2020 Computer Science, Design Thinking, Career Readiness, Life Literacies, and Key Skills Standards
2022 mandated implementation date, K-2 Board Approved August 22, 2021 and 3-8 Board Approved August 24, 2022

	Unit 1 12 Weeks	Unit 2 8 Weeks	Unit 3 13 Weeks	Unit 4
Grade K	**Introduction to the Media Center and Computing Systems** In this unit, students will be introduced to the school media center and computing systems. Students will learn the layout of the media center and media center procedures. Students will also learn about computing systems and technology self care.	**The Story** In this unit, students will focus on understanding the parts of a book. They will also be introduced to the basic elements of a story-a beginning, middle, and end. Students will use a digital storyboard to create a story of their own.	**Media Genres: Fiction/NonFiction & Authors/Illustrators** In this unit, students will be introduced to the different genres of fiction and nonfiction. They will learn about the purposes and features of each. Students will also be introduced to the roles and responsibilities of authors and illustrators.	**Makerspace Exploration** Throughout the school year, students will have specific days allocated as "Maker Space" Days. Some Maker Space classes will be free days for students to explore a variety of materials in order to create a product. On other days, students will work collaboratively in small groups to solve problems. The teacher will use events/holidays as a springboard for Maker Space Days.
Standards	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.	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. RI.K.5. Identify the front cover, back cover, and title page of a book. NJSLSA.SL5. Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.	RL.K.1. With prompting and support, ask and answer questions about key details in a text (e.g., who, what, where, when, why, how). RL.K.2. With prompting and support, retell familiar stories, including key details (e.g., who, what, where, when, why, how). RL.K.3. With prompting and support, identify characters, settings, and major events in a story.	9.4.2.CI.1: Demonstrate openness to new ideas and perspectives 9.4.2.CI.2: Demonstrate originality and inventiveness in work 9.4.2.CT.2: Identify possible approaches and resources to execute a plan 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

	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 9.4.2.IML.1: Identify a simple search term to find information in a search engine or digital resource. 9.4.2.TL.1: Identify the basic features of a digital tool and explain the purpose of the tool	NJSLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.	RL.K.4. Ask and answer questions about unknown words in a text. RL.K.5. Recognize common types of texts (e.g., storybooks, poems). RL.K.6. With prompting and support, name the author and illustrator of a story and define the role of each in telling the story. RL.K.7. With prompting and support, describe the relationship between illustrations and the story in which they appear (e.g., what moment in a story an illustration depicts). RI.K.5. Identify the front cover, back cover, and title page of a book. RI.K.7. With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts). RI.K.6. Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.	

	Unit 1 9 Weeks	Unit 2 8 Weeks	Unit 3 13 Weeks	Unit 4 6 Weeks
Grade 1	**Technology and Engineering Design** In this unit, students will be introduced to the design process. They will learn about specific terms related to the design process and a product including, wants, needs, purpose, function, constraints, and the role of technology in the creation of a product. Students will also work to take a product and redesign it in some way to reduce cost or improve function.	**Coding** In this unit, students will be introduced to computer programming. They will model the function of creating and following algorithms. They will create sequences and simple loops through coding. They will also work to debug an error when it occurs to improve their creations.	**Introductory Keyboarding** Students will learn valuable keyboarding fundamentals. Students will learn proper keyboarding posture, hand placement, and finger reaches, but may progress faster or slower through the lessons based on their age, skill and consistency of practice.	**Career Awareness** In this unit, students will be introduced to the idea of "careers." They will learn about careers through picture books. They will touch on different careers and the skills that are required to take part in the career. They will also discuss what a business is and the risks associated with owning one. The idea of volunteering and entrepreneurship will also be introduced.
Standards	8.2.2.EC.1: Identify and compare technology used in different schools, communities, regions, and parts of the world. 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	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.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 8.1.2.AP.4: break down a task into a sequence of steps 9.4.2.CT.3: use a variety of types of thinking to solve problems	9.1.2.CR.1: Recognize ways to volunteer in the classroom, school and community. 9.1.2.CR.2: List ways to give back, including making donations, volunteering, and starting a business. 9.1.2.CAP.1: Make a list of different types of jobs and describe the skills associated with each job 9.1.2.CAP.2: Explain why employers are willing to pay individuals to work. 9.1.2.CAP.3: Define entrepreneurship and social

	design process. 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. 8.2.2.ITH.3: Identify how technology impacts or improves life. 8.2.2.ITH.4: Identify how various tools reduce work and improve daily tasks. 8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution. 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.	8.1.2.AP.6: Debug errors in an algorithm or program that includes sequences and simple loops. 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.IML.2: Represent data in a visual format to tell a story about the data	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	entrepreneurship. 9.1.2.CAP.4: List the potential rewards and risks to starting a business

	Unit 1 6 Weeks	Unit 2 7 Weeks	Unit 3 7 Weeks	Unit 4 12 Weeks	Unit 5 4 Weeks
Grade 2	**Digital Citizenship** Students will explore the ideas of being a good digital citizen. They will learn about being safe online, creating a digital footprint, and the difference between owning content and taking others. They will also discuss responsible ways to communicate online.	**Financial Literacy** Students will be introduced to the elements of financial literacy. They will discuss money and the way it is used. They will also learn to differentiate between financial wants and needs. They will discuss the value of items, how to protect them, and methods for saving money.	**Research: Climate Change and Recycling** Students will take background knowledge of recycling and pollution and apply it to the understanding that what they do affects the global environment in addition to the local environment. Students will research climate change over a period of years, using computing devices, to see what the warming and cooling cycle have done to the natural world.	**Keyboarding** Students will learn valuable keyboarding fundamentals. Students will learn proper keyboarding posture, hand placement, and finger reaches, but may progress faster or slower through the lessons based on their age, skill and consistency of practice. The student will eventually work up to short sentences and paragraphs.	**Makerspace** Students will have specific days allocated as “Maker Space” Days. Some Maker Space classes will be free days for students to explore a variety of materials in order to create a product. On other days, students will work collaboratively in small groups to solve problems. The teacher will use events/holidays as a springboard for Maker Space Days.
Standards	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. 9.4.2.DC.4: Compare information that should be	9.1.2. FI.1: Differentiate the various forms of money and how they are used (e.g., coins, bills, checks, debit and credit cards). 9.1.2.FP.1: Explain how emotions influence whether a person spends or saves 9.1.2.FP.2: Differentiate between financial wants and needs. 9.1.2.FP.3: Identify the factors that influence	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	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	9.4.2.CI.1: Demonstrate openness to new ideas and perspectives 9.4.2.CI.2: Demonstrate originality and inventiveness in work 9.4.2.CT.2: Identify possible approaches and resources to execute a plan. 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive)

	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.	people to spend or save (e.g., commercials, family, culture, society). 9.1.2.PB.1: Determine various ways to save and places in the local community that help people save and accumulate money over time 9.1.2.PB.2: Explain why an individual would choose to save money. 9.1.2.RM.1: Describe how valuable items might be damaged or lost and ways to protect them.	and global environment 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem 9.4.2.DC.7: Describe actions peers can take to positively impact climate change 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 9.4.2.IML.4: Compare and contrast the way information is shared in a variety of contexts (e.g., social, academic, athletic) 9.4.2.TL.3: Enter information into a spreadsheet and sort the information. 9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts	terminology 8.1.2.AP.4: break down a task into a sequence of steps 9.4.2.CT.3: use a variety of types of thinking to solve problems 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	

			NJSLSA.W7. Conduct short as well as more sustained research projects, utilizing an inquiry-based research process, based on focused questions, demonstrating understanding of the subject under investigation. NJSLSA.W8. Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism. NJSLSA.W9. Draw evidence from literary or informational texts to support analysis, reflection, and research.		

	Unit 1 13 Weeks	Unit 2 13 Weeks	Unit 3 13 Weeks
Grade 3	**Communication Mechanics** In this unit of instruction, students will evaluate the role technology has played on communication through writing. Students will be introduced to cursive writing. They will explore the benefits of learning the method and discuss the controversy surrounding its teaching. Students will also complete the advanced course of keyboarding. This unit will focus on students building confidence in their skills and will work to grow their typing accuracy and words per minute. Students will also be introduced to learning the number row and advanced symbols.	**Information and Media Literacy** Students will understand that their digital world impacts their personal world. Social media accounts and video gaming/watching contribute to much of the time students spend on the internet, but can those platforms provide accurate information? Students will select a topic of choice and generate a list of investigative questions about the topic. Students must examine websites to evaluate authenticity, reliable factual information and also use print materials for supplemental information. They will also spend time analyzing different digital tools and select one that best matches the topic they are presenting.	**Research: Keeping our Oceans Safe and Analyzing Data** In this unit of instruction, students will apply the information they have learned in the Information and Media Literacy Unit to conduct research on Keeping Our Oceans Safe. They will look at the effects of humans and technology on the oceans. They will choose one of the negative effects climate change, technology, or humans have had on the oceans. Students will work in groups to research their desired topic. Part of the project will require students to collect, analyze, and present data.
Standards	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. 8.2.5.EC.1: Analyze how technology has contributed to or reduced inequities in local and global communities and determines its short and long term effects. NJSLSA.W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.	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 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	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.

	NJSLSA.W6. Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others. NJSLSA.W10. Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	varying purposes. 9.4.5.IML.6: Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to answer questions 9.4.5.IML.7: Evaluate the degree to which information meets a need including social emotional learning, academic, and social 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	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. 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 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 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 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process

			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 9.4.5.DC.8: Propose ways local and global communities can engage digitally to participate in and promote climate action

	Unit 1 6 Classes	Unit 2 10 Classes	Unit 3 14 Classes	Unit 4 4 Classes
Grade 4	**Digital Citizenship** Students are surrounded by technology. Learning to be a responsible and safe digital citizen is important. Students will focus on understanding ownership of digital material and exhibiting safe behaviors online. This will include explaining the positive and negative consequences of illegal or unsafe behaviors.	**Career Exploration** As we acquire new skills and interests, our choices for potential careers can change. Students will explore their interests and possible career matches. They will investigate necessary job qualifications, potential income, perks, and lifestyle benefits and challenges associated with particular careers. Students will also look at the similarities and differences of being an employee versus an entrepreneur.	**Music Technology** In this unit of study, students will examine the development of music technology across the years. They will study the development of music products over the years, such as: 8tracks, records, cassettes, CD's and mp3s. They will investigate the effects developments in technology have on the environment and the industry as a whole. Students will upcycle a musical artifact.	**STEAM** Students will listen to a variety of literature and solve a problem using STEAM in conjunction with the story. Students will be asked to complete a project that will fix the "problem" in a set story.
Standards	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 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	9.2.5.CAP.1: Evaluate personal likes and dislikes and identify careers that might be suited to personal likes. 9.2.5.CAP.2: Identify how you might like to earn an income. 9.2.5.CAP.3: Identify qualifications needed to pursue traditional and non-traditional careers and occupations. 9.2.5.CAP.4: Explain the reasons why some jobs and careers require specific training, skills, and certification (e.g., life guards, child care, medicine, education) and examples of these requirements 9.2.5.CAP.5: Identify various employee benefits, including income, medical, vacation time, and lifestyle benefits provided by	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. 8.2.5.NT.1: Troubleshoot a product that has stopped working and brainstorm ideas to correct the	9.4.2.CI.1: Demonstrate openness to new ideas and perspectives 9.4.2.CI.2: Demonstrate originality and inventiveness in work 9.4.2.CT.2: Identify possible approaches and resources to execute a plan. 9.4.2.CT.3: Use a variety of types of thinking to solve problems (e.g., inductive, deductive) 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.ED3: Follow step by step directions to assemble a product to solve a problem, using appropriate tools to accomplish

	how digital tools have changed social interactions 9.4.5.DC.7: Explain how posting and commenting in social spaces can have positive or negative consequences. 8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information.	different types of jobs and careers. 9.2.5.CAP.6: Compare the characteristics of a successful entrepreneur with the traits of successful employees. 9.2.5.CAP.7: Identify factors to consider before starting a business.	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. 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. 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 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 9.4.5.GCA.1: Analyze how culture shapes individual and community perspectives and points of view	the task 8.2.5.ED.4: Explain factors that influence the development and function of products and systems 8.2.5.ED.5: Describe how specifications and limitations impact the engineering design process.

	Unit 1 3 Weeks	Unit 2 4 Weeks	Unit 3 3 Weeks
Grade 5	Coding Students will be introduced to the fundamentals of coding. They will work to break down challenges into smaller components in order to create an effective program. They will utilize sequences, events, loops, and conditionals. They will also need to incorporate pieces of existing programs into their own work.	Financial Literacy Students will be exposed to financial terms and scenarios that teach them how to make wise financial decisions and improve their social emotional skills like goal-setting and responsible decision making. Students will learn about budgeting, insurance, different lending and saving institutions, and taxes. They will use critical thinking skills to analyze how their financial decisions affect their present and future lives.	3-D Printing In this unit students will be introduced to 3-D technology programming. They will use this digital platform to create 3-D printing projects. Students will explore different techniques necessary to build 3D objects. They will then complete a 2D sketch and design a unique project of their choosing. They will investigate the advantages of a 3D design.
Standards	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.	9.1.5.CR.1: Compare various ways to give back and relate them to your strengths, interests, and other personal factors. 9.1.5.CP.1: Identify the advantages of maintaining a positive credit history. 9.1.5.EG.1: Explain and give examples of what is meant by the term "tax." 9.1.5.EG.2: Describe how tax monies are spent 9.1.5.EG.3: Explain the impact of the economic system on one's personal financial goals. 9.1.5. EG.4: Describe how an individual's financial decisions affect society and contribute to the overall economy. 9.1.5. EG.5: Identify sources of consumer protection and assistance. 9.1.5.FI.1: Identify various types of financial institutions and the services they offer including banks, credit unions, and credit card companies. 9.1.5.FP.1: Illustrate the impact of financial traits on financial decisions.	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. 8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods. 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

		9.1.5.FP.2: Identify the elements of being a good steward of money 9.1.5.FP.3: Analyze how spending choices and decision-making can result in positive or negative consequences. 9.1.5.FP.4: Explain the role of spending money and how it affects wellbeing and happiness (e.g., "happy money," experiences over things, donating to causes, anticipation, etc.). 9.1.5.FP.5: Illustrate how inaccurate information is disseminated through various external influencers including the media, advertisers/marketers, friends, educators, and family members. 9.1.5.PB.1: Develop a personal budget and explain how it reflects spending, saving, and charitable contributions. 9.1.5.PB.2: Describe choices consumers have with money (e.g., save, spend, donate). 9.1.5.RMI.1. & 9.2.5.CAP.8: Identify risks that individuals and households face. 9.1.5.RMI.2 & 9.2.5.CAP.9: : Justify reasons to have insurance.	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. 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

	Unit 1 4 Weeks	Unit 2 5 Weeks
Grade 6	**Intro to Computers and Problem Solving** Problem Solving and Computing is a highly interactive and collaborative introduction to the field of computer science, as framed within the broader pursuit of solving problems. Students will practice using a problem solving process to address a series of puzzles, challenges, and real world scenarios. Students will learn how computers input, output, store, and process information to help humans solve problems. The unit concludes with a project in which students design an application that helps solve a problem of their choosing.	Web Development Students will learn how to create and share content on their own web pages. After deciding what content they want to share with the world, they will learn how to structure and style their pages using HTML and CSS. Students will also practice valuable programming skills such as debugging, using resources, and teamwork.
Standards	8.2.8.ED.1: Evaluate the function, value, and aesthetics of a technological product or system, from the perspective of the user and the producer. 8.2.8.ED.2: Identify the steps in the design process that could be used to solve a problem 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch). 8.2.8.ED.4: Investigate a malfunctioning system, identify its impact, and explain the step-by-step process used to troubleshoot, evaluate, and test options to repair the product in a collaborative team 8.2.8.ED.5: Explain the need for optimization in a design process. 8.2.8.ED.6: Analyze how trade-offs can impact the design of a product. 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches). 8.2.8.ITH.1: Explain how the development and use of technology influences economic, political, social, and cultural issues. 8.2.8.ITH.2: Compare how technologies have influenced society over time. 8.2.8.ITH.3: Evaluate the impact of sustainability on the development of a designed product or system. 8.2.8.ITH.4: Identify technologies that have been designed to reduce	9.4.8.IML.9: Distinguish between ethical and unethical uses of information and media (e.g., 1.5.8.CR3b, 8.2.8.EC.2). 9.4.8.IML.10: Examine the consequences of the uses of media (e.g., RI.8.7). 9.4.8.IML.11: Predict the personal and community impact of online and social media activities 9.4.8.IML.12: Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience. 9.4.8.IML.13: Identify the impact of the creator on the content, production, and delivery of information (e.g., 8.2.8.ED.1). 9.4.8.IML.14: Analyze the role of media in delivering cultural, political, and other societal 9.4.12.DC.1: Explain the beneficial and harmful effects that intellectual property laws can have on the creation and sharing of content (e.g., 6.1.12.CivicsPR.16.a). 9.4.12.DC.2: Compare and contrast international differences in copyright laws and ethics. 8.1.12.AP.2: Create generalized computational solutions using collections instead of repeatedly using simple variables. 8.1.12.AP.4: Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue.

	the negative consequences of other technologies and explain the change in impact. 8.2.8.ITH.5: Compare the impacts of a given technology on different societies, noting factors that may make a technology appropriate and sustainable in one society but not in another. 8.1.8.CS.3: Justify design decisions and explain potential system trade-offs. 8.1.8.IC.1: Compare the trade-offs associated with computing technologies that affect individual's everyday activities and career options. 8.1.8.AP.2:Create clearly named variables that represent different data types and perform operations on their values. 8.1.8.AP.7: Design programs, incorporating existing code, media, and libraries, and give attribution. 8.1.8.AP.8: Systematically test and refine programs using a range of test cases and users. 8.1.8.AP.9: Document programs in order to make them easier to follow, test, and debug 8.1.8.AP.4: Decompose problems and sub-problems into parts to facilitate the design, implementation, and review of programs. 8.1.8.AP.8: Systematically test and refine programs using a range of test cases and users. 8.1.8.AP.9: Document programs in order to make them easier to follow, test, and debug 8.1.8.AP.4: Decompose problems and sub-problems into parts to facilitate the design, implementation, and review of programs 8.1.8.AP.5: Create procedures with parameters to organize code and make it easier to reuse. 8.1.8.AP.6: Refine a solution that meets users' needs by incorporating feedback from team members and users 8.1.8.NI.3: Explain how network security depends on a combination of hardware, software, and practices that control access to data and systems 8.1.8.NI.4: Explain how new security measures have been created in response to key malware events. 9.4.8.DC.3 Describe the tradeoffs between allowing information to be public (eg within online games) versus keeping it private and secure 9.4.8.DC.4 Explain how information shared digitally is public and can be searched, copied and potentially seen by a public audience	8.1.12.AP.5: Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects. 8.1.12.AP.6: Create artifacts by using procedures within a program, combinations of data and procedures, or independent but interrelated programs. 8.1.12.AP.7: Collaboratively design and develop programs and artifacts for broad audiences by incorporating feedback from users 8.1.12.AP.8: Evaluate and refine computational artifacts to make them more usable and accessible. 8.1.12.AP.9: Collaboratively document and present design decisions in the development of complex programs. 9.4.8.TL.3: Select appropriate tools to organize and present information digitally

	9.4.8.DC.5 Manage digital identity and practice positive online behavior to avoid inappropriate forms of self disclosure 9.4.8.DC.6 Analyze online information to distinguish whether it is harmful or helpful to reputation 9.4.8.DC.7 Collaborate within a digital community to create digital artifact using strategies such as crowdsourcing or digital surveys 8.1.8.AP.8: Systematically test and refine programs using a range of test cases and users. 8.1.8.AP.9: Document programs in order to make them easier to follow, test, and debug 9.4.8.IML.9: Distinguish between ethical and unethical uses of information and media (e.g., 1.5.8.CR3b, 8.2.8.EC.2). 9.4.8.IML.10: Examine the consequences of the uses of media (e.g., RI.8.7). 9.4.8.IML.11: Predict the personal and community impact of online and social media activities. 9.4.8.IML.12: Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.	

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Grade 7	**STEM Challenges** In this unit of study students will work independently and in small groups to complete STEM challenges. STEM challenges will start out general in nature and will progress throughout the unit. They will focus on the climate and ways to reduce the effects of climate change. Students will evaluate how plastics contribute to climate change. The culminating project will center around upcycling and students will determine the level of involvement for the school surrounding the upcycle challenge.	**Tech Information and Media Literacy** Students will be introduced to the fundamentals of video editing. They will explore and experiment with various techniques and tools that will be needed to create an effective media message. Students will research, analyze and create data sets to produce an original piece on a global issue impacting the world today, while demonstrating positive digital citizenship and collaborating with others.
Standards	9.4.8.IML.8: Apply deliberate and thoughtful search strategies to access high-quality information on climate change 9.4.8.CI.1: Assess data gathered on varying perspectives on causes of climate change (e.g., crosscultural, gender-specific, generational), and determine how the data can best be used to design multiple potential solutions (e.g., RI.7.9, 6.SP.B.5, 7.1.NH.IPERS.6, 8.2.8.ETW.4) 9.4.8.CI.2: Repurpose an existing resource in an innovative way (e.g., 8.2.8.NT.3). 8.1.8.DA.6: Analyze climate change computational models and propose refinements. 8.2.8.NT.2: Analyze an existing technological product that has been repurposed for a different function. 8.2.8.NT.3: Examine a system, consider how each part relates to other parts, and redesign it for another purpose. 8.2.8.ITH.3: Evaluate the impact of sustainability on the development of a designed product or system 8.2.8.ETW.1: Illustrate how a product is upcycled into a new product and analyze the short- and long-term benefits and costs. 8.2.8.ETW.2: Analyze the impact of modifying resources in a product or system (e.g., materials, energy, information, time, tools, people, capital).	9.4.8.DC.7: Collaborate within a digital community to create a digital artifact using strategies such as crowdsourcing or digital surveys. 9.4.8.IML.1: Critically curate multiple resources to assess the credibility of sources when searching for information. 9.4.8.IML.2: Identify specific examples of distortion, exaggeration, or misrepresentation of information 9.4.8.IML.3: Create a digital visualization that effectively communicates a data set using formatting techniques such as form, position, size, color, movement, and spatial grouping (e.g., 6.SP.B.4, 7.SP.B.8b). 9.4.8.IML.4: Ask insightful questions to organize different types of data and create meaningful visualizations 9.4.8.IML.5: Analyze and interpret local or public data sets to summarize and effectively communicate the data 9.4.8.IML.6: Identify subtle and overt messages based on the method of communication 9.4.8.IML.7: Use information from a variety of sources, contexts, disciplines, and cultures for a specific purpose (e.g., 1.2.8.C2a, 1.4.8.CR2a, 2.1.8.CHSS/IV.8.AI.1, W.5.8, 6.1.8.GeoSV.3.a, 6.1.8.CivicsDP.4.b, 7.1.NH. IPRET.8). 9.4.8.IML.9: Distinguish between ethical and unethical uses of information and media (e.g., 1.5.8.CR3b, 8.2.8.EC.2). 9.4.8.IML.12: Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience. 9.4.8.TL.1: Construct a spreadsheet in order to analyze multiple data

	8.2.8.ETW.3: Analyze the design of a product that negatively impacts the environment or society and develop possible solutions to lessen its impact.	sets, identify relationships, and facilitate data-based decision-making. 9.4.8.TL.2: Gather data and digitally represent information to communicate a real-world problem (e.g., MS-ESS3-4, 6.1.8.EconET.1, 6.1.8.CivicsPR.4). 9.4.8.TL.3: Select appropriate tools to organize and present information digitally. 9.4.8.TL.4: Synthesize and publish information about a local or global issue or event (e.g., MSLS4-5, 6.1.8.CivicsPI.3) 9.4.8.TL.5: Compare the process and effectiveness of synchronous collaboration and asynchronous collaboration. 9.4.8.TL.6: Collaborate to develop and publish work that provides perspectives on a real-world problem. 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2) 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).

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Grade 8	**Financial Literacy** Students will be empowered to effectively set goals, prepare for careers, and manage their financial future through interactive and real-life scenarios.	**Career Awareness** This unit will merge the engaging financial literacy strategies with the development of career awareness skills. Students will have exposure to interview techniques, resume formats and other essential life skills as they develop a plan for high school and beyond.
Standards	9.1.8.CR.1: Compare and contrast the role of philanthropy, volunteer service, and charities in community development and the quality of life in a variety of cultures. 9.1.8.CR.2: Compare various ways to give back through strengths, passions, goals, and other personal factors. 9.1.8.CR.3: Relate the importance of consumer, business, and government responsibility to the economy and personal finance. 9.1.8.CR.4: Examine the implications of legal and ethical behaviors when making financial decisions. 9.1.8.CDM.1: Compare and contrast the use of credit cards and debit cards for specific purchases and the advantages and disadvantages of using each. 9.1.8.CDM.2: Demonstrate an understanding of the terminology associated with different types of credit (e.g., credit cards, installment loans, mortgages, lines of credit) and compare and calculate the interest rates associated with each. 9.1.8.CDM.3: Compare and contrast loan management strategies, including interest charges and total principal repayment costs. 9.1.8.CDM.4: Evaluate the application process for different types of loans (e.g., credit card, mortgage, student loans). 9.1.8.CP.1: Compare prices for the same goods or services. 9.1.8.CP.2: Analyze how spending habits affect one's ability to save. 9.1.8.CP.3: Explain the purpose of a credit score and credit record, the factors and impact of credit scores. 9.1.8.CP.4: Summarize borrower's credit report rights. 9.1.8.CP.5: Compare the financial products and services available to borrowers relative to their credit worthiness. 9.1.8.EG.1: Explain how taxes affect disposable income and the	9.2.8.CAP.1: Identify offerings such as high school and county career and technical school courses, apprenticeships, military programs, and dual enrollment courses that support career or occupational areas of interest. 9.2.8.CAP.2: Develop a plan that includes information about career areas of interest. 9.2.8.CAP.3: Explain how career choices, educational choices, skills, economic conditions, and personal behavior affect income. 9.2.8.CAP.4: Explain how an individual's online behavior (e.g., social networking, photo exchanges, video postings) may impact opportunities for employment or advancement. 9.2.8.CAP.5: Develop a personal plan with the assistance of an adult mentor that includes information about career areas of interest, goals and an educational plan. 9.2.8.CAP.6: Compare the costs of postsecondary education with the potential increase in income from a career of choice. 9.2.8.CAP.7: Devise a strategy to minimize costs of postsecondary education. 9.2.8.CAP.8: Compare education and training requirements, income potential, and primary duties of at least two jobs of interest. 9.2.8.CAP.9: Analyze how a variety of activities related to career preparation (e.g., volunteering, apprenticeships, structured learning experiences, dual enrollment, job search, scholarships) impacts postsecondary options. 9.2.8.CAP.10: Evaluate how careers have evolved regionally, nationally, and globally. 9.2.8.CAP.11: Analyze potential career opportunities by considering different types of resources, including occupation databases, and

	difference between net and gross income 9.1.8.EG.2: Explain why various sources of income are taxed differently. 9.1.8.EG.3: Explain the concept and forms of taxation and evaluate how local, state and federal governments use taxes to fund public activities and initiatives. 9.1.8.EG.4: Identify and explain the consequences of breaking federal and/or state employment or financial laws. 9.1.8.EG.5: Interpret how changing economic and societal needs influence employment trends and future education. 9.1.8.EG.6: Explain the economic principle of the circular flow of money in different situations regarding buying products or services from a local or national business and buying imported or domestic goods. 9.1.8.EG.7: Explain the effect of the economy (e.g., inflation, unemployment) on personal income, individual and family security, and consumer decisions. 9.1.8.EG.8: Analyze the impact of currency rates over a period of time and the impact on trade, employment, and income. 9.1.8.EG.9: Identify types of consumer fraud, the procedures for reporting fraud, the specific consumer protection laws, and the issues they address. 9.1.8.FP.1: Describe the impact of personal values on various financial scenarios. 9.1.8.FP.2: Evaluate the role of emotions, attitudes, and behavior (rational and irrational) in making financial decisions. 9.1.8.FP.3: Explain how self-regulation is important to managing money (e.g., delayed gratification, impulse buying, peer pressure, etc.). 9.1.8.FP.4: Analyze how familial and cultural values influence savings rates, spending, and other financial decisions. 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being. 9.1.8.PB.1: Predict future expenses or opportunities that should be included in the budget planning process. 9.1.8.PB.2: Explain how different circumstances can affect one's personal budget. 9.1.8.PB.3: Explain how to create a budget that aligns with financial goals.	state and national labor market statistics. 9.2.8.CAP.12: Assess personal strengths, talents, values, and interests to appropriate jobs and careers to maximize career potential. 9.2.8.CAP.13: Compare employee benefits when evaluating employment interests and explain the possible impact on personal finances. 9.2.8.CAP.14: Evaluate sources of income and alternative resources to accurately compare employment options. 9.2.8.CAP.15: Present how the demand for certain skills, the job market, and credentials can determine an individual's earning power. 9.2.8.CAP.16: Research different ways workers/ employees improve their earning power through education and the acquisition of new knowledge and skills. 9.2.8.CAP.17: Prepare a sample resume and cover letter as part of an application process. 9.2.8.CAP.18: Explain how personal behavior, appearance, attitudes, and other choices may impact the job application process. 9.2.8.CAP.19: Relate academic achievement, as represented by high school diplomas, college degrees, and industry credentials, to employability and to potential level 9.2.8.CAP.20: Identify the items to consider when estimating the cost of funding a business. 9.4.8.CI.4: Explore the role of creativity and innovation in career pathways and industries. 9.1.8.EG.9:Identify types of consumer fraud, the procedures for reporting fraud, the specific consumer protection laws, and the issues that they address 9.4.8.GCA.1: Model how to navigate cultural differences with sensitivity and respect (e.g., 1.5.8.C1a). 9.4.8.GCA.2: Demonstrate openness to diverse ideas and perspectives through active discussions to achieve a group goal.

	9.1.8.PB.4: Construct a simple personal savings and spending plan based on various sources of income and different stages of life (e.g. teenager, young adult, family). 9.1.8.PB.5: Identify factors that affect one's goals, including peers, culture, location, and past experiences. 9.1.8.PB.6: Construct a budget to save for short-term, long term, and charitable goals. 9.1.8.PB.7: Brainstorm techniques that will help decrease expenses including comparison shopping, negotiating, and day-to-day expense management. 9.1.8.RM.1: Determine criteria for deciding the amount of insurance protection needed. 9.1.8.RM.2: Analyze the need for and value of different types of insurance and the impact of deductibles in protecting assets against loss. 9.1.8.RM.3: Evaluate the need for different types of warranties. 9.1.8.RM.4: Explain the purpose of insurance products and the reasons for property product and liability insurance protection.	