing Art</p>	<ul style="list-style-type: none"> • 1.5.5.Cr1a: Brainstorm and curate ideas to innovatively problem solve during artmaking and design projects. • 1.5.5.Cr1b: Individually and collaboratively set goals, investigate, choose, and demonstrate diverse approaches to art-making that is meaningful to the makers. • 1.5.5.Cr2a: Experiment and develop skills in multiple art-making techniques and approaches, through invention and practice. • 1.5.5.Cr2b: Demonstrate craftsmanship through the safe and respectful use of materials, tools and equipment. • 1.5.5.Cr2c: Individually or collaboratively represent environments or objects of personal significance that includes a process of peer discussion, revision and refinement. • 1.5.5.Re7a: Speculate about artistic processes. Interpret and compare works of art and other responses.
<p>Connections and Skills</p>	<ul style="list-style-type: none"> • Critical thinking • Problem Solving • Collaboration and Teamwork • Creativity and Innovation • Digital Citizenship

SEL	<ul style="list-style-type: none"> • Responsible Decision-Making • Self-Awareness • New Jersey Social and Emotional Learning Competencies and Sub-Competencies.docx
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Accommodations & Modifications		
Special Education Students, 504 students, English Language Learners, Students at-Risk Based on Students' Individual Needs		
Time/General	Processing	Comprehension
<ul style="list-style-type: none"> • Allow extra time • Repeat and clarify directions • Provide breaks in between tasks • Have student verbalize directions • Provide timelines/due dates for reports and projects 	<ul style="list-style-type: none"> • Provide extra response time • Have student verbalize steps • Repeat directions • Provide small group instruction • Include partner work 	<ul style="list-style-type: none"> • Provide reading material on student's level • Have student underline important points • Assist student on how to use context clues to identify words/phrases • Ensure short manageable tasks
Tests/Quizzes/Grading	Behavior/Attention	Organization
<ul style="list-style-type: none"> • Provide extended time • Provide study guides • Limit number of responses 	<ul style="list-style-type: none"> • Establish classroom rules • Write a contract with the student specifying expected behaviors • Provide preferential seating • Re-focus student as needed • Reinforce student for staying on task 	<ul style="list-style-type: none"> • Monitor the student and provide reinforcement of directions • Verify the accurateness of homework assignments • Display a written agenda
ELL, Enrichment, Gifted & Talented Strategies		

Accommodations Based on Students' Individual Needs

ELL Strategies

- Provide explicit, systematic instruction in vocabulary.
- Ensure that ELLs have ample opportunities to talk with both adults and peers and provide ongoing feedback and encouragement.
- Expose ELLs to rich language input.
- Scaffolding for ELLs language learning.
- Encourage continued L1 language development.
- Alphabet knowledge
- Phonological awareness
- Print awareness
- Design instruction that focuses on all of the foundational literacy skills.
- Recognize that many literacy skills can transfer across languages.
- English literacy development by helping ELLs make the connection between what they know in their first language and what they need to know in English.
- Graphic organizers
- Modified texts
- Modified assessments
- Written/audio instruction
- Shorter paragraph/essay length
- Homogeneously grouped by level

Accommodations Based on Students' Individual Needs:

Enrichment Strategies

- Evaluate vocabulary
- Elevate Text Complexity

- Incorporate inquiry based assignments and projects
- Extend curriculum
- Balance individual, small group and whole group instruction
- Provide tiered/multi-level activities
- Include purposeful learning centers
- Provide open-ended activities and projects
- Offer opportunities for heterogeneous grouping to work with age and social peers as well as homogeneous grouping to provide time to work with individual peers
- Provide pupils with experiences outside the 'regular' curriculum
- Alter the pace the student uses to cover regular curriculum in order to explore topics of interest in greater depth/breadth within their own grade level
- Require a higher quality of work than the norm for the given age group
- Promote higher level of thinking and making connections.
- Focus on process learning skills such as brainstorming, decision making and social skills
- Use supplementary materials in addition to the normal range of resources.
- Encourage peer to peer mentoring
- Integrate cross-curricular lessons
- Incorporate real-world problem solving activities
- Facilitate student-led questioning and discussions

Gifted & Talented Strategies

- More elaborate, complex, and in-depth study of major ideas, problems, and themes that integrate knowledge within and across systems of thought.
- Development and application of productive thinking skills to enable students to reconceptualize existing knowledge and/or generate new knowledge.
- Explore constantly changing knowledge and information and develop the attitude that knowledge is worth pursuing in an open world.
- Encourage exposure to, selection, and use of appropriate and specialized resources.
- Promote self-initiated and self-directed learning and growth.

- Provide for the development of self-understanding and the understanding of one's relationship to persons, societal institutions, nature, and culture.
- Flexible pacing
- Use of more advanced or complex concepts, abstractions, and materials
- Encourage students to move through content areas at their own pace. If they master a particular unit, they need to be provided with more advanced learning activities, not more of the same activity.
- Questions that require a higher level of response and/or open-ended questions that stimulate inquiry, active exploration, and discovery.
- Encourage students to think about subjects in more abstract and complex ways
- Activity selection based on student interests, that encourage self-directed learning
- Group interaction and simulations
- Guided self-management
- Encourage students to demonstrate what they have learned in a wide variety of forms that reflect both knowledge and the ability to manipulate ideas.
- Engage students in active problem-finding and problem-solving activities and research.
- Provide students opportunities for making connections within and across systems of knowledge by focusing on issues, themes, and ideas.