MOORESTOWN TOWNSHIP PUBLIC SCHOOLS
MOORESTOWN, NEW JERSEY

Moorestown Elementary Schools
Arts & Technology: Technology

Technology & Challenge Enrichment
Grades K-3

Date: *August 7, 2023*
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Course Description and Fundamental Concepts

In this course, students will explore a variety of computer concepts with a STEAM focus. Students will use problem-solving skills to explore grade level technology Standards. Students will explore concepts including Computer skills, Digital Citizenship and Engineering Design skills. Students will be introduced to various STEAM concepts, including practical skills, report writing, and problem solving skills and applications. This will allow for flexibly advancing the learning of all students toward attainment of college and career-readiness standards.

Fundamental Concepts:
- Basic operations and concepts
- Software applications
- Social, ethical and human issues
- Beginning access to research tools
- Problem solving and decision making tools
- Digital Citizenship
- Engineering
- Coding

New Jersey Student Learning Standards (NJSLS)

Computer Science & Design Thinking (NJSLS 8)

8.1 COMPUTER SCIENCE

COMPUTING SYSTEMS (CS)

Standard Code	Core Idea	Performance Expectations
8.1.2.CS.1	Individuals use computing devices to perform a variety of tasks accurately and quickly. Computing devices interpret and follow the instructions they are given literally.	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	A computing system is composed of software and hardware.	Explain the functions of common software and hardware components of computing systems.
8.1.2.CS.3	Describing a problem is the first step toward finding a solution when computing systems do not work as expected.	Describe basic hardware and software problems using accurate terminology.
8.1.5.CS.1	Computing devices may be connected to other devices to form a system as a way to extend their capabilities.	Model how computing devices connect to other components to form a system.
8.1.5.CS.2	Software and hardware work together as a system to accomplish tasks (e.g., sending, receiving, processing, and storing units of information).	Model how computer software and hardware work together as a system to accomplish tasks.
8.1.5.CS.3	Shared features allow for common troubleshooting strategies that can be effective for many systems.	Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.

NETWORK AND THE INTERNET (NI)

Standard Code	Core Idea	Performance Expectations
8.1.2.NI.1	Computer networks can be used to connect individuals to other individuals, places, information, and ideas. The Internet enables individuals to connect with others worldwide.	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	Connecting devices to a network or the Internet provides great benefits, but care must be taken to use authentication measures, such as strong passwords, to protect devices and information from unauthorized access.	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.
8.1.5.NI.1	Information needs a physical or wireless path to travel to be sent and received.	Develop models that successfully transmit and receive information using both wired and wireless methods.
8.1.5.NI.2	Distinguishing between public and private information is important for safe and secure online interactions. Information can be protected using various security measures (i.e., physical and digital).	Describe physical and digital security measures for protecting sensitive personal information.
IMPACTS OF COMPUTING (IC)		
8.1.2.IC.1	Computing technology has positively and negatively changed the way individuals live and work (e.g., entertainment, communication, productivity tools).	Compare how individuals live and work before and after the implementation of new computing technology.
8.1.5.IC.1	The development and modification of computing technology is driven by individual's needs and wants and can affect individuals differently.	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 AND ANALYSIS (DA)		
8.1.2.DA.1	Individuals collect, use, and display data about individuals and the world around them.	Collect and present data, including climate change data, in various visual formats.
8.1.2.DA.2	Computers store data that can be retrieved later. Data can be copied, stored in multiple locations, and retrieved.	Store, copy, search, retrieve, modify, and delete data using a computing device.
8.1.2.DA.3	Data can be used to make predictions about the world.	Identify and describe patterns in data visualizations.
8.1.2.DA.4		Make predictions based on data using charts or graphs.

8.1.5.DA.1	Data can be organized, displayed, and presented to highlight relationships.	Collect, organize, and display data in order to highlight relationships or support a claim.
8.1.5.DA.2	The type of data being stored affects the storage requirements.	Compare the amount of storage space required for different types of data.
8.1.5.DA.3	Individuals can select, organize, and transform data into different visual representations and communicate insights gained from the data.	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	Many factors influence the accuracy of inferences and predictions.	Propose cause and effect relationships, predict outcomes, or communicate ideas using data.
ALGORITHMS AND PROGRAMMING (AP)		
8.1.2.AP.1	Individuals develop and follow directions as part of daily life. A sequence of steps can be expressed as an algorithm that a computer can process	Model daily processes by creating and following algorithms to complete tasks.
8.1.2.AP.2	Real world information can be stored and manipulated in programs as data (e.g., numbers, words, colors, images).	Model the way programs store and manipulate data by using numbers or other symbols to represent information.
8.1.2.AP.3	Computers follow precise sequences of steps that automate tasks.	Create programs with sequences and simple loops to accomplish tasks.
8.1.2.AP.4	Complex tasks can be broken down into simpler instructions, some of which can be broken down even further.	Break down a task into a sequence of steps.
8.1.2.AP.5	People work together to develop programs for a purpose, such as expressing ideas or addressing problems.	Describe a program's sequence of events, goals, and expected outcomes.
8.1.2.AP.6	The development of a program involves identifying a sequence of events, goals, and expected outcomes, and addressing errors (when necessary).	Debug errors in an algorithm or program that includes sequences and simple loops.
8.1.5.AP.1	Different algorithms can achieve the same result. Some algorithms are more appropriate for a specific use than others.	Compare and refine multiple algorithms for the same task and determine which is the most appropriate.

8.1.5.AP.2	Programming languages provide variables, which are used to store and modify data.	Create programs that use clearly named variables to store and modify data.
8.1.5.AP.3	A variety of control structures are used to change the flow of program execution (e.g., sequences, events, loops, conditionals).	Create programs that include sequences, events, loops, and conditionals.
8.1.5.AP.4	Programs can be broken down into smaller parts to facilitate their design, implementation, and review. Programs can also be created by incorporating smaller portions of programs that already exist.	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	Individuals develop programs using an iterative process involving design, implementation, testing, and review.	Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.

8.2 DESIGN THINKING

ENGINEERING DESIGN (ED)

8.2.2.ED.1	Engineering design is a creative process for meeting human needs or wants that can result in multiple solutions.	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	Limitations (constraints) must be considered when engineering designs.	Identify constraints and their role in the engineering design process.
8.2.5.ED.1	Engineering design is a systematic and creative process of communicating and collaborating to meet a design challenge. Often, several design solutions exist, each better in some way than the others.	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	Engineering design requirements include desired features and limitations that need to be considered.	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.

INTERACTION OF TECHNOLOGY AND HUMANS (ITH)		
8.2.2.ITH.1	Human needs and desires determine which new tools are developed.	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.
8.2.2.ITH.3	Technology has changed the way people live and work. Various tools can improve daily tasks and quality of life.	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 intended impact of the solution.
8.2.5.ITH.1	Societal needs and wants determine which new tools are developed to address real-world problems.	Explain how societal needs and wants influence the development and function of a product and a system.
8.2.5.ITH.2	A new tool may have favorable or unfavorable results as well as both positive and negative effects on society. Technology spurs new businesses and careers.	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.

NATURE OF TECHNOLOGY (NT)		
8.2.2.NT.1	Innovation and the improvement of existing technology involves creative thinking.	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.
8.2.5.NT.1	Technology innovation and improvement may be influenced by a variety of factors.

Engineers create and modify technologies to meet people's needs and wants; scientists ask questions about the natural world. | 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.

EFFECTS OF TECHNOLOGY ON THE NATURAL WORLD (ETW)		
8.2.2.ETW.1	The use of technology developed for the human designed world can affect the environment, including land, water, air, plants, and animals.

Technologies that use natural sources can have negative effects on the environment, its quality, and inhabitants.

Reusing and recycling materials can save money while preserving natural resources and avoiding damage to the environment. | 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.
8.2.5.ETW.1	The technology developed for the human designed world can have unintended consequences for the environment.

Technology must be continually developed and made more efficient to reduce the need for non-renewable resources. | 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.
ETHICS AND CULTURE (EC)		
8.2.2.EC.1	The availability of technology for essential tasks varies in different parts of the world.	Identify and compare technology used in different schools, communities, regions, and parts of the world.
8.2.5.EC.1	Technological choices and opportunities vary due to factors such as differences in economic resources, location, and cultural values.	Analyze how technology has contributed to or reduced inequities in local and global communities and determine its short- and long-term effects.

Gifted and Talented Education (National Association for Gifted Children Standards)

Unit	Standard #	Standard Description
Gr 2 - Unit 3 Gr 3 - Units 1, 2, 3	NAGC 1.1	*Self-Understanding.* Students with gifts and talents demonstrate self-knowledge with respect to their interests, strengths, identities, and needs in socio-emotional development and in intellectual, academic, creative, leadership, and artistic domains.
Gr 2 - Unit 3 Gr 3 - Units 1, 2, 3	1.2	*Self-Understanding.* Students with gifts and talents possess a developmentally appropriate understanding of how they learn and grow; they recognize the influences of their beliefs, traditions, and values on their learning and behavior.
Gr 2 - Unit 3 Gr 3 - Units 1, 2, 3	1.3	*Self-Understanding.* Students with gifts and talents demonstrate understanding of and respect for similarities and differences between themselves and their peer group and others in the general population.
Gr 2 - Unit 3 Gr 3 - Units 1, 2, 3	1.4	*Awareness of Needs.* Students with gifts and talents access resources from the community to support cognitive and affective needs, including social interactions with others having similar interests and abilities or experiences, including same-age peers and mentors or experts.
Gr 2 - Units 2, 3 Gr 3 - Units 1, 2, 3	1.5	*Awareness of Needs.* Students' families and communities understand similarities and differences with respect to the development and characteristics of advanced and typical learners and support students with gifts and talents' needs.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	1.6	*Cognitive and Affective Growth.* Students with gifts and talents benefit from meaningful and challenging learning activities addressing their unique characteristics and needs.

Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	1.7	*Cognitive and Affective Growth.* Students with gifts and talents recognize their preferred approaches to learning and expand their repertoire.
Gr 3 - Units 2, 3	1.8	*Cognitive and Affective Growth.* Students with gifts and talents identify future career goals that match their talents and abilities and resources needed to meet those goals (e.g., higher education opportunities, mentors, financial support).
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.1	*Identification.* All students in grades PK-12 have equal access to a comprehensive assessment system that allows them to demonstrate diverse characteristics and behaviors that are associated with giftedness.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.2	*Identification.* Each student reveals his or her exceptionalities or potential through assessment evidence so that appropriate instructional accommodations and modifications can be provided.
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.3	*Identification.* Students with identified needs represent diverse backgrounds and reflect the total student population of the district.
Gr 1 - Unit 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.4	*Learning Progress and Outcomes.* Students with gifts and talents demonstrate advanced and complex learning as a result of using multiple, appropriate, and ongoing assessments.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.5	*Evaluation of Programming.* Students identified with gifts and talents demonstrate important learning progress as a result of programming and services.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	2.6	*Evaluation of Programming.* Students identified with gifts and talents have increased access and they show significant learning progress as a result of improving components of gifted education programming.

Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	3.1	*Curriculum Planning.* Students with gifts and talents demonstrate growth commensurate with aptitude during the school year.
Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	3.2	*Talent Development.* Students with gifts and talents become more competent in multiple talent areas and across dimensions of learning.
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	3.3	*Talent Development.* Students with gifts and talents develop their abilities in their domain of talent and/or area of interest.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	3.4	*Instructional Strategies.* Students with gifts and talents become independent investigators.
Gr 3 - Units 1, 2, 3	3.5	*Culturally Relevant Curriculum.* Students with gifts and talents develop knowledge and skills for living and being productive in a multicultural, diverse, and global society.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	3.6	*Resources.* Students with gifts and talents benefit from gifted education programming that provides a variety of high quality resources and materials.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	4.1	*Personal Competence.* Students with gifts and talents demonstrate growth in personal competence and dispositions for exceptional academic and creative productivity. These include self-awareness, self-advocacy, self-efficacy, confidence, motivation, resilience, independence, curiosity, and risk taking.
Gr 1 - Units 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	4.2	*Social Competence.* Students with gifts and talents develop social competence manifested in positive peer relationships and social interactions.

Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	4.3	*Leadership.* Students with gifts and talents demonstrate personal and social responsibility and leadership skills.
Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	4.4	*Cultural Competence.* Students with gifts and talents value their own and others' language, heritage, and circumstance. They possess skills in communicating, teaming, and collaborating with diverse individuals and across diverse groups. 1 They use positive strategies to address social issues, including discrimination and stereotyping.
Gr 3 - Units 1, 2, 3	4.5	*Communication Competence.* Students with gifts and talents develop competence in interpersonal and technical communication skills. They demonstrate advanced oral and written skills, balanced biliteracy or multiliteracy, and creative expression. They display fluency with technologies that support effective communication.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.1	*Variety of Programming.* Students with gifts and talents participate in a variety of evidence-based programming options that enhance performance in cognitive and affective areas.
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.2	*Coordinated Services.* Students with gifts and talents demonstrate progress as a result of the shared commitment and coordinated services of gifted education, general education, special education, and related professional services, such as school counselors, school psychologists, and social workers.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.3	*Collaboration.* Students with gifts and talents' learning is enhanced by regular collaboration among families, community, and the school.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.4	*Resources.* Students with gifts and talents participate in gifted education programming that is adequately funded to meet student needs and program goals.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.5	*Comprehensiveness.* Students with gifts and talents develop their potential through comprehensive, aligned programming and services.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	5.6	*Policies and Procedures.* Students with gifts and talents participate in regular and gifted education programs that are guided by clear policies and procedures that provide for their advanced learning needs (e.g., early entrance, acceleration, credit in lieu of enrollment).

Gr 3 - Units 1, 2, 3	5.7	*Career Pathways.* Students with gifts and talents identify future career goals and the talent development pathways to reach those goals.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	6.1	*Talent Development.* Students develop their talents and gifts as a result of interacting with educators who meet the national teacher preparation standards in gifted education.
Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	6.2	*Socio-emotional Development.* Students with gifts and talents develop socially and emotionally as a result of educators who have participated in professional development aligned with national standards in gifted education and National Staff Development Standards.
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	6.3	*Lifelong Learners.* Students develop their gifts and talents as a result of educators who are life-long learners, participating in ongoing professional development and continuing education opportunities.
Gr K - Units 1, 2 Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	6.4	*Ethics.* Students develop their gifts and talents as a result of educators who are ethical in their practices.

Career Awareness, Exploration, Preparation, and Training (Standard 9.2)
List appropriate units below for which standards will be addressed

By Grade 3		
Unit Addressed	**Core Idea**	**Standard / Description**
Gr 1 - Unit 3 Gr 2 - Unit 3 Gr 3 - Units 2, 3	Different types of jobs require different knowledge and skills.	*9.2.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job.*
Gr 3 - Unit 3	Income is received from work in different ways including regular payments, tips, commissions, and benefits.	*9.2.2.CAP.2: Explain why employers are willing to pay individuals to work.*

Gr 2 - Unit 3 Gr 3 - Unit 3	There are benefits and drawbacks to being an entrepreneur.	*9.2.2.CAP.3: Define entrepreneurship and social entrepreneurship.* *9.2.2.CAP.4: List the potential rewards and risks to starting a business.*

Life Literacies and Key Skills ([Standard 9.4](#))

By Grade 3		
Unit Addressed	**Core Idea**	**Standard / Description**
Gr 1 - Units 2, 3 Gr 2 - Units 1, 2, 3	**Creativity and Innovation**: Brainstorming can create new, innovative ideas.	*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).*
Gr 1 - Unit 3 Gr 2 - Units 2, 3	**Critical Thinking and Problem-solving:** Critical thinkers must first identify a problem then develop a plan to address it to effectively solve the problem.	*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).*
Gr 1 - Units 2, 3 Gr 2 - Units 1, 2, 3	**Digital Citizenship:** Digital artifacts can be owned by individuals or organizations.	*9.4.2.DC.1: Explain differences between ownership and sharing of information.* *9.4.2.DC.2: Explain the importance of respecting digital content of others.*
Gr 1 - Unit 1 Gr 2 - Units 1, 2	**Digital Citizenship:** Individuals should practice safe behaviors when using the Internet.	*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*
Gr 2 - Unit 2	**Digital Citizenship:** An individual's digital footprint reflects the various actions an individual makes online, both positive and negative.	*9.4.2.DC.5: Explain what a digital footprint is and how it is created.*

Gr 1 - Unit 2 Gr 2 - Units 1, 2	**Digital Citizenship:** Digital communities allow for social interactions that can result in positive or negative outcomes.	*9.4.2.DC.6: Identify respectful and responsible ways to communicate in digital environments.*
Gr 1 - Unit 3 Gr 2 - Unit 3	**Digital Citizenship:** Young people can have a positive impact on the natural world in the fight against climate change.	*9.4.2.DC.7: Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).*
Gr 2 - Unit 2	**Global and Cultural Awareness:** Individuals from different cultures may have different points of view and experiences.	*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 (e.g., 1.5.2.C2a, 7.1.NL.IPERS.5, 7.1.NL.IPERS.6).*
Gr 2 - Unit 2	**Information and Media Literacy:** Digital tools and media resources provide access to vast stores of information that can be searched	*9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource*
Gr 2 - Unit 3	**Information and Media Literacy:** Digital tools can be used to display data in various ways.	*9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).*
Gr 2 - Unit 2	**Information and Media Literacy:** A variety of diverse sources, contexts, disciplines, and cultures provide valuable and necessary information that can be used for different purposes.	*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).*
Gr 1 - Unit 2 Gr 2 - Unit 2	**Information and Media Literacy:** Information is shared or conveyed in a variety of formats and sources.	*9.4.2.IML.4: Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic) (e.g., 2.2.2.MSC.5, RL.2.9).*
Gr 1 - Units 1, 2 Gr 2 - Units 1, 2	**Technology Literacy:** Digital tools have a purpose.	*9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool (e.g., 8.2.2.ED.1).* *9.4.2.TL.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 (e.g., SL.2.5.).
Gr 2 - Unit 2	**Technology Literacy:** Collaboration can simplify the work an individual has to do and sometimes produce a better product	9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

Interdisciplinary Connections ([2020 NJSLS](#))

Unit Addressed	Content / Standard #	Standard Description
K - 1, 2, 3 Gr1 - 1, 2, 3 Gr2 - 1, 2, 3 Gr3 - 1, 2, 3	**R1**	*Read closely to determine what the text says explicitly and to make logical inferences and relevant connections from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.*
Gr3 - 2, 4	**R2**	*Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.*
K - 1, 2, 3 Gr1 - 1, 2, 3 Gr2 - 1, 2, 3 Gr3 - 1, 2, 3, 4	**R4**	*Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.*
Gr1 - 2 Gr2 - 2 Gr3 - 2, 4	**R5**	*Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.*
Gr1 - 2 Gr2 - 2 Gr3 - 2, 4	**R6**	*Assess how point of view or purpose shapes the content and style of a text.*
K - 1, 2, 3 Gr1 - 1, 2, 3 Gr2- 1, 2, 3 Gr3 - 1, 2, 3, 4	**R7**	*Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.*
Gr3 - 2, 4	**R8**	*Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.*

Gr2 - 2 Gr3 - 2, 4	**R10**	*Read and comprehend complex literary and informational texts independently and proficiently with scaffolding as needed.*
Gr1 - 2 Gr2 - 2 Gr3 - 2	**6.1.4.A.10**	*Describe how the actions of Dr. Martin Luther King, Jr., and other civil rights leaders served as catalysts for social change and inspired social activism in subsequent generations.*

Visual & Performing Arts Integration (Standard 1)

List appropriate units below for which standards (1.1 through 1.5) may be addressed

Unit Addressed	Artistic Process	Anchor Standard
Gr 1 - Units 2, 3 Gr 2 - Unit 1, 2, 3 Gr 3 - Unit 1, 2	**Creating**	*Anchor Standard 1: Generating and conceptualizing ideas.* *Anchor Standard 2: Organizing and developing ideas.* *Anchor Standard 3: Refining and completing products.*
Gr 1 - Units 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Unit 2	**Connecting**	*Anchor Standard 10: Synthesizing and relating knowledge and personal experiences to create products.* *Anchor Standard 11: Relating artistic ideas and works within societal, cultural, and historical contexts to deepen understanding.*
Gr 1 - Units 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	**Performing/ Presenting/ Producing**	*Anchor Standard 4: Selecting, analyzing, and interpreting work.* *Anchor Standard 5: Developing and refining techniques and models or steps needed to create products.* *Anchor Standard 6: Conveying meaning through art.*
Gr 1 - Units 1, 2, 3 Gr 2 - Units 1, 2, 3 Gr 3 - Units 1, 2, 3	**Responding**	*Anchor Standard 7: Perceiving and analyzing products.* *Anchor Standard 8: Applying criteria to evaluate products.* *Anchor Standard 9: Interpreting intent and meaning.*

Pacing Guide (All Dates are approximate based on the school calendar)

GRADE K

Unit/ Topic	Month (w/Approx number of Teaching Days)
Simple design challenges	**November** **(~2 days)**
Simple design challenges	**December** **(~2 days)**
Parts of the computer **How to hold and use the mouse**	**January** **(~2 days)**
Parts of the computer **How to hold and use the mouse**	**February** **(~2 days)**
Parts of the computer **How to use a keyboard**	**March** **(~2 days)**
Parts of the computer **How to use a keyboard**	**April** **(~1 days)**
Parts of the computer **How to use a keyboard**	**May** **(~2 days)**
How to use a keyboard **Restarting**	**June** **(~1 days)**

GRADE 1

Unit/ Topic	Month (w/Approx number of Teaching Days)
Usernames and Passwords	**September** **(~3 days)**
"Special" keys on the keyboard **Formatting Type**	**October** **(~4 days)**
Formatting Type **Copy/Cut and Paste**	**November** **(~4 days)**
Copy/Cut and Paste **Digital Design and Storytelling**	**December** **(~3 days)**
Digital Design and Storytelling **Intro to Coding**	**January** **(~4 days)**
Intro to Coding	**February** **(~4 days)**
Engineering Design Process (EDP)	**March** **(~4 days)**
Engineering Design Process (EDP)	**April** **(~3 days)**
Engineering Design Process (EDP)	**May** **(~4 days)**
Engineering Design Process (EDP)	**June** **(~3 days)**

GRADE 2

Unit/ Topic	Month (w/Approx number of Teaching Days)
Review proper use of digital tools and parts of the computer Cyber Safety	September (~3 days)
Intro to Keyboarding Intro to Google Suite	October (~4 days)
Keyboarding Google Suite Intro to Digital Design	November (~4 days)
Keyboarding Digital Design Intro to Coding	December (~3 days)
Keyboarding Digital Design Coding	January (~4 days)
Keyboarding Coding Digital Design Intro to Animation	February (~4 days)
Animation Story Creation Online research project	March (~4 days)
Story Creation Online research Project MindMapping/graphic organizer software Multimedia/Digital Storytelling project	April (~3 days)
Engineering Design Process (EDP)	May (~4 days)
Engineering Design Process (EDP)	June (~3 days)

GRADE 3

Unit/ Topic	Month (w/Approx number of Teaching Days)
Engineering Design Process (EDP) **Forces**	**September** (~3 days)
Engineering Design Process (EDP) **Forces**	**October** (~4 days)
Engineering Design Process (EDP) **Forces**	**November** (~4 days)
Digital Citizenship **Keyboarding**	**December** (~3 days)
The Internet **Keyboarding**	**January** (~4 days)
Internet Research **Keyboarding**	**February** (~4 days)
Artificial Intelligence (AI)	**March** (~4 days)
Coding	**April** (~3 days)
Coding **Robotics**	**May** (~4 days)
Coding **Robotics**	**June** (~3 days)

GRADE K

Unit Name: GRADE K UNIT 1 - SIMPLE DESIGN CHALLENGES
Learning Goals: What do I want my students to learn?
Standards
NJSLS - 8.2.2.ED.1-4 *NJSLS - Career Awareness, Exploration, Preparation, and Training* *NJSLS - Life Literacies and Key Skills* *NJSLS - Interdisciplinary Standards* *NJSLS- Gifted and Talented Education*
Fundamental Concepts / Big Ideas
● What should students learn to help them be more effective problem solvers? ● How will students learn to work as part of a team? ● How will students learn to overcome challenges, obstacles, and barriers?
Learning Objectives
Students will be able to… ● Communicate the function of a product or device. ● Collaborate to solve a simple problem, or to illustrate how to build a product using the design process. ● Select and use appropriate tools and materials to build a product using the design process. ● Identify constraints and their role in the engineering design process.

Unit Name: GRADE K UNIT 2 - BASIC COMPUTER SKILLS

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.2.CS.1-3
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What hardware will students learn to use?
- What tasks will students associate with specific hardware?
- How will students identify and overcome a problem with hardware?
- How will students recognize the difference between a hardware problem and their misuse of that hardware?

Learning Objectives

Students will be able to…
- Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
- Explain the functions of common software and hardware components of computing systems.
- Describe basic hardware and software problems using accurate terminology.

GRADE 1

Unit Name: GRADE 1 UNIT 1 - BASIC COMPUTER SKILLS
Learning Goals: What do I want my students to learn?
Standards
NJSLS - 8.1.2.CS.1-3, 8.1.2.NI.3-4, 8.1.2.IC.1, 8.1.2.DA.2   *NJSLS - Career Awareness, Exploration, Preparation, and Training*   *NJSLS - Life Literacies and Key Skills*   *NJSLS - Interdisciplinary Standards*   *NJSLS- Gifted and Talented Education*
Fundamental Concepts / Big Ideas
● What digital technology vocabulary should students learn?   ● What should students learn with regards to using a mouse? About using a keyboard?   ● What should students learn with regards to digital privacy and security?   ● What aspects of word processing and type formatting should the students be prepared to utilize?   ● How will students preserve their work, edit it, and access it later?
Learning Objectives
Students will be able to…   ● Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.   ● Explain the functions of common software and hardware components of computing systems.   ● Describe basic hardware and software problems using accurate terminology.   ● Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.   ● Explain why access to devices need to be secured.   ● Compare how individuals live and work before and after the implementation of new computing technology.   ● Store, copy, search, retrieve, modify, and delete data using a computing device.

Unit Name: GRADE 1 UNIT 2 - COMPUTER SKILLS + CODING

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.2.CS.1-3, 8.1.2.NI.3-4, 8.1.2.IC.1, 8.1.2.DA.2, 8.1.2.AP.1-6
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What computer operations should students learn to help make them more efficient?
- How can students use technology to tell stories or convey ideas?
- What can students learn to enhance their digital creations?
- What should students learn with regards to navigating a digital environment?
- What should students understand with regards to their ability to control how a computer works?

Learning Objectives

Students will be able to…
- Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
- Explain the functions of common software and hardware components of computing systems.
- Describe basic hardware and software problems using accurate terminology.
- Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.
- Explain why access to devices need to be secured.
- Compare how individuals live and work before and after the implementation of new computing technology.
- Store, copy, search, retrieve, modify, and delete data using a computing device.
- Model daily processes by creating and following algorithms to complete tasks.
- Model the way programs store and manipulate data by using numbers or other symbols to represent information.
- Create programs with sequences and simple loops to accomplish tasks.
- Break down a task into a sequence of steps.
- Describe a program's sequence of events, goals, and expected outcomes.
- Debug errors in an algorithm or program that includes sequences and simple loops.

Unit Name: GRADE 1 UNIT 3 - DESIGN THINKING + ENGINEERING

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.2.2.ED.1-4, 8.2.2.ITH.1-3, 8.2.2.ITH.5, 8.2.2.ETW.1-4, 8.2.2.EC.1
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What should students learn to help them be more effective problem solvers?
- How will students learn to work as part of a team?
- How will students learn to overcome challenges, obstacles, and barriers?
- What will students learn about creating a product and the reasons for doing so?
- How will students see the impact of product creation on their community?
- How will students identify needs for innovation in their community?
- What will students learn about using specific tools?
- What will students learn about recycling and reusing materials?

Learning Objectives

Students will be able to…
- Communicate the function of a product or device.
- Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- Select and use appropriate tools and materials to build a product using the design process.
- Identify constraints and their role in the engineering design process.
- Identify products that are designed to meet human wants or needs.
- Explain the purpose of a product and its value.
- Identify how technology impacts or improves life.
- Identify how various tools reduce work and improve daily tasks.
- Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.
- Classify products as resulting from nature or produced as a result of technology.
- Identify the natural resources needed to create a product.
- Describe or model the system used for recycling technology.
- Explain how the disposal of or reusing a product affects the local and global environment.
- Identify and compare technology used in different schools, communities, regions, and parts of the world.

GRADE 2

Unit Name: GRADE 2 UNIT 1 - BASIC COMPUTER SKILLS

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.2.CS.1-3, 8.1.2.NI.3-4, 8.1.2.IC.1, 8.1.2.DA.2
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What digital technology vocabulary should students learn?
- What should students learn with regards to using a mouse?
- What should students learn about the keyboard and home row
- What should students learn with regards to digital design?
- What should students learn with regards to digital privacy and security?
- What aspects of word processing and type formatting should the students be prepared to utilize?
- How will students preserve their work, edit it, and access it later?

Learning Objectives

Students will be able to…
- Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
- Explain the functions of common software and hardware components of computing systems.
- Describe basic hardware and software problems using accurate terminology.
- Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.
- Explain why access to devices need to be secured.
- Compare how individuals live and work before and after the implementation of new computing technology.
- Store, copy, search, retrieve, modify, and delete data using a computing device.
- Understand and become comfortable typing using the home row.
- Use digital tools for graphic design.

Unit Name: GRADE 2 UNIT 2 - COMPUTER SKILLS + CODING

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.2.CS.1-3, 8.1.2.NI.1-4, 8.1.2.IC.1, 8.1.2.DA.2, 8.1.2.AP.1-6,
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What will students learn with regards to digital citizenship?
- How will students learn proper, responsible, safe, and acceptable digital behavior?
- What will students learn about their ability to control and modify a computer's behavior?
- How will students use computer code to create a digital product?
- What digital tools will students learn about to help them understand how to navigate the Internet?
- What will students learn to help them find reliable information on the Internet?

Learning Objectives

Students will be able to…
- Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
- Explain the functions of common software and hardware components of computing systems.
- Describe basic hardware and software problems using accurate terminology.
- Model and describe how individuals use computers to connect to other individuals, places, information, and ideas through a network.
- Describe how the Internet enables individuals to connect with others worldwide.
- Create a password that secures access to a device. Explain why it is important to create unique passwords that are not shared with others.
- Explain why access to devices need to be secured.
- Compare how individuals live and work before and after the implementation of new computing technology.
- Store, copy, search, retrieve, modify, and delete data using a computing device.
- Model daily processes by creating and following algorithms to complete tasks.
- Model the way programs store and manipulate data by using numbers or other symbols to represent information.
- Create programs with sequences and simple loops to accomplish tasks.
- Break down a task into a sequence of steps.
- Describe a program's sequence of events, goals, and expected outcomes.
- Debug errors in an algorithm or program that includes sequences and simple loops.

Unit Name: GRADE 2 UNIT 3 - DESIGN THINKING + ENGINEERING

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.2.DA.1, 8.1.2.DA.2-3, 8.2.2.ED.1-4, 8.2.2.ITH.1-5, 8.2.2.NT.1-2, 8.2.2.ETW.1-4, 8.2.2.EC.1
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What will students learn to make them stronger innovators and problem solvers?
- How will students identify and determine what products need to be developed or improved?
- How will students learn to overcome limitations and obstacles when developing solutions to problems?
- What will students learn about each of the steps in the Engineering Design Process (EDP)?
- How will students identify strengths/weaknesses of a product and use that information for further innovation?
- How will students consider positive and negative impacts (environmental, societal, etc.) of products as they develop them?
- How will students learn to recycle and repurpose materials?

Learning Objectives

Students will be able to…
- Collect and present data, including climate change data, in various visual formats.
- Identify and describe patterns in data visualizations.
- Make predictions based on data using charts or graphs.
- Communicate the function of a product or device.
- Collaborate to solve a simple problem, or to illustrate how to build a product using the design process.
- Select and use appropriate tools and materials to build a product using the design process.
- Identify constraints and their role in the engineering design process.
- Identify products that are designed to meet human wants or needs.
- Explain the purpose of a product and its value.
- Identify how technology impacts or improves life.
- Identify how various tools reduce work and improve daily tasks.
- Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.
- Model and explain how a product works after taking it apart, identifying the relationship of each part, and putting it back together.
- Brainstorm how to build a product, improve a designed product, fix a product that has stopped working, or solve a simple problem.
- Classify products as resulting from nature or produced as a result of technology.
- Identify the natural resources needed to create a product.
- Describe or model the system used for recycling technology.

- Explain how the disposal of or reusing a product affects the local and global environment.
- Identify and compare technology used in different schools, communities, regions, and parts of the world.

GRADE 3

Unit Name: GRADE 3 UNIT 1 - DESIGN THINKING + ENGINEERING

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.2.5.ED.1-6, 8.2.5.ITH.1-4, 8.2.5.NT.2, 8.2.5.NT.4, 8.2.5.ETW.1, 8.2.5.ETW.4-5
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What will students learn to make them stronger innovators and problem solvers?
- How will students identify and determine what products need to be developed or improved?
- How will students learn to overcome limitations and obstacles when developing solutions to problems?
- What will students learn about each of the steps in the Engineering Design Process (EDP)?
- How will students identify strengths/weaknesses of a product and use that information for further innovation?
- How will students consider positive and negative impacts (environmental, societal, etc.) of products as they develop them?
- How will students learn to recycle and repurpose materials?

Learning Objectives

Students will be able to…
- Explain the functions of a system and its subsystems.
- 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.
- Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.
- Explain factors that influence the development and function of products and systems (e.g., resources, criteria, desired features, constraints).
- Describe how specifications and limitations impact the engineering design process.
- Evaluate and test alternative solutions to a problem using the constraints and tradeoffs identified in the design process.
- Explain how societal needs and wants influence the development and function of a product and a system.
- Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.
- Analyze the effectiveness of a new product or system and identify the positive and/or negative consequences resulting from its use.
- Describe a technology/tool that has made the way people live easier or has led to a new business or career.
- Identify new technologies resulting from the demands, values, and interests of individuals, businesses, industries, and societies.
- Identify how improvement in the understanding of materials science impacts technologies.

- Describe how resources such as material, energy, information, time, tools, people, and capital are used in products or systems.
- Explain the impact that resources, such as energy and materials used to develop technology, have on the environment.
- 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.

Unit Name: GRADE 3 UNIT 2 - COMPUTER SKILLS REVIEW

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.5.CS.1-3, 8.1.5.NI.1-2, 8.1.5.IC.1
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What will students learn with regards to digital citizenship?
- How will students learn proper, responsible, safe, and acceptable digital behavior?
- How will students learn about the Internet and how it works?
- What digital tools will students learn about to help them understand how to navigate the Internet?
- What will students learn to help them find reliable information on the Internet?
- How will students research specific topics in a digital environment?
- What additional skills will students develop to help them be more efficient, 21st Century learners?

Learning Objectives

Students will be able to…
- Model how computing devices connect to other components to form a system.
- Model how computer software and hardware work together as a system to accomplish tasks.
- Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
- Develop models that successfully transmit and receive information using both wired
- and wireless methods.
- Describe physical and digital security measures for protecting sensitive personal information.
- Identify computing technologies that have impacted how individuals live and work and describe the factors that influenced the changes.

Unit Name: GRADE 3 UNIT 3 - CODING + ROBOTICS

Learning Goals: What do I want my students to learn?

Standards

NJSLS - 8.1.5.CS.1-3, 8.1.5.NI.1, 8.1.5.AP.1-6, 8.2.5.ITH.1-4
NJSLS - Career Awareness, Exploration, Preparation, and Training
NJSLS - Life Literacies and Key Skills
NJSLS - Interdisciplinary Standards
NJSLS- Gifted and Talented Education

Fundamental Concepts / Big Ideas

- What will students learn with regards to digital citizenship?
- How will students learn proper, responsible, safe, and acceptable digital behavior?
- What will students learn about their ability to control and modify a computer's behavior?
- How will students use computer code to create a digital product?
- How will students develop their ability to identify and correct errors in computer code?
- How will students identify a need for a digital product?
- What will students learn to help them recognize potential benefits and consequences of certain tech creations?
- What additional skills will students develop to help them be more efficient, 21st Century learners?

Learning Objectives

Students will be able to…
- Model how computing devices connect to other components to form a system.
- Model how computer software and hardware work together as a system to accomplish tasks.
- Identify potential solutions for simple hardware and software problems using common troubleshooting strategies.
- Develop models that successfully transmit and receive information using both wired
- and wireless methods.
- Compare and refine multiple algorithms for the same task and determine which is the most appropriate.
- Create programs that use clearly named variables to store and modify data.
- Create programs that include sequences, events, loops, and conditionals.
- Break down problems into smaller, manageable sub-problems to facilitate program development.
- Modify, remix, or incorporate pieces of existing programs into one's own work to add additional features or create a new program.
- Develop programs using an iterative process, implement the program design, and test the program to ensure it works as intended.
- Explain how societal needs and wants influence the development and function of a product and a system.
- Evaluate how well a new tool has met its intended purpose and identify any shortcomings it might have.
- Analyze the effectiveness of a new product or system and identify the positive and/or negative consequences resulting from its use.
- Describe a technology/tool that has made the way people live easier or has led to a new business or career.

Please contact the Content Supervisor for any questions.