Wayne
Township Public Schools

Elementary Media K-5 Curriculum

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Mission Statement

The mission of the elementary library media program of the Wayne Township School District is to ensure that students and staff are efficient and effective users of technology and information. The Library Media Center possesses a wide scope of information including literature, technology, and media. It provides tools for learning, understanding, and promotes design thinking. The goal of the program is to promote in students both the powers of problem solving skills as well as informational and digital literacies to function successfully in the world and workplace of the 21st Century. This mission recognizes the essential role of the library media program in the educational process as a dynamic catalyst for cross-curricular academic instruction and excellence in education.

This mission will be accomplished in the following manner:

- Library media specialists will support the goals and objectives of the New Jersey Student Learning Standards of Computer Science, Design Thinking, Career Readiness, Life Literacies, and Key Skills along with the American Association of School Librarians Standards for the 21st century in our classroom activities.
- The elementary library media program will be scaffolded to build on the curriculum from previous grades in order to encourage a lifelong love of reading, informational and digital literacies.
- Instructional strategies utilized by library media specialists will be designed to enable students to understand, analyze, evaluate, synthesize, and apply appropriate information efficiently, effectively, and creatively.
- Students will use a variety of resources, including primary, print, and online resources.
- Student learning will be assessed based on project-based rubrics, class participation, and learning progression.

Units of Study

The elementary library media program is comprised of the following units of study:

Units of Study	Essential Questions
Unit 1: Media Center Orientation	**K-2 Essential Questions** - How is the Library Media Center organized to enrich my academic experience? - Which print and or digital resources are available in the Library Media Center? - How do we find a happy balance between our online and offline activities and go places safely online? **3-5 Essential Questions** - How is the Library Media Center organized to enrich my academic experience? - Which print and or digital resources are available in the Library Media Center? - How do digital citizens take responsibility for themselves, their communities, and their world?
Unit 2: Digital Tools	**K-2 Essential Questions** - How can I navigate the dynamic digital landscape to become a healthy, productive, 21st century global-minded individual? - How can I engage as a responsible community member in a digital society? - How can I collect, use, and display data about individuals and the world around me? **3-5 Essential Questions** - How does what I post online affect my identity as a healthy, productive, 21st century global-minded individual? - What is cyberbullying? How can I prevent or stop it by being an upstander? - How do we find credible information on the internet? - How can I collect, use, and display data about individuals and the world around me?

Unit 3: Design Thinking	● **K-2 Essential Questions**
	  ○ How can knowledge of technology, engineering, and design help me understand myself and others?
	  ○ How can I use computational thinking to code and program?
	  ○ How can I apply coding skills to program robots?
	
	● **3-5 Essential Questions**
	  ○ How can knowledge of technology, engineering, and design help me understand myself and others?
	  ○ How can I use computational thinking to code and program?
	  ○ How can I apply coding skills to program robots?

Unit 4: Creativity and Innovation	● **K-2 Essential Questions**
	  ○ How can brainstorming create new and innovative ideas?
	  ○ How do I identify and develop a plan to effectively solve the problem?
	  ○ How can my knowledge of robots be applied to STREAM challenges and Makerspace activities to solve real world problems?
	
	● **3-5 Essential Questions**
	  ○ How can I collaborate with others with diverse perspectives to develop my creativity and innovation skills?
	  ○ How can taking intellectual risks solve problems effectively by gathering data, seeking resources, and applying critical thinking skills?
	  ○ How can my knowledge of robots be applied to STREAM challenges and activities to solve real world problems?

In support of this mission, the elementary library media program will adhere to the American Library Association Bill of Rights.

Library Bill of Rights

The American Library Association affirms that all libraries are forums for information and ideas, and that the following basic policies should guide their services.

I. Books and other library resources should be provided for the interest, information, and enlightenment of all people of the community the library serves. Materials should not be excluded because of the origin, background, or views of those contributing to their creation.

II. Libraries should provide materials and information presenting all points of view on current and historical issues. Materials should not be proscribed or removed because of partisan or doctrinal disapproval.

III. Libraries should challenge censorship in the fulfillment of their responsibility to provide information and enlightenment.

IV. Libraries should cooperate with all persons and groups concerned with resisting abridgment of free expression and free access to ideas.

V. A person's right to use a library should not be denied or abridged because of origin, age, background, or views.

VI. Libraries which make exhibit spaces and meeting rooms available to the public they serve should make such facilities available on an equitable basis, regardless of the beliefs or affiliations of individuals or groups requesting their use.

Adopted June 19, 1939, by the ALA Council; amended October 14, 1944; June 18, 1948; February 2, 1961; June 27, 1967; January 23, 1980; inclusion of "age" reaffirmed January 23, 1996.

Library Media Center Differentiation

Environment Modifications and Accommodations:	Lesson Modifications and Accommodations:
- Provide preferential seating in an area free of distractions - Cooperative learning strategies, when appropriate - Set clearly defined standards - Remind students of rules periodically - Provide opportunities for movement - Monitor during transitions - Provide student choice of tasks, when possible - Provide varied teaching techniques to meet the needs of the learner - Provide hands-on learning opportunities **Additional Differentiation Strategies:** - Differentiation Strategies for Special Education Students - Differentiation Strategies for Gifted and Talented Students - Differentiation Strategies for ELL Students - Differentiation Strategies for At Risk Students - Differentiation Strategies for Students with a 504	- Involve student in the presentation, as brainstorming - Repeat/reword/rephrase directions as needed - Provide directions in both written and oral form - Ask the student to repeat directions to teacher to strengthen understanding - Break information into steps and monitor comprehension at small stages - Complete the first example with the student - Provide concrete examples before teaching abstract ones - Reduce the number of concepts presented in one lesson or activity - Highlight important words in worksheets or activity directions - Provide copies of notes or blanks that can be filled in during listening - Use pairs or group work - Redirect students to task by visual, auditory or tactile clues - Speak clearly, loudly or quietly depending on the effectiveness for the student - Give immediate feedback to student, as to task - Use positive reinforcement, as much as possible - Extend time as needed or reconsider requirements by reducing the number of questions - When the student checks out a book, ask about an important concept from the lesson to check for comprehension - Provide high interest-low level books in accordance with units being studied or for literature appreciation - Assist student in locating books of interest by using the computer station and finding books on the shelves

Lucarelli, Shannon, et al. *School Library Media Instruction Curriculum Guide.* North Burlington Regional School District: Columbus, N.J. 2012

Acronyms and Abbreviations

AASL	American Association of School Librarians
ALA	American Library Association
AUP	Acceptable Use Policy
CRP	Career and Ready Practices (21st Century Skills)
CSM	Common Sense Media
LMC	Library Media Center
LMS	Library Media Specialist
NJSLS	New Jersey Student Learning Standards
RAA	Read Across America
RT	Readers' Theater
STREAM	Science, Technology, Robotics/Reading, Engineering, Art, Math
WIDA	World-Class Instructional Design and Assessment
WB	World Book
4 "C"s	Communication, Collaboration, Critical Thinking, Creativity

Elementary Media Curriculum K-5 Pacing Guide

Wayne Township Public Schools

Summary
Students in grades K-2 will be introduced to the physical and digital components of the Library Media Center. In this unit, students will learn the overall organization of the Media Center and how it can enrich their academic experience. Students will learn routines, expectations, and the physical and digital resources that are available for them in the Media Center.

Standard Numbers
AASL Standards
- AASL.I.C.1 Learners adapt, communicate, and exchange learning products with others in a cycle that includes: Interacting with content presented by others.
- AASL.I.D. Learners participate in an ongoing inquiry-based process by: Enacting new understanding through real-world connections.
- AASL.II.D.1 Learners demonstrate empathy and equity in knowledge building within the global learning community by: Seeking interactions with a range of learners.
- AASL.II.D.2 Learners demonstrate empathy and equity in knowledge building within the global learning community by: Demonstrating interest in other perspectives during learning activities.
- AASL.III.D.2 Learners actively participate with others in learning situations by: Recognizing learning as a social responsibility.
- AASL.V.C.1 Learners engage with the learning community by: Expressing curiosity about a topic of personal interest or curricular relevance.

NJSLS Computer Science & Design Thinking
Computing Systems
- 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.
- 8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.

Network and Internet
- 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.

Interaction of Technology and Humans
- 8.2.2.ITH.1: Identify products that are designed to meet human wants or needs.
- 8.2.2.ITH.2: Explain the purpose of a product and its value.

NJSLS Career Readiness, Life Literacies, and Key Skills

Digital Citizenship
- 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet
- 9.4.2.DC.5: Explain what a digital footprint is and how it is created.
- 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments.
- 9.4.2.DC.7: Describe actions peers can take to positively impact climate change

Career Readiness Practices
- CRP1 Act as a responsible and contributing community members.
- CRP3 Consider the environmental, social and economic impacts of decisions.

NJSLS English Language Arts

Reading Literature
- RL.K.1. With prompting and support, ask and answer questions about key details in a text
- RL.K.2. With prompting and support, retell familiar stories, including key details.
- RL.1.3. Describe characters, settings, and major events in a story, using key details.
- RL.2.3. Describe how characters in a story respond to major events and challenges.

Speaking and Language
- SL.K.1.A. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
  SL.1.1.A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.B. Build on others' talk in conversations by linking their comments to the remarks of others

WIDA ELD Standards
- *Standard 1: English language learners communicate for Social and Instructional purposes within the school setting*

Essential Questions
- How is the Library Media Center organized to enrich my academic experience?
- Which print and or digital resources are available in the Library Media Center?
- How do we find a happy balance between our online and offline activities and go places safely online?

Enduring Understandings
- Students will understand how the library media center is organized, and where to locate books.
- Students will understand how to check out books and recognize the digital resources available. Students will comprehend how to be safe online and have healthy media balance.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Unit Objectives
- *Kindergarten*: Students will be introduced to the organization of the Media Center and how to access online resources safely.
- *1st Grade:* Students will learn the organization of the Media Center and how to access online resources safely.
- *2nd Grade*: Students will practice the organization of the Media Center and how to access online resources safely.

Unit Topics
- Media Center routine and expectations
- Book care, responsibility, parts of a book
- Book location - Fiction & Non-Fiction
- Media Center terminology
  - renew, check in, check out, hold, overdue, circulation
- District and School Subscriptions, Internet
- Google Suites overview and organization - Google Classroom and Google Drive
- District platforms (Example: Classlink)
- Device care (Chromebook, iPAD, etc), Parts of a computer/identifying technology

Assessments
Examples may include, but are not limited to the following**:**
- Formative: Observations, choice boards, discussions, exit tickets, classwork
- Summative: Convey organizational strategies used in the LMC, choice boards, Google Forms
- Benchmark: Successfully check out books at circulation desk, teacher created rubrics
- Alternative: Options may include centers/stations, graphic organizers, venn diagrams, or additional teacher created assignments

K-2 Lesson Activities for Physical Media Orientation

Grade Level	Suggested Literature	Suggested Activities
Kindergarten	- The Library Book - Mr. Wiggles - Manners in the Library - Library Book for Bear - BookFlix - Chicka, Chicka, Boom, Boom (Parts of a Book Pear Deck)	- Library song - Book Simon Says for Parts of a Book - Mr. Ginger - Youtube Video - No, no, never bag for book care
1st Grade	- Library Lion - What Happened to Marion's Book? - The Book That Jake Borrowed - Library Mouse - BookFlix - Wild about Books/Welcome to the Library	- No, no, never bag for book care - Examples of resources, both damaged and not damaged. - Brainpop Jr. - Classlink - Choosing a Book
2nd Grade	- If You Ever Want to Bring a Circus to the Library, Don't - Where Are My Books? - Library Mouse	- Find resources using a shelf marker - Brainpop Jr. - Classlink - Choosing a Book

K-2 Lesson Activities for Digital Media Orientation

Grade Level	Suggested Literature	Suggested Activities

Kindergarten	● Dot
	● If You Give a Mouse An iPhone
		● CSM - Media Balance is Important
		● CSM -Privacy & Security
		● Parts of a Computer
		  ○ Brainpop Jr. - Parts of a Computer
		● Chromebook Care Pear Deck Example
		● Internet Safety
		  ○ Brainpop Jr.

1st Grade	● Unplugged
	● Clicking Chicken
	● The Couch Potato(Media Balance)
		● Chromebook Care Pear Deck Example
		● Pebble Go - Understanding Media
		● Pebble Go - Digital Tools
		● Internet Safety
		  ○ Brainpop Jr.
		  ○ CSM - Pause and Think Online
		● Brainpop Jr. - Classlink
		  ○ Computational Thinking
		  ○ Parts of a Computer

2nd Grade	● Once Upon a Time
	● Tek
	● BookFlix - Blackout (Media Balance)
		● Privacy & Security - CSM - That's Private
		  ○ PebbleGo - Computer Privacy
		● Internet Safety
		  ○ Brainpop Jr.
		  ○ CSM - We the Digital Citizens
		  ○ Pebble Go - Internet Safety
		● Chromebook Care Pear Deck Example
		● Pebble Go - Digital Citizenship
		● Brainpop Jr. - Classlink
		  ○ Computational Thinking

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Summary
Students in grades 3-5 will be introduced to the physical and digital components of the Library Media Center. In this unit, students will learn the overall organization of the Media Center and how it can enrich their academic experience. Students will learn routines, expectations, and physical and digital resources that are available for them in the Media Center. Students will also become more aware of how digital citizens take responsibility for themselves, their communities, and their world by participating in online safety and digital etiquette lessons.

Standard Numbers
AASL Standards
- AASL.I.C.1 Learners adapt, communicate, and exchange learning products with others in a cycle that includes: Interacting with content presented by others.
- AASL.I.D. Learners participate in an ongoing inquiry-based process by: Enacting new understanding through real-world connections.
- AASL.II.D.1 Learners demonstrate empathy and equity in knowledge building within the global learning community by: Seeking interactions with a range of learners.
- AASL.II.D.2 Learners demonstrate empathy and equity in knowledge building within the global learning community by: Demonstrating interest in other perspectives during learning activities.
- AASL.III.D.2 Learners actively participate with others in learning situations by: Recognizing learning as a social responsibility.
- AASL.V.C.1 Learners engage with the learning community by: Expressing curiosity about a topic of personal interest or curricular relevance.

NJSLS Computer Science & Design Thinking
Computing Systems
- 8.1.5.CS.1: Model how computing devices connect to other components to form a system.
- 8.1.5.CS.2: Model how computer software and hardware work together as a system to accomplish tasks.
- 8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

Network and Internet
- 8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods.
- 8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information.

Data Analysis
- 8.1.5.DA.2: Compare the amount of storage space required for different types of data.

NJSLS Career Readiness, Life Literacies, and Key Skills

Digital Citizenship
- 9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology
- 9.4.5.DC.5: Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.

Career Readiness Practices
- CRP 1 Act as a responsible and contributing community members and employee.
- CRP 3 Consider the environmental, social and economic impacts of decisions.

NJSLS English Language Arts

Reading Literature
- RL.3.1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RL.3.3. Describe the characters in a story (e.g., their traits,motivations, or feelings) and explain how their actions contribute to the sequence of events.
- RL.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL.4.2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- RL.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.
- RL.5.2. Determine the key details in a story, drama or poem to identify the theme and to summarize the text.

Speaking and Listening
- SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

WIDA ELD Standards
- *Standard 1: English language learners communicate for Social and Instructional purposes within the school setting*

Essential Questions
- How is the Library Media Center organized to enrich my academic experience?
- Which print and or digital resources are available in the Library Media Center?
- How do digital citizens take responsibility for themselves, their communities, and their world?

<u>Enduring Understandings</u>
- Students will understand how to locate fiction and nonfiction books and recognize the digital resources that are available in the Media Center.
- Students will understand how to safely navigate online and recognize how to demonstrate proper digital etiquette when sharing online.

<u>Interdisciplinary Connections</u>
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

<u>Unit Objectives</u>
- *3rd Grade*
    - Students will be introduced to the Dewey Decimal Classification system to better understand the organization of print materials in the Library Media Center.
    - Students will be introduced to how to navigate online resources safely and apply such skills into their learning.
    - Students will be introduced to proper digital etiquette and gain an understanding of what is appropriate to share online.
- *4th Grade*
    - Students will review the Dewey Decimal Classification system to better understand the organization of print materials in the Library Media Center.
    - Students will review how to navigate online resources safely and apply such skills into their learning.
    - Students will review proper digital etiquette and gain an understanding of what is appropriate to share online.
- *5th Grade*
    - Students will practice the Dewey Decimal Classification system to better understand the organization of print materials in the Library Media Center.
    - Students will practice how to navigate online resources safely and apply such skills into their learning.
    - Students will practice proper digital etiquette and gain an understanding of what is appropriate to share online.

Unit Topics

Physical Orientation
- Media Center routine and expectations - Review of device care & Google Classroom
- Media Center terminology
  - renew, check in, check out, hold, overdue, circulation
- Book location using the Dewey Decimal Classification System

Digital Orientation
- Media balance and well being
- Online privacy & security
- Digital etiquette
- Destiny online Library
- District and School subscriptions
- District platform (Example: Classlink)

Assessments

Examples may include, but are not limited to the following:
- Formative: Observations, choice boards, discussions, exit tickets, classwork
- Summative: Convey organizational strategies used in the LMC, choice boards, Google Forms, Ability to locate a library book, compare and contrast print and digital resources
- Benchmark: Successfully check out books at circulation desk, teacher created rubrics
- Alternative: Options may include centers/stations, graphic organizers, venn diagrams, or additional teacher created assignments

3-5 Lesson Activities for Physical Media Orientation

Grade Level	Suggested Literature	Suggested Activities
3rd Grade	- The Boy who was raised by Librarians - The Librarian from Black Lagoon - The Library Dragon - Never Let a Ghost Borrow Your Library Book	- LMC Tour - collection and genre location - MC Scavenger Hunt link for book location following the Dewey Decimal Classification System - Vocabulary games for introduction & review - Brainpop Jr. - Classlink - Library
4th Grade	- The Librarian of Basra - Mr. Lemoncello's Library Race - Mr. Lemoncello's Library Olympics	- LMC Tour - collection and genre location - Library Scavenger Hunt for book location following the Dewey Decimal Classification System - Vocabulary games for review & practice
5th Grade	- The Librarian of Basra - Ron's Big Mission - Escape from Mr. Lemoncello's Library	- LMC Tour - collection and genre location - Library Scavenger Hunt for book location following the Dewey Decimal Classification System - Vocabulary games for review and practice

3-5 Lesson Activities for Digital Media Orientation		
Grade Level	**Suggested Literature**	**Suggested Activities**
3rd Grade	- Nerdy Birdy Tweets - Once Upon a Time	- CSM - Your Ring of Responsibility - CSM - Password Power-up - Breakout Edu - Assessment option - login required - Brainpop - Classlink - Online Safety - Digital Etiquette - Internet - Information Privacy - Media Balance
4th Grade	Technology Tail	- CSM - My Media Choices - CSM - Private and Personal Information - Breakout Edu - Assessment option - login required - Brainpop - Classlink - Online Safety - Digital Etiquette - Internet - Information Privacy - Media Balance
5th Grade	- Cell Phoney - But I Read it On the Internet	- Breakout Edu - Assessment option - login required - CSM - Finding My Media Balance - CSM - You Won't Believe This - Brainpop - Classlink - Online Safety - Digital Etiquette - Internet - Information Privacy - Media Balance

Wayne Township Public Schools

Summary

Students in grades K-2 will learn about various digital tools that help them become healthy, productive, and 21st century global-minded individuals. Students will engage as responsible community members in a digital society by being mindful about the effects of a digital footprint and cyberbullying. These communities include Google Classroom and Google Drive. Students will also learn how to collect, use, and display data about individuals and the world around them while learning about copyright and plagiarism topics.

Standard Numbers

NJSLS Computer Science & Design Thinking

Computing Systems
- 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.
- 8.1.2.CS.2: Explain the functions of common software and hardware components of computing systems.
- 8.1.2.CS.3: Describe basic hardware and software problems using accurate terminology.

Networks and the Internet
- 8.1.2.NI.1: Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.
- 8.1.2.NI.2: Describe how the Internet enables individuals to connect with others worldwide.
- 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.
- 8.1.2.NI.4: Explain why access to devices need to be secured.

Impacts of Computing
- 8.1.2.IC.1: Compare how individuals live and work before and after the implementation of new computing technology.

Data & Analysis
- 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.

Interactions of Technology and Humans
- 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.

Ethics and Culture
- 8.2.2.EC.1: Identify and compare technology used in different schools, communities, regions, and parts of the world.

NJSLS Career Readiness, Life Literacies, and Key Skills
Digital Citizenship
- 9.4.2.DC.1: Explain differences between ownership and sharing of information.
- 9.4.2.DC.2: Explain the importance of respecting the digital content of others.
- 9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).
- 9.4.2.DC.4: Compare information that should be kept private to information that might be made public.
- 9.4.2.DC.5: Explain what a digital footprint is and how it is created.
- 9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments.
- 9.4.2.DC.7: Describe actions peers can take to positively impact climate change.
Global and Cultural Awareness
- 9.4.2.GCA.1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals.
Information 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.4: Compare and contrast the way information is shared in a variety of contexts.
Technology Literacy
- 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool.
- 9.4.2.TL.2: Create a document using a word processing application.
- 9.4.2.TL.3: Enter information into a spreadsheet and sort the information.
- 9.4.2.TL.4: Navigate a virtual space to build context and describe the visual content.
- 9.4.2.TL.5: Describe the difference between real and virtual experiences.
- 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.
Career Readiness Practices
- CRP 1 Act as a responsible and contributing community members and employee.
- CRP 3 Consider the environmental, social, and economic impacts of decisions
- CRP 6 Model integrity, ethical leadership and effective management
- CPR 8 Use technology to enhance productivity increase collaboration and communicate effectively

NJSLS English Language Arts

Reading Literature
- RL.K.1. With prompting and support, ask and answer questions about key details in a text
- RL.K.2. With prompting and support, retell familiar stories, including key details.
- RL.1.3. Describe characters, settings, and major events in a story, using key details.
- RL.2.3. Describe how characters in a story respond to major events and challenges.

Speaking and Language
- SL.K.1.A. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion).
  SL.1.1.A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.B. Build on others' talk in conversations by linking their comments to the remarks of others

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting.

Essential Questions
- How can I navigate the dynamic digital landscape to become a healthy, productive, 21st century global-minded individual?
- How can I engage as a responsible community member in a digital society?
- How can I collect, use, and display data about individuals and the world around me?

Enduring Understandings
- Students will understand how to be good digital citizens in their digital community.
- Students will understand how to communicate effectively while using digital tools.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Unit Objectives

- *Kindergarten*
  - Students will be introduced to various digital tools to enhance learning experiences.
  - Students will be introduced to digital terminology and keyboarding skills.
  - Students will be introduced to the organization of Google Drive and Google Classroom.
  - Students will be introduced on how to be a good digital citizen online.
- *1st Grade*
  - Students will review various digital tools to enhance learning experiences.
  - Students will review digital terminology and keyboarding skills.
  - Students will review the organization of Google Drive and Google Classroom.
  - Students will review how to be a good digital citizen online.
- *2nd Grade*
  - Students will practice using various digital tools to enhance learning experiences.
  - Students will practice using digital terminology and keyboarding.
  - Students will practice using Google Drive and Google Classroom.
  - Students will review and practice using Google Docs and become familiar with the tool bar.
  - Students will be introduced to digital footprint and cyberbullying.

Unit Topics

- Digital Footprint and Identity
- Relationships and Communication: Online Community
- Cyberbullying
- Keyboarding - hand position and special keys
- Google Drive - overview and organization, how to access, how to start new doc
- Google Classroom -Digital communities allow for social interactions that can result in positive or negative outcomes. overview and organization
- Digital terms: stream, tabs, double click, username and password, cursor, closing tabs, APPS
- Introduction to plagiarism and copyright (grade 2) (Let's Give Credit! CSM

Assessments

Examples may include, but are not limited to the following:

- Formative: Observations, choice boards, discussions, exit tickets, classwork
- Summative: Appropriate use of simple databases and/or websites for an assigned task
- Benchmark: Labeling activities with technology
- Alternative: Options may include graphic organizers, venn diagrams, or additional teacher created assignments

K-2 Lesson Activities for Digital Tools		
Grade Level	**Suggested Literature**	**Suggested Activities**
Kindergarten	- Alphabet Adventure (Keyboarding) - Little i (Keyboarding) - Llama, Llama, and the Bully Goat - The Copycat Fish	- Keyboarding Activities - Homerow, letters on the keyboard, spacebar - Abcya.com activities (keyboard zoo) - Cyberbullying Vocabulary - Upstander, bully, cyber, etc - Copyright-Do's and Don'ts of copying in school and online - Collect Data /Analyze- Create a Table (ex. transportation to school, favorite season) - Google Drive and Google Classroom
1st Grade	- Click, Clack, Moo (Keyboarding) - Lucy and the Bully - Ruby and the Copycat	- Keyboarding Activities - Homerow, letters on the keyboard, spacebar - Abcya.com activities (keyboard zoo, typing rocket) - Cyberbullying - PebbleGo - Classlink - Copyright-Do's and Don'ts of copying in school and online - Collect Data /Analyze- Create a Table (ex. Weather for the month) - Google Drive and Google Classroom

2nd Grade	• Click, Clack, Moo (Keyboarding)
	• Recess Queen
	• When Marion Copied
		• Keyboarding Activities
		  ○ Typing programs (Typing Club, Typing.com)
		• Cyberbullying
		  ○ CSM-Putting a stop to online meanness
		• Plagiarism
		  ○ CSM Let's Give Credit
		• Digital Footprint
		  ○ CSM Digital Trails
		• Brainpop Jr video - Tally Charts & Bar Graphs -Collect Data /Analyze- Create a Table (ex. Student birthday months)
		• Google Drive and Google Classroom
		• Creating a Doc

Wayne Township Public Schools

Unit of Study 2: Digital Tools **Grades 3-5** **End of October into December**

Summary

Students in grades 3-5 will learn about how to properly post online as a healthy, productive, 21st century global-minded individual. In this unit, students will also learn about cyberbullying and their role to help prevent or stop it by being an upstander and being mindful of their digital footprint. Additional digital citizenship lessons include learning how to find credible information on the internet as well as collect, use, and display data about individuals and the world around them. Students will also learn digital tools that will help enhance or support their overall academic experience.

Standard Numbers

NJSLS Computer Science & Design Thinking

Computing Systems

- 8.1.5.CS.1: Model how computing devices connect to other components to form a system.
- 8.1.5.CS.2: Model how computer software and hardware work together as a system to accomplish tasks.
- 8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

Networks and the Internet

- 8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods.
- 8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information.

Impacts of Computing

- 8.1.5.IC.1: Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.
- 8.1.5.IC.2: Identify possible ways to improve the accessibility and usability of computing technologies to address the diverse needs and wants of users.

Data & Analysis

- 8.1.5.DA.1: Collect, organize, and display data in order to highlight relationships or support a claim.
- 8.1.5.DA.2: Compare the amount of storage space required for different types of data.
- 8.1.5.DA.3: Organize and present collected data visually to communicate insights gained from different views of the data.
- 8.1.5.DA.4: Organize and present climate change data visually to highlight relationships or support a claim.
- 8.1.5.DA.5: Propose cause and effect relationships, predict outcomes, or communicate ideas using data.

Interaction of Technology and Humans

- 8.2.5.ITH.1: Explain how societal needs and wants influence the development and function of a product and a system.
- 8.2.5.ITH.2: Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.
- 8.2.5.ITH.3: Analyze the effectiveness of a new product or system and identify the positive and/or negative consequences resulting from its use.
- 8.2.5.ITH.4: Describe a technology/tool that has made the way people live easier or has led to a new business or career.

Ethics and Culture
- 8.2.5.EC.1: Analyze how technology has contributed to or reduced inequities in local and global communities and determine its short- and long-term effects.

NJSLS Career Readiness, Life Literacies, and Key Skills
Digital Citizenship
- 9.4.5.DC.1: Explain the need for and use of copyrights.
- 9.4.5.DC.2: Provide attribution according to intellectual property rights guidelines using public domain or creative commons media.
- 9.4.5.DC.3: Distinguish between digital images that can be reused freely and those that have copyright restrictions.
- 9.4.5.DC.4: Model safe, legal, and ethical behavior when using online or offline technology (e.g., 8.1.5.NI.2).
- 9.4.5.DC.5: Identify the characteristics of a positive and negative online identity and the lasting implications of online activity.
- 9.4.5.DC.6: Compare and contrast how digital tools have changed social interactions (e.g., 8.1.5.IC.1).
- 9.4.5.DC.7: Explain how posting and commenting in social spaces can have positive or negative consequences.
- 9.4.5.DC.8: Propose ways local and global communities can engage digitally to participate in and promote climate action.

Global and Cultural Awareness
- 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view.

Information and Media Literacy
- 9.4.5.IML.1: Evaluate digital sources for accuracy, perspective, credibility and relevance.
- 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue (e.g., 4.MD.B.4, 8.1.5.DA.3).
- 9.4.5.IML.3: Represent the same data in multiple visual formats in order to tell a story about the data.
- 9.4.5.IML.4: Determine the impact of implicit and explicit media messages on individuals, groups, and society as a whole.
- 9.4.5.IML.5: Distinguish how media are used by individuals, groups, and organizations for varying purposes. (e.g., 1.3A.5.R1a).
- 9.4.5.IML.6: Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions (e.g., RI.5.7, 6.1.5.HistoryCC.7, 7.1.NM. IPRET.5).
- 9.4.5.IML.7: Evaluate the degree to which information meets a need including social emotional learning, academic, and social (e.g., 2.2.5. PF.5).

Technology Literacy
- 9.4.5.TL.1: Compare the common uses of at least two different digital tools and identify the advantages and disadvantages of using each.
- 9.4.5.TL.2: Sort and filter data in a spreadsheet to analyze findings.
- 9.4.5.TL.3: Format a document using a word processing application to enhance text, change page formatting, and include appropriate images, graphics, or symbols.
- 9.4.5.TL.4: Compare and contrast artifacts produced individually to those developed collaboratively (e.g., 1.5.5.CR3a).
- 9.4.5.TL.5: Collaborate digitally to produce an artifact.

Career Readiness Practices
- CRP 1 Act as a responsible and contributing community members.
- CRP 3 Consider the environmental, social and economic impacts of decisions.
- CPR 8 Use technology to enhance productivity, collaboration, and communicate effectively.

Reading Literature
- RL.3.1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RL.3.3. Describe the characters in a story (e.g., their traits,motivations, or feelings) and explain how their actions contribute to the sequence of events.
- RL.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL.4.2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- RL.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.
- RL.5.2. Determine the key details in a story, drama or poem to identify the theme and to summarize the text.

Speaking and Listening
- SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting.

Essential Questions
- How does what I post online affect my identity as a healthy, productive, 21st century global-minded individual?
- What is cyberbullying? How can I prevent or stop it by being an upstander?
- How do we find credible information on the internet?
- How can I collect, use, and display data about individuals and the world around me?

Enduring Understandings
- Students will understand how to be good digital citizens in their digital community and communicate effectively when using digital tools.
- Students will recognize the principles of copyright, credible sources, and plagiarism.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Unit Objectives

- *3rd Grade*
    - Students will be introduced to their digital footprint and how it affects their online identity.
    - Students will be introduced to cyberbullying, the power of words online, and how to be an upstander.
    - Students will be introduced to plagiarism and identify credible information on the internet.
    - Students will be introduced to Google Apps for Education.

- *4th Grade*
    - Students will review their digital footprint and how it affects their online identity.
    - Students will review cyberbullying, the power of words online, and how to be an upstander.
    - Students will review plagiarism and identify credible information on the internet.
    - Students will review and use Google Apps for Education.

- *5th Grade*
    - Students will practice improving their digital footprint and how it affects their online identity.
    - Students will practice how to identify cyberbullying, the power of words online, and how to be an upstander.
    - Students will practice recognizing plagiarism and identify credible information on the internet.
    - Students will practice and use Google Apps for Education.

Unit Topics

- Digital Footprint and Identity
- Relationships and Communication: Online Community
- Cyberbullying
- Keyboarding Shortcuts
- Google Apps - Drive, Docs, Sheets, Slides, Drawing, email
- Plagiarism, copyright and credible sources

Assessments

Examples may include, but are not limited to the following:

- Formative: Observations, choice boards, discussions, exit tickets, classwork
- Summative: Appropriate use of simple databases and/or websites for an assigned task, Google Forms
- Benchmark: Labeling activities with technology
- Alternative: Options may include graphic organizers, or additional teacher created assignments

	3-5 Lesson Activities for Digital Tools	
Grade Level	**Suggested Literature**	**Suggested Activities**

3rd Grade	● Goldilocks A Cautionary Tale	● Digital Footprint
		  ○ CSM - This is Me
		● Cyberbullying
		  ○ CSM - The Power of Words
		● Plagiarism
		  ○ Brain Pop-Paraphrasing
		● Copyright
		  ○ BrainPop
		● Chromebook Shortcuts
		● Data collection & Analyzing - Google Sheets

4th Grade	● Pirates of Plagiarism	● Chromebook Shortcuts
		● Digital Footprint
		  ○ Brainpop - Digital Footprint
		  ○ CSM - Our Online Tracks
		  ○ Digital Footprint Lesson
		● Cyberbullying
		  ○ CSM -Be A Super Digital Citizen
		● Plagiarism
		  ○ CSM- A Creators Rights and Responsibilities
		● Brainpop Email & IM
		● Data collection & Analyzing - Google Sheets
		● Research
		  ○ Brainpop Internet Search
		  ○ Safe Search Engines for Kids

| 5th Grade | ● Bully | ● [Chromebook Shortcuts](#)
● Digital Footprint
   ○ Brainpop - Digital Footprint
   ○ [Digital Footprint Lesson](#)
● Cyberbullying
   ○ [CSM-Cyberbullying](#)
   ○ Brainpop - Cyberbullying
● Plagiarism
   ○ [CSM Reading News Online](#)
   ○ Brainpop-Plagiarism
● Research
   ○ [WB - Research Skills Webquest](#)
   ○ Brainpop Online Sources
   ○ Brainpop Internet Search
   ○ Safe Search Engines for Kid
● Brainpop Email & IM
● Data collection & Analyzing - Google Sheets
● Copyright and Fair Use
   ○ [Copyright and Fair Use Lesson](#) |

Wayne Township Public Schools

Summary

In the Design Thinking unit, students in grades K-2 will gain knowledge of how technology, engineering, and design can help them understand themselves and others. Students will learn how to apply computational thinking skills to code and program as well as recognize the design thinking process as an approach to solving problems. Students will also learn how to operate, program and navigate various robots.

Standard Numbers

NJSLS Computer Science & Design Thinking

Algorithms & Programming
- 8.1.2.AP.1: Model daily processes by creating and following algorithms to complete tasks.
- 8.1.2.AP.2: Model the way programs store and manipulate data by using numbers or other symbols to represent information.
- 8.1.2.AP.3: Create programs with sequences and simple loops to accomplish tasks.
- 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.

Engineering Design
- 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.

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.

NJSLS Career Readiness, Life Literacies, and Key Skills

Life Literacies and Key Skills

Creativity and Innovation
- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).

Critical Thinking and Problem Solving
- 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.

Career Readiness Practices
- CRP 4 Demonstrate creativity and innovation
- CRP 5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP 8 Use technology to enhance productivity increase collaboration and communicate effectively

NJSLA English Language Arts

Reading Literature
- RL.K.1. With prompting and support, ask and answer questions about key details in a text
- RL.K.2. With prompting and support, retell familiar stories, including key details.
- RL.1.3. Describe characters, settings, and major events in a story, using key details.
- RL.2.3. Describe how characters in a story respond to major events and challenges.

Speaking and Language
- SL.K.1.A. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). SL.1.1.A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.B. Build on others' talk in conversations by linking their comments to the remarks of others

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting.

Essential Questions
- How can knowledge of technology, engineering, and design help me understand myself and others?
- How can I use computational thinking to code and program?
- How can I apply coding skills to program robots?

Enduring Understandings
- Students will understand how to use the principles of design and computational thinking to solve problems.
- Students will understand how technology, engineering, and design impacts society.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Unit Objectives
- Students will recognize the design process as an approach to solve problems
- Students will apply engineering design to solve problems
- Students will use computational thinking to code

Unit Topics
- Introduce the Engineering Design Process and practice this concept through challenges
- The 4C's - Critical Thinking, Communication, Collaboration, Creativity
- Coding skills - coding vocabulary - algorithm, sequence, loop, bug, debug, computer programming, etc
- Introduction to Robots - how to operate and conduct simple tasks

Assessments
Examples may include, but are not limited to the following:
- Formative: Observations, exit tickets, group/cooperative work, classwork
- Summative: Communicate steps to solve a problem, Project: final design challenge
- Benchmark: Discuss design techniques and decisions
- Alternative: Options may include graphic organizers, or additional teacher created assignments

K-2 Lesson Activities for Design Thinking

Grade Level	Suggested Literature	Suggested Activities
Kindergarten	**Books**	- Brainpop Jr. Videos - Engineering and Design Thinking - Conditionals 8.1.2.AP.1 Coding Platforms - Code.org, Kodable, Tynker - Storybook STEM - Hands - on materials - Legos, Brackitz, Knex, makerspace, robots, Keva Planks, 8.1.2.AP.2 Robot Suggestions - Code a Mouse; Bee Bot; Meeper Bots - Design a Puppet and have it tell a joke 8.1.2.AP.1; 8.2.2.NT.2 8.1.2.AP.3; Earth Day Activities - Wind sock 8.1.2.AP.1; 8.2.2.NT.2; 8.1.2.AP.3 Example Activity: 3 Little Pigs House - Design a house, test with a blow dryer, make improvements, and fix any problems
1st Grade		- Brainpop Jr. Videos - Engineering and Design Thinking - Coding - Loops, Conditionals 8.1.2.AP.1; 8.1.2.AP.2; Robot Suggestions - Code a Mouse, BeeBot, Meeper Bots 8.1.2.AP.1 Coding Platforms - Code.org, Kodable, Tynker - Design a Puppet and have it tell a joke 8.2.2.NT.2 Earth Day Activities - Wind Chime - Cup Stacking 8.2.2.NT.2 Example Activity: 3 Little Pigs House - Design a house, test with a blow dryer, make improvements, and fix any problems

| 2nd Grade | ● How to Code a Sandcastle
● How to Code a Rollercoaster | ● Brainpop Jr. Videos
  ○ Engineering and Design Thinking
  ○ Be a Scientist - Making and Testing Predictions
  ○ Loops, Conditional
● PebbleGo
  ○ Science & Engineering Method Category
    ■ Answers & Solutions
    ■ Asking Questions
    ■ Finding & Sharing Information
● Coding Platforms - Code.org, Kodable, Tynker
● 8.1.2.AP.2 Robot Suggestions - Ozobots, Dash & Dot
● 8.2.2.NT.2 Earth Day Activities: Create a Pinwheel and test with wind energy
● 8.2.2.NT.2 Example Activity: Build a Chair for Goldilocks using different types of paper, test with different size stuffed animals or objects, make improvement to hold all objects, test final product
● How to Code a Sandcastle - Kodable Beach Clean Up |

Wayne Township Public Schools

Unit of Study 3: Design Thinking
Grades 3-5
End of January-Mid March

Summary

In the Design Thinking unit, students in grades 3-5 will gain knowledge of how technology, engineering, and design can help them understand themselves and others. Students will learn how to apply computational thinking skills to code and program as well as recognize the design thinking process as an approach to solving problems. Students will also learn how to operate, program and navigate various robots.

Standard Numbers

NJSLS Computer Science & Design Thinking

Algorithms & Programming
- 8.1.5.AP.1: Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
- 8.1.5.AP.2: Create programs that use clearly named variables to store and modify data.
- 8.1.5.AP.3: Create programs that include sequences, events, loops, and conditionals.
- 8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development.
- 8.1.5.AP.5: Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.
- 8.1.5.AP.6: Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.

Engineering Design
- 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.
- 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.

Nature of Technology
- 8.2.5.NT.1: Troubleshoot a product that has stopped working and brainstorm ideas to correct the problem.
- 8.2.5.NT.2: Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries, and societies.
- 8.2.5.NT.3: Redesign an existing product for a different purpose in a collaborative team.
- 8.2.5.NT.4: Identify how improvement in the understanding of materials science impacts technologies.

NJSLS Career Readiness, Life Literacies, and Key Skills

Critical Thinking and Problem Solving
- 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

Technology Literacy
- 9.4.5.TL.4: Compare the common use of at least two different digital tools and identify the advantages and disadvantages of using each.
- 9.4.5.TL.5: Collaborate digitally to produce an artifact.

Career Readiness Practices
- CRP 4 Demonstrate creativity and innovation
- CRP 5 Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP 8 Use technology to enhance productivity, increase collaboration and communication effectively.

NJSLS English Language Arts

Reading Literature
- RL.3.1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RL.3.3. Describe the characters in a story (e.g., their traits,motivations, or feelings) and explain how their actions contribute to the sequence of events.
- RL.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL.4.2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- RL.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.
- RL.5.2. Determine the key details in a story, drama or poem to identify the theme and to summarize the text.

Speaking and Listening
- SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting.

Essential Questions
- How can knowledge of technology, engineering, and design help me understand myself and others?
- How can I use computational thinking to code and program?
- How can I apply coding skills to program robots?

Enduring Understandings
- Students will understand how to use the principles of design and computational thinking to solve problems.
- Students will understand how technology, engineering, and design impacts society.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Unit Objectives
- Students will use Technology, engineering, and design to help them understand themselves and others.
- Students will use computational thinking to code and program.
- Students will apply coding skills to program robots.

Unit Topics
- Introduction to Engineering and Design Thinking
- How does a design utilize different types of energy (concepts: forces, types of motion, types of energy)
- Circuitry - grade 4 & 5
- Coding - 3-5
- Introduction to Robotics grades 3-5

Assessments
Examples may include, but are not limited to the following:
- Formative: Observations, exit tickets, group/cooperative work, classwork
- Summative: Communicate steps to solve a problem, Project: final design challenge, Reflection (journal)
- Benchmark: Discuss design techniques and decisions
- Alternative: Options may include graphic organizers, or additional teacher created assignments

3-5 Lesson Activities for Design Thinking		
Grade Level	**Suggested Literature**	**Suggested Activities**
3rd Grade		- Brainpop Jr. - Engineering and Design Thinking - Forces Category - Push & Pulls; Simple Machines, Sink or Float, Gravity, Magnets - Energy Category - Energy Sources, Light, Sound - Loops, Conditionals - Design Challenges - Circle, Balloons, etc - Straw Rockets 8.2.5.ED.3 Knex, Legos, Strawbees 8.2.5.ED.4 Using limited or specific materials and constraints; Example: Marble Maze 8.1.5.AP.5 Debugging; code.org - building upon each level that move up in a game; conditionals - Robot Suggestions: Ozobots, Dash & Dot 8.2.5.NT.1 Calibrating a Robot 8.2.5.NT.2 How Robots and machines have replaced human workers Example: Lego Video; How Stuff Works Boards 8.2.5.NT.4 History and Evolution of Technology
4th Grade		- Brainpop Videos: - Coding - Binary, Function, Loops, Variables - Computational Thinking - Robots - Design Challenges - Circle, Balloons, etcReview circuitry concepts - Popsicle harmonica 8.2.5.ED.3 Knex, Legos, Strawbees 8.2.5.ED.4 Using limited or specific materials 8.1.5.AP.5 Debugging; code.org - building upon each level

		that move up in a game; conditionals ● constraints; Example: Weight challenge - create a bookshelf that will hold a certain number of books ● Review circuitry concepts learned in Science - Suggested materials: snap circuits, paper circuits, Bristle Bots, Makey Makey, Little Bits, Squishy Circuits; ● Robot Suggestions: Ozobots, Dash, Sphero ● 8.2.5.NT.1 Calibrating a Robot ● 8.2.5.NT.2 How Robots and machines have replaced human workers Example: Lego Video; How Stuff Works Boards ● 8.2.5.NT.4 History and Evolution of Technology

5th Grade		● Brainpop Videos:
		  ○ Coding - Binary, Function, Loops, Variables
		  ○ Computational Thinking
		  ○ 3D Printing
		  ○ Video Games
		  ○ Robots
		● Design Challenges - Circle, Balloons, etc
		● 8.2.5.ED.3 Knex, Legos, Strawbees
		● 8.2.5.ED.4 Using limited or specific materials
		● 8.2.5.ED.4 Using limited or specific materials
		● 8.1.5.AP.5 Debugging; code.org - building upon each level that move up in a game; conditionals
		● constraints; Example Keva Planks
		● Introduction to Tinkercad - 3D Printing
		● Review circuitry concepts learned in Science - Suggested materials: snap circuits, paper circuits, Bristle Bots, Makey Makey, Little Bits, Squishy Circuits
		● Robot Suggestions: Ozobots, Sphero, Mindstorm
		● 8.2.5.NT.1 Calibrating a Robot
		● 8.2.5.NT.2 How Robots and machines have replaced human workers Example: Lego Video; How Stuff Works Boards
		● 8.2.5.NT.4 History and Evolution of Technology

Wayne Township Public Schools

Unit of Study 4: Creativity and Innovation
Grades K-2
Mid March-June

Summary

In the Creativity and Innovation unit, students in grades K-2 will learn how to brainstorm and create new and innovative ideas. Students will develop creativity and innovation skills by collaborating with the diverse perspectives of others. Students will also identify and develop plans to effectively solve problems by taking intellectual risks and applying critical thinking skills.

Standard Numbers

NJSLS Computer Science & Design Thinking

Interaction of Technology and Humans
- 8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.

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 or reusing a product affects the local and global environment.

NJSLS Career Readiness, Life Literacies, and Key Skills

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

Creativity and Innovation
- 9.4.2.CI.1: Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
- 9.4.2.CI.2: Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).

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 (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).
- 9.4.2.CT.2: Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
- 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive).

Information and Media Literacy
- 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 (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).

Global and Cultural Awareness
- 9.4.2.GCA:1: Articulate the role of culture in everyday life by describing one's own culture and comparing it to the cultures of other individuals

Career Readiness Practices
- CRP 4 Demonstrate creativity and innovation.
- CRP 5 Untize critical thinking to make sense of problems and persevere in solving them.
- CPR 8 Use technology to enhance productivity, increase collaboration and communicate effectively.

NJSLS English Language Arts

Reading Literature
- RL.K.1. With prompting and support, ask and answer questions about key details in a text
- RL.K.2. With prompting and support, retell familiar stories, including key details.
- RL.1.3. Describe characters, settings, and major events in a story, using key details.
- RL.2.3. Describe how characters in a story respond to major events and challenges.

Speaking and Language
- SL.K.1.A. Follow agreed-upon rules for discussions (e.g., listening to others and taking turns speaking about the topics and texts under discussion). SL.1.1.A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.A. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion).
- SL.2.1.B. Build on others' talk in conversations by linking their comments to the remarks of others

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting

Essential Questions
- How can brainstorming create new and innovative ideas?
- How do I identify and develop a plan to effectively solve the problem?
- How can my knowledge of robots be applied to STREAM challenges and Makerspace activities to solve real world problems?

Enduring Understandings
- Students will utilize robotics and STREAM concepts to brainstorm, plan, and create innovative ideas to solve real world problems.

<u>Interdisciplinary Connections</u>
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

<u>Unit Objectives</u>
- Students will learn how to brainstorm and create new and innovative ideas.
- Students will identify and develop plans to find possible solutions to a problem.
- Students will apply their gained knowledge of robots to STREAM challenges and Makerspace activities to solve real world problems.

<u>Unit Topics</u>
- Identifying careers - architects and engineers
- Makerspace activities
- Engineering - Brainstorming and planning of building challenges to solve community problems
- Robotic challenges - applying skills learned in Design Thinking

<u>Assessments</u>
Examples may include, but are not limited to the following**:**
- Formative: Observations, exit tickets, group/cooperative work, classwork, questioning
- Summative: Communicate steps to solve a problem, Engineering Design
- Benchmark: Discuss design techniques and decisions
- Alternative: Options may include graphic organizers, or additional teacher created assignments

K-2 Lesson Activities for Creativity and Innovation

Grade Level	Suggested Literature	Suggested Activities
Kindergarten	● If I Built a Car ● The Bot That Scott Built ● The Most Magnificent Thing	● Create a Car using legos - attach to a robot to drive the car ● Robotics - Code a Mouse; Bee Bot; challenges Meeper Bot ● Brainpop Jr. Videos ○ Natural Resources
1st Grade	● If I Built A House ● The Bot That Scott Built ● The Most Magnificent Thing	● Brainpop Jr. Videos ○ Natural Resources ● Robotics - Code a Mouse; Bee Bot; Meeper Bot, Ozobots challenges

2nd Grade	● If I Build a School
	● Ada Twist, Scientist
	● Iggy Peck Architect
	● Made by Maxine
	● How to Code a Sandcastle
		● Brainpop Jr. Videos
		  ○ Natural Resources
		● 8.2.2.ITH.5; 9.4.2.CI.1; 9.4.2.CI.2 If I Build a School STEM activity - Plan and build a futuristic school
		● Robotics - Ozobots; Dash & Dot challenges
		● Earth Day - Wind Energy or Solar Power Energy
		  ○ Activity option - create a pinwheel. Observe and analyze wind energy

Wayne Township Public Schools

Unit of Study 4: Creativity and Innovation
Grades 3-5

Summary

In the Creativity and Innovation unit, students in grades 3-5 will learn how to brainstorm and create new and innovative ideas. Students will develop creativity and innovation skills by collaborating with the diverse perspectives of others. Students will also identify and develop plans to effectively solve problems by taking intellectual risks and applying critical thinking skills.

Standard Numbers

NJSLS Computer Science & Design Thinking

Effects of Technology on the Natural World
- 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.
- 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.

NJSLS Career Readiness, Life Literacies, and Key Skills

Career Awareness and Planning
- 9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes.

Creativity and Innovation
- 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).

Critical Thinking and Problem-Solving
- 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).

Global and Cultural Awareness
- 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view

Career Readiness Practices
- CRP 4 Demonstrate creativity and innovation.
- CRP 9 Work productively in teams while using cultural/global competence.

NJSLS English Language Arts
Reading Literature
- RL.3.1. Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- RL.3.3. Describe the characters in a story (e.g., their traits,motivations, or feelings) and explain how their actions contribute to the sequence of events.
- RL.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
- RL.4.2. Determine a theme of a story, drama, or poem from details in the text; summarize the text.
- RL.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.
- RL.5.2. Determine the key details in a story, drama or poem to identify the theme and to summarize the text.

Speaking and Listening
- SL.3.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly.
- SL.4.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grade 4 topics and texts, building on others' ideas and expressing their own clearly.
- SL.5.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 5 topics and texts, building on others' ideas and expressing their own clearly.

WIDA ELD Standards
- Standard 1: English language learners communicate for Social and Instructional purposes within the school setting

Essential Questions
- How can I collaborate with others with diverse perspectives to develop my creativity and innovation skills?
- How can taking intellectual risks solve problems effectively by gathering data, seeking resources, and applying critical thinking skills?
- How can my knowledge of robots be applied to STREAM challenges and activities to solve real world problems?

Enduring Understandings
- Students will understand how to brainstorm and implement new ideas through collaboration with diverse perspectives.
- Students will develop plans to effectively solve problems by taking intellectual risks and applying critical thinking skills to solve real world problems.

Interdisciplinary Connections
- Students will use reading comprehension skills to make sense of narrative stories.
- Students will talk with partners and in small groups to deepen their understanding of the text.

Objectives
- Students will collaborate with others with diverse perspectives to develop their creativity and innovation skills.
- Students will learn how to take intellectual risks to solve problems effectively by gathering data, seeking resources, and applying critical thinking skills.
- Students will apply their gained Robotic knowledge to STREAM challenges and activities to solve real world problems.

Unit Topics
- Identifying careers - inventors, engineers, computer programmers, architects, people in STEM
- STREAM challenges
- Engineering - Brainstorming and planning of building challenges to solve community problems
- Robotic challenges - applying skills learned in Design Thinking

Assessments
Examples may include, but are not limited to the following:
- Formative: Observations, exit tickets, group/cooperative work, classwork, questioning
- Summative: Communicate steps to solve a problem, Engineering Design
- Benchmark: Discuss design techniques and decisions
- Alternative: Options may include graphic organizers, or additional teacher created assignments

3-5 Lesson Activities for Creativity and Innovation

Grade Level	Suggested Literature	Suggested Activities
3rd Grade	- Twenty - One Elephants - Made by Maxine - The Backyard Build	Twenty - One Elephants - Build bridge and balance 21 Elephants
4th Grade	- Whoosh! - The Backyard Build - Grace Hopper	- Circuitry - Lightsaber - Game Based Programming - Bloxels/online platforms - Robotics - Sphero, Ozobots, Dash challenges
5th Grade	- Whoosh! - The Backyard Build - Just Like Rube Goldberg - Grace Hopper - If Sharks Disappeared	- Game Based Programming - Bloxels/online platforms - Robotics - Lego Mindstorm Challenges 8.2.5.ETW.5 3D printing challenges 8.2.5.ETW.5 If Sharks Disappeared -