



Library Media

Grade 2

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Reviewed By: Jessica Shoja

Board of Education Approved (pending), Effective Date: September 2020

Scope and Sequence

| Month | Unit - Topic |
|-------------------------|--------------|
| September - Trimester 1 | Unit 1 |
| October - Trimester 1 | |
| November - Trimester 1 | |
| December - Trimester 2 | Unit 2 |
| January - Trimester 2 | |
| February - Trimester 2 | |
| March - Trimester 2/3 | Unit 3 |
| April - Trimester 3 | |
| May - Trimester 3 | |
| June - Trimester 3 | |

Library Media Standards - Progression of Learning - Disciplinary Concepts and Core Ideas

Unit 1- Life Literacy and Key Skills

Summary and Rationale

This unit will expand on the responsible use of the library media center and its resources, both print and digital - AND partner with the public library. As students gain more access to print and online materials, library rules, cyber rules, and safety are necessary skills for book borrowing and computer use - this will be a heavy focus of this unit.

Recommended Pacing

Trimester 1 (September - November)

Standards

NJSLS 9.4 Life Literacies and Key Skills

Creativity and Innovation

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| 9.4.2.CI.1 | Demonstrate openness to new ideas and perspectives. |
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| 9.4.2.CI.2 | Demonstrate originality and inventiveness in work. |
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Critical Thinking and Problem-Solving

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| 9.4.2.CT.1 | Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem. |
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Digital Citizenship

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| 9.4.2.DC.1 | Explain differences between ownership and sharing of information. |
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| 9.4.2.DC.2 | Explain the importance of respecting the digital content of others. |
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| 9.4.2.DC.3 | Explain how to be safe online and follow safe practices when using the internet. |
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| 9.4.2.DC.4 | Compare information that should be kept private to information that might be made public |
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| 9.4.2.DC.5 | Explain what a digital footprint is and how it is created. |
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| 9.4.2.DC.6 | Identify respectful and responsible ways to communicate in digital environments. |
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| 9.4.2.DC.7 | Describe actions peers can take to positively impact climate change. |
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Information and Media Literacy

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| 9.4.2.IML.1 | Identify a simple search term to find information in a search engine or digital resource. |
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Instructional Focus

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| <p>Enduring Understandings: <i>Students will understand that...</i></p> | <p>Essential Questions:</p> |
| <p>EU 1.A: The Library Media Center is a place to access information and build new knowledge.</p> <p>EU 1.B: Materials in a library media center have different purposes to meet research and interest needs.</p> <p>EU 1.C: Computers need to be used responsibly and ethically.</p> | <p>How can I become an effective user of the library media center?</p> <p>How can I practice safe and responsible behaviors online?</p> |
| <p>Evidence of Learning (Assessments)</p> | |
| <p>PERFORMANCE ASSESSMENT(S) G.R.A.S.P.S <i>Students will show that they really understand by evidence of...</i></p> <p>Research and Online Discussion Goal: Use the library media resources (both books and digital) to research an animal of interest to you! Participate in an online discussion to discuss the animals within a peer group. Role: Research reporter Audience: Your classmates Situation: -Students will be divided into groups such as: Amphibians, Birds, Bugs, Fish & Sea Creatures, Land Mammals, Prehistoric Animals, Reptiles, or Water Mammals -Within their Group - each student is to each choose an animal to research (ex. Bird Group - Chicken) - conduct own research on the animal and then participate in an online discussion to share the information with your group. Product: Students will complete a graphic organizer to help them gather their research and sources on the animal of their choice - then they will virtually discuss with their classmates (discussions can be done on Google Meet/Jamboard, Schoology discussion board, or other district-approved site) - <i>student choice in topic/animal (within Group Category)</i> Standards/Criteria: Graphic organizer, cited sources, participation in group online discussion</p> | |
| <p>Objectives (SLO)</p> | |
| <p>ESSENTIAL KNOWLEDGE (EK) <i>Students will know...</i></p> <p>EK 1.A</p> <ul style="list-style-type: none"> ● Library media center - routines and procedures ● Community, Nutley Public Library - library card, library visit, library resources ● Computers - keyboarding <p>EK 1.B</p> <ul style="list-style-type: none"> ● Sections of the library | <p>LEARNING OBJECTIVES (LO) <i>Students will be skilled at...</i></p> <p>LO 1.A.1: Follow library media procedures, on the command of the library media specialist or on their own. LO 1.A.2: Locate and check out books with the assistance of the library media specialist (or other staff, aide). LO 1.A.3: Visit the public library and check out a book, with classroom teacher (field trip), library media specialist, or parent/guardian. LO 1.A.3: Care for books and other library materials. LO 1.A.4: Log on to computer, utilize district-approved systems.</p> |

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| <ul style="list-style-type: none"> ● The Nutley Public Library - Library Cards ● Introduction to Dewey Decimal System - Fiction vs. Non-Fiction ● Digital resources: Pebble Go, World Book Online, BrainPop Jr., etc. ● Climate Change <p>EK 1.C</p> <ul style="list-style-type: none"> ● Clever, Schoology, Google Apps <ul style="list-style-type: none"> ○ Login, Navigation, Apps ○ Google Docs and Slides ● Digital Citizenship ● Digital footprint or “trail” - permanent, private information (i.e., pictures, passwords, full name, address, etc.) ● Online community <ul style="list-style-type: none"> ○ Discussion Boards (through Schoology or other district-approved site) ○ S-T-O-P strategy - Step away, Tell a trusted adult, OK sites first, Pause and think online ○ Online meanness vs. face-to-face ● Sources, credit ● Research, report, presentation | <p>LO 1.A.5: Input information using keyboarding skills.</p> <p>LO 1.B.1: Locate and select appropriate reading materials for leisure and study/research (teacher should demonstrate with researching Climate Change).</p> <p>LO 1.B.2: Understand that nonfiction books use a Dewey Decimal Number and fiction books use ABC order to organize books in a LMC.</p> <p>LO 1.B.3: Compare the difference between a topic of fiction vs. nonfiction (ex. Three Little Pigs vs Real Pigs; What is Climate Change vs The Lorax).</p> <p>LO 1.B.4: As a class, learn about Climate Change and describe positive actions that can be taken to have an impact. (Discussion should be in-person and digital format).</p> <p>LO 1.C.1: Access and navigate Schoology Learning Management System and Google Apps.</p> <p>LO 1.C.2: Practice good digital citizenship - being safe and responsible online.</p> <p>LO 1.C.3: Recognize the kind of information that is private vs information that is OK to be shared online.</p> <p>LO 1.C.4: Participate in online community discussion (through Schoology) in a manner that demonstrates positive/appropriate online communication.</p> <p>LO 1.C.5: Conduct a short research project using multiple resources, print and digital, to build knowledge about a topic.</p> <p>LO 1.C.6: Provide credit to source(s).</p> |
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Suggested Lesson Resources/Technology Tools

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| <p>1.A. Library Media Orientation - Quick Review!</p> <ul style="list-style-type: none"> ● Library Media Center - School - Review of routines, procedures <ul style="list-style-type: none"> ○ Line up, seating, passes, hand raising... ○ Where to find books, check out procedures... ● Nutley Public Library - virtual or in-person field trip? ● Log into Schoology and other district programs using Nutley Schools credentials ● Keyboarding <ul style="list-style-type: none"> ○ Using Nutley Schools credentials to log into TypeTastic ○ Number Keys, shift and symbol keys | <p>SUGGESTED TIMEFRAME: 2 class periods</p> |
| <p>1.B. Exploring Library Resources</p> <ul style="list-style-type: none"> ● How to tell and where to find a book meets interest level, reading level. ● Shelf markers and shelf marker practice ● Nonfiction books use a Dewey Decimal Number; fiction books use ABC order to organize books in a LMC. <ul style="list-style-type: none"> ○ Pebble Go Lesson - Comparing Fiction vs. NonFiction COMPARING FICTION AND NONFICTION- PIGS VENN DIAGRAM ○ Three Little Pigs vs. Real Pigs Research ○ Climate Change ● BrainPop Jr. - What is a Library? Dewey Decimal System | <p>SUGGESTED TIMEFRAME: 4-5 class periods</p> |

- Library
- BrainPop Jr. - Reading NonFiction - Snakes Example
 - Reading Nonfiction
- Online Research Sites - Pebble Go, World Book Online, BrainPop Jr., etc.
 - Climate Change
- Keyboarding
 - Using Nutley Schools credentials to log into TypeTastic
 - Number Keys, shift and symbol key

1.C. Google Apps and Digital Citizenship SUGGESTED TIMEFRAME: 6-8 class periods

- Accessing Google Docs and Slides through pre-made documents that students would complete.
- Schoology LMS - this platform can be used for online discussion
- Climate Change
- Common Sense Media - We, the Digital Citizens
 - How can we be good digital citizens?
 - We, the Digital Citizens | Common Sense Education
- Common Sense Media - That's Private!
 - What kinds of information should I keep to myself when I use the internet?
 - That's Private! | Common Sense Education
- Common Sense Media - Digital Trails
 - What information is OK to have in your digital footprint?
 - Digital Trails | Common Sense Education
- Common Sense Media - Who Is in Your Online Community?
 - Who is in your online community?
 - Who Is in Your Online Community? | Common Sense Education
- Common Sense Media - Putting a STOP to Online Meanness
 - What should you do if someone is mean to you online?
 - Putting a STOP to Online Meanness | Common Sense Education
- Common Sense Media - Let's Give Credit
 - How can you give credit for other people's work?
 - Let's Give Credit! | Common Sense Education

Modifications

Special Education

- Students' personal device used to log in and access websites
- Flexible seating arrangements, and movement breaks
- Call student name before asking a question
- Extend wait time after asking question
- Scaffolded instructions
- Sensory modifications
- Frequent check-ins
- Extended time or modified assignments

ELL

- Spanish/multilingual book section of library
- Translated materials
- Visual aids

- Opportunities for language practice in groups, language buddies

Gifted and Talented

- Free reading time (in lieu of drill and practice routines)

504

- Preferential seating
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Behavior management support, movement breaks
- Provide a quiet space, if necessary, to minimize distractions
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Frequent check-ins
- Extended time or modified assignments

Virtual

- Utilize online learning platforms (i.e., Google Meet and Schoology) to meet with students virtually, with the goal of introductions and “get-to-know-you” as well as establishing routines/expectations for remote-virtual learning specific to library media.
- Virtual read-alouds, demonstrations, and discussions about library media.
- The Assessment Goal Option 1 paired with a scavenger hunt to make a list of four books, two nonfiction (Call Number) and two fiction (spine label letters) on an assigned animal.

Career Readiness, Life Literacies, and Key Skills Practices

Please select all career readiness, life literacies, and key skills practices that apply to this unit of study:

- Act as a responsible and contributing community member 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.

For more information: New Jersey Student Learning Standards - Career Readiness, Life Literacies, and Key Skills (pages 15-16)

Unit 2 - Coding

Summary and Rationale

The purpose of this unit is to understand the basic components of coding, understanding keyboarding functions, and predict the outcome of scripts. Students will also begin to learn the impact of computer technology, and practice algorithms and programming (sequences and simple loops).

Recommended Pacing

Trimester 2 (December - Mid-March)

Standards

NJSLS 8.1 Computer Science

Computing Systems

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| 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 |
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| 8.1.2.CS.3 | Describe basic hardware and software problems using accurate terminology. |
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Networks and the Internet

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| 8.1.2.NI.1 | Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network. |
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| 8.1.2.NI.2 | Describe how the Internet enables individuals to connect with others worldwide. |
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| 8.1.2.NI.3 | Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others. |
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| 8.1.2.NI.4 | Explain why access to devices need to be secured. |
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Impacts of Computing

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| 8.1.2.IC.1 | Compare how individuals live and work before and after the implementation of new computing technology. |
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Algorithms and Programming

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| 8.1.2.AP.1 | Model daily processes by creating and following algorithms to complete tasks. |
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| 8.1.2.AP.2 | Model the way programs store and manipulate data by using numbers or other symbols to represent information. |
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| 8.1.2.AP.3 | Create programs with sequences and simple loops to accomplish tasks. |
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| 8.1.2.AP.4 | Break down a task into a sequence of steps. |
| 8.1.2.AP.5 | Describe a program's sequence of events, goals, and expected outcomes. |
| 8.1.2.AP.6 | Debug errors in an algorithm or program that includes sequences and simple loops. |
| Instructional Focus | |
| Enduring Understandings: <i>Students will understand that...</i> | Essential Questions: |
| EU 2.A: A database is a useful resource. EU 2.B: Computer networks connect individuals, places, information, and ideas. EU 2.C: Apply loops and functions to recognize patterns and repetition in programs. | How do I locate a book in LMC using the Follet Destiny Online Card Catalog? What are the benefits of using technology? How do I use patterns and repetition? (loops and functions) |
| Evidence of Learning (Assessments) | |
| <p>PERFORMANCE ASSESSMENT(S) G.R.A.S.P.S <i>Students will show that they really understand by evidence of...</i></p> <p>Option 1: Goal: You will demonstrate the concepts of loops in an unplugged demonstration. Role: You are a user of technology and a coder Audience: Your classmates and teacher Situation: You have been asked to demonstrate how a loop works. Product: Working in groups, you will diagram a series of dance steps and then perform those dance steps demonstrating that a loop is a series of repeated sequences. Standards/Criteria: You must complete the dance steps in the correct sequence/loop.</p> <p>Option 2: Goal: Locate repeating phrases inside song lyrics and identify sections of a song to pull into a function Role: You are a famous dance choreographer Audience: The class who are dancers. Situation: You need to decode a song. Identify the chorus and see how it repeats. Product: Imagine the song is a computer program. Defining a title (Chorus) for a little piece of code that you use over and over again is called creating a function. Standards/Criteria: Act out the song with the chorus as a function of repeated actions, not words. Use arrows and create a program with lots of repeating instructions Circle those repeating actions Define a function called "Chorus" above the program Cross out everywhere the repeating actions appear in the program and write "Chorus" instead Repeat until the class can go through the dance with little direction</p> | |
| Objectives (SLO) | |

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| <p>ESSENTIAL KNOWLEDGE (EK) <i>Students will know...</i></p> <p>EK 2.A</p> <ul style="list-style-type: none"> ● Databases (Follet Destiny, Pebble Go, etc.) ● Resources in the library media center are arranged and located in numerical order and ABC order. <p>EK 2.B</p> <ul style="list-style-type: none"> ● Computer program navigation: software programs and websites ● Network ● Program usernames and passwords ● Location of keyboard and special keys: space bar, shift, return/enter, and @ symbol, tab, arrow keys common q ● Locate and use Home Row <p>EK 2.C</p> <ul style="list-style-type: none"> ● Loops as a series of repeated steps to complete a task. ● Computer programming involving sequencing, conditions, and loops ● A function is a block of organized, reusable code that is used to perform a single, related action. | <p>LEARNING OBJECTIVES (LO) <i>Students will be skilled at...</i></p> <p>LO 2.A.1: Identify and access databases, such as the Follet Destiny icon on desktop. LO 2.A.2: Utilize databases, including visual search feature and input a query (in Follett).</p> <p>LO 2.B.1: Resting position on Home Row. LO 2.B.2: Locate and type letters on a keyboard. LO 2.B.3: Locate and use, when necessary, the special keys of a keyboard, including space bar, shift, return/enter, and @ symbol, tab, arrow keys common q, Command p LO 2.B.4: Identify research needs and select the most efficient software program and websites to meet that need. LO 2.B.5: Understand that programs require username and passwords to identify the user, keep track of progress, and keep networks secure. LO 2. B.6 Correctly input username and password for programs with visual aid. (computer card and/or shelf marker)</p> <p>LO 2.C.1: Store and reuse code that repeats in programs LO 2.C.2: Decompose a real world problem into sub sets LO 2 C.3: Use coding language, such as sequence, loop, code, blockly, algorithm, if-then, de-bug, loops and functions.</p> |
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Suggested Lesson Resources/Technology Tools

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| <p>2.A. SUGGESTED TIMEFRAME: 1-2 class periods</p> <ul style="list-style-type: none"> ● Databases |
| <p>2.B. SUGGESTED TIMEFRAME: 1-3 class periods</p> <ul style="list-style-type: none"> ● Typetastic lessons ● Location of keys on the keyboard ● Home row, shift, space, delete, return/enter, @ symbol, Command Q, Command P |
| <p>2.C. SUGGESTED TIMEFRAME: 5-7 class periods</p> <ul style="list-style-type: none"> ● Model daily processes to understand coding concepts ● Review coding as a language and apply basic commands to move through simple mazes using Kodable lessons and introduce loops and functions in coding and justify decisions with increased complexity in solving computational tasks. ● Code. org https://studio.code.org/s/coursec-2020 Second Grade Coding Fundamental Curriculum Course C ● Hour of Code projects (December) ● Introduction to coding videos (BrainpopJr.) |

Modifications

Special Education

- Students' personal device used to log in and access websites
- Flexible seating arrangements, and movement breaks
- Call student name before asking a question
- Extend wait time after asking question
- Scaffolded instructions
- Sensory modifications
- Frequent check-ins
- Extended time or modified assignments

ELL

- Spanish/multilingual book section of library
- Translated materials
- Visual aids
- Opportunities for language practice in groups, language buddies

Gifted and Talented

- Free reading time (in lieu of drill and practice routines)
- Advanced coding - Scratch

504

- Preferential seating
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Behavior management support, movement breaks
- Provide a quiet space, if necessary, to minimize distractions
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Frequent check-ins
- Extended time or modified assignments

Virtual

- Utilize online learning platforms (i.e., Google Meet and Schoology) to meet with students virtually, with the goal of introductions and “get-to-know-you” as well as establishing routines/expectations for remote-virtual learning specific to library media.
- Virtual read-alouds, demonstrations, and discussions about library media.

Career Readiness, Life Literacies, and Key Skills Practices

Please select all career readiness, life literacies, and key skills practices that apply to this unit of study:

- Act as a responsible and contributing community member 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.

Unit 3 - Design Thinking

Summary and Rationale

Students will be familiar with and understand the components of: Engineering Design Process, Interaction of Technology and Humans, Nature of Technology, Effects of Technology on Natural World. Students will collect and present data. They will use the data to build a product using the design process. They will learn to identify constraints and their role in the engineering design process. They will identify how technology impacts or improves life.

Recommended Pacing

Trimester 3 (Mid-March - June)

Standards

NJSLS 8.1 Computer Science

Data and Analysis

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| 8.1.2.DA.1 | Collect and present data, including climate change data, in various visual formats. |
| 8.1.2.DA.2 | Store, copy, search, retrieve, modify, and delete data using a computing device. |
| 8.1.2.DA.3 | Identify and describe patterns in data visualizations. |
| 8.1.2.DA.4 | Make predictions based on data using charts or graphs. |

NJSLS 8.2 Design Thinking

Engineering Design

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| 8.2.2.ED.1 | Communicate the function of a product or device. |
| 8.2.2.ED.2 | Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. |
| 8.2.2.ED.3 | Select and use appropriate tools and materials to build a product using the design process. |
| 8.2.2.ED.4 | Identify constraints and their role in the engineering design process. |

Interaction of Technology and Humans

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| 8.2.2.ITH.1 | Identify products that are designed to meet human wants and needs. |
| 8.2.2.ITH.2 | Explain the purpose of a product and its value. |
| 8.2.2.ITH.3 | Identify how technology impacts or improves life. |
| 8.2.2.ITH.4 | Identify how various tools reduce work and improve daily tasks. |
| 8.2.2.ITH.5 | Design a solution to a problem affecting the community in a collaborative team and explain the |

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| | intended impact of a solution. |
| Nature of Technology | |
| 8.2.2.NT.1 | Model and explain how a product works after taking it apart, identifying the relationship of each part, and putting it back together. |
| 8.2.2.NT.2 | Brainstorm how to build a product, improve a designed product, fix a product that has stopped working, or solve a simple problem. |
| Effects of Technology on the Natural World | |
| 8.2.2.ETW.1 | Classify products as resulting from nature or produced as a result of technology. |
| 8.2.2.ETW.2 | Identify the natural resources needed to create a product. |
| 8.2.2.ETW.3 | Describe or model the system used for recycling technology. |
| 8.2.2.ETW.4 | Explain how the disposal of reusing a product affects the local and global environment. |
| Ethics and Culture | |
| 8.2.2.EC.1 | Identify and compare technology used in different schools, communities, regions, and parts of the world. |
| NJSLS 9.4 Life Literacies and Key Skills | |
| Critical Thinking and Problem-Solving | |
| 9.4.2.CT.1 | Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem. |
| 9.4.2.CT.2 | Identify possible approaches and resources to execute a plan. |
| 9.4.2.CT.3 | Use a variety of types of thinking to solve problems (e.g., inductive, deductive). |
| Technology Literacy | |
| 9.4.2.TL.3 | Enter information into a spreadsheet and sort the information. |
| 9.4.2.TL.6 | Illustrate and communicate ideas and stories using multiple digital tools. |
| 9.4.2.TL.7 | Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts. |
| Information and Media Literacy | |
| 9.4.2.IML.1 | Identify a simple search term to find information in a search engine or digital resource. |
| 9.4.2.IML.2 | Represent data in a visual format to tell a story about the data. |
| 9.4.2.IML.3 | Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults |

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| 9.4.2.IML.4 | Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic). |
| Instructional Focus | |
| Enduring Understandings: <i>Students will understand that...</i> | Essential Questions: |
| EU 3.A.: The engineering design process is a specific set of steps engineers use to organize their ideas and refine potential solutions to engineering challenges. | How can I use each step of the EDP to help me solve a problem? |
| Evidence of Learning (Assessments) | |
| <p>PERFORMANCE ASSESSMENT(S) G.R.A.S.P.S <i>Students will show that they really understand by evidence of...</i></p> <p>Goal: To build a prototype or design of a real-life product. For example, to build a new playground equipment or a toy made from recycled materials. Role: Architectural Engineer Group Audience: The teacher and students acting as the Board of Education or Toy Store executives Situation: Students need a playground at a school or a toy for a toy drive. The Architectural Design Group has agreed to present a model of a playground or toy. They must collect data about the topic (such as which playground equipment do you prefer OR which toy would you prefer, etc.) and present this data visually along with a design for a new product (such as a new playground equipment, or a toy made from recycled materials). Include how the product could make an impact in a variety of contexts (social, academic, athletic, etc.) Product: Data and product design</p> <p>Example: Playground - Recycling materials</p> | |
| Objectives (SLO) | |
| <p>ESSENTIAL KNOWLEDGE (EK) <i>Students will know...</i></p> <p>EK 3.A</p> <ul style="list-style-type: none"> ● Engineers study science and the natural world as a starting point in design. Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants. ● Types of Engineers <ul style="list-style-type: none"> ○ Mechanical engineer ○ Medical engineer ○ Architecture engineer ● Engineering Design Process | <p>LEARNING OBJECTIVES (LO) <i>Students will be skilled at...</i></p> <p>LO 3.A.1: Identify different types of engineers and how they contribute their designs for solving problems in their field. LO 3.A.2: Conduct research on an engineer or product (teacher should model with Climate Change). LO 3.A.3: Utilize the steps in the EDP. LO 3.A.4: Define simple machines as it relates to design. LO 3.A.5: Use collaboration and communication to share ideas and allow for each member of the group to contribute to design challenges. LO 3.A.6: Identify possible approaches to a design challenge, and use a variety of types of thinking to solve problems. LO 3.A.7: Take notes in an Engineering Design Journal.</p> |

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| <ul style="list-style-type: none"> Simple Machine Designs (such as Lever, inclined plane, etc.) <p>EK 3.B</p> <ul style="list-style-type: none"> Data Analysis Spreadsheets - Google Sheets | <p>LO 3.B.1: Enter information in a spreadsheet (Google Sheet). LO 3.B.2: Make predictions about the information. LO 3.B.3: Sort the information. LO 3.B.4: Present the information visually.</p> |
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Suggested Lesson Resources/Technology Tools

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| <p>3.A. SUGGESTED TIMEFRAME: 10-12 class periods</p> <ul style="list-style-type: none"> Video about different types of engineers Solve Problems: Be an Engineer! <u>What Do Engineers Do</u> (pg 77) from the Family Engineering book. Identify and compare different types of technology and their uses Create an Engineer Design Process flip book Simple machine notebook Video about simple machines Simple Machines for Kids: Science and Engineering for Children - FreeSchool Design option 1- building a playground with simple machines Keeping a EDP Journal and practicing good communication skills Lego Communication Challenge Spaghetti Tower Rapunzel Engineers an Escape STEM activity Pencil Tower Robot made with recycled materials High Rise Tower from PBS Design Squad: https://pbskids.org/designsquad/parentseducators/resources/high_rise.html <p>3.B</p> <ul style="list-style-type: none"> Lessons on data - utilize Google Sheets |
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Modifications

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| <p>Special Education</p> <ul style="list-style-type: none"> Students' personal device used to log in and access websites Flexible seating arrangements, and movement breaks Call student name before asking a question Extend wait time after asking question Scaffolded instructions Sensory modifications Frequent check-ins Extended time or modified assignments, such as less constraints on design projects <p>ELL</p> <ul style="list-style-type: none"> Spanish/multilingual book section of library Translated materials Visual aids Opportunities for language practice in groups, language buddies <p>Gifted and Talented</p> <ul style="list-style-type: none"> Modified assignments, such as more constraints on Design projects |
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504

- Preferential seating
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Behavior management support, movement breaks
- Provide a quiet space, if necessary, to minimize distractions
- Accessible materials, as per student needs (large print, audio, digital texts, etc.)
- Frequent check-ins
- Extended time or modified assignments

Virtual

- Utilize online learning platforms (i.e., Google Meet and Schoology) to meet with students virtually
- Screencast demonstrations of Design Challenges
- Use of Design Squad website
- The Assessment Goal Option 1 would focus on students completing a design notebook and submitting via Schoology and/or presenting information in virtual group setting (google meet) or via FlipGrid

Career Readiness, Life Literacies, and Key Skills Practices

Please select all career readiness, life literacies, and key skills practices that apply to this unit of study:

- Act as a responsible and contributing community member 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.

For more information: New Jersey Student Learning Standards - Career Readiness, Life Literacies, and Key Skills (pages 15-16)