Technology Curriculum Altenburg Public School

Kindergarten Technology Curriculum:

Concept	Subconcept	Kindergarten Standard	Resources/Materials/ Assessments
Computing Systems	Devices	K.CS.D.01 With guidance, follow directions and make appropriate choices to use computing devices to perform a variety of tasks.	Resources/Materials: Chromebook
			Assessments: TSW demonstrates understanding of how to access education websites from a curated list.
	Hardware & Software	K.CS.HS.01 Use appropriate terminology in naming and describing the function of common computing devices and components (e.g., mouse is used to control the cursor, desktop computer, laptop computer, tablet device, monitor, keyboard, mouse, printer).	Resources/Materials: Chromebook
			Assessments: TSW demonstrate understanding technology vocabulary including the words: Chromebook, keyboard, mouse, monitor, Mrs. B's Portal.
		K.CS.HS.02 With guidance, choose appropriate software to perform a variety of tasks.	Resources/Materials: Chromebook, Mrs. B's Portal
			Assessments: TSW demonstrate ability to open Mrs. B's portal and entered the requested webpage.
	Troubleshooting	K.CS.T.01 Recognize that computing systems might not work as expected and learn to use accurate terminology to identify simple hardware or software problems (e.g., volume turned down on turned down on headphones, monitor turned off, keyboard not working, mouse not working).	Resources/Materials: Chromebook
			Assessments: TSW successfully turn the volume up and down, reconnect headphones, & raise their hands when their chromebook is not working as expected.

Concept	Subconcept	Kindergarten Standard	Resources/Materials/ Assessments
Networks & the Internet	Network Communication & Organization	K.NI.NCO.01 Discuss that computing devices can be connected together. (e.g., printers connect to devices, phone/tablet share information).	Resource: Chromebooks Assessment: TSW identify icons for network connectivity on their chromebook and determine if their device is or is not connect to the Internet
	Cybersecurity	K.NI.C.01 Discuss what passwords are and why we do not share them with others. With guidance, use passwords to access technological devices, apps, etc.	Resource: Chromebooks/Student Accounts Assessment: Students will demonstrate the ability to log into their Google Account

Concept	Subconcept	Kindergarten Standard	Resources/Materials/ Assessments
Data & Analysis	Storage	K.DA.S.01 With guidance, locate, open, modify and save an existing file with a computing device.	Resource: Google Account/webpage similar to www.online-coloring.com Assessment: TSW create an image, modify that image, save that image, locate that image in their Google Drive, open that image, and set it as their Chromebook background.
	Collection, Visualization & Transformation	K.DA.CVT.01 With guidance, collect data and present it visually.	Resource: Google Account/webpage similar to www.online-coloring.com Assessment: TSW create an image, locate that image in their Google Drive, open that image, and set it as their Chromebook background.
	Inference & Models	K.DA.IM.01 With guidance, draw conclusions and make predictions based on picture graphs or patterns (e.g., make predictions based on weather data presented in a picture graph or complete a pattern).	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW draw conclusions and make predictions about letter sounds and words.

Concept	Subconcept	Kindergarten Standard	Resources/Materials/ Assessments
Algorithms & Programming	Algorithms	K.AP.A.01 With guidance, model daily processes and follow algorithms (sets of step-by-step instructions) to complete tasks verbally, kinesthetically, with robot devices or a programming language.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW create an algorithm to move a train from a starting point to the finish line of a puzzle.
	Variables	K.AP.V.01 With guidance, recognize that computers represent different types of data using numbers or other symbols.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving pictures.
	Control	K.AP.C.01 With guidance, independently or collaboratively create programs to accomplish tasks using a programming language, robot device or unplugged activity that includes sequencing (i.e., emphasizing the beginning, middle and end).	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW order images to retell a story using beginning, middle, and end.
	Program Development	K.AP.PD.01 With guidance, create a grade-level appropriate artifact to illustrate thoughts, ideas or sequence of events (step-by-step) manner (e.g., story map, storyboard, sequential graphic organizer).	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW order images to retell a story using beginning, middle, and end.
		K.AP.PD.02 Independently or with guidance give credit to ideas, creations and solutions of others while developing algorithms.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW solve a sequence problem with a small group and then explain their solution to the class giving credit to their partners as appropriate.

	Program Development	K.AP.PD.03 With guidance, independently or collaboratively debug algorithms using a programming language and/or unplugged activity that includes sequencing.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW solve a purposefully incorrect sequencing problem and explain what changes were made.
		K.AP.PD.04 Use correct terminology (beginning, middle, end) in the development of an algorithm to solve a simple problem.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW order images to retell a story using beginning, middle, and end.

Concept	Subconcept	Kindergarten Standard	Resources/Materials/ Assessments
Impacts of Computing	Culture	K.IC.C.01 Discuss different ways in which types of technologies are used in daily life.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.
	Social Interactions	K.IC.SI.01 With guidance, identify appropriate manners while participating in an online environment and online behaviors.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
	Safety, Law & Ethics	K.IC.SLE.01 Exhibit good digital citizenship using technology safely, responsibly and ethically.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

First Grade Technology Curriculum:

Concept	Subconcept	1st Grade Standard	Resources/Materials Assessments
Computing Systems	Devices	1.CS.D.01 With guidance, select and use a computing device to perform a variety of tasks for an intended outcome.	Resources/Materials: Chromebook, Mrs. B's Portal Assessments: TSW demonstrate understanding of how to access education websites from a curated list.
	Hardware & Software	1.CS.HS.01 Use appropriate terminology to locate and identify common computing devices and components, in a variety of environments (e.g., desktop computer, laptop computer, tablet device, monitor, keyboard, mouse, printer).	Resources/Materials: Chromebook, CIPA Training Video, Online Safety Pledge Assessments: TSW locate and identify computing devices in the classroom and at home.
		1.CS.HS.02 With little support, choose appropriate software to perform a variety of tasks.	Resources/Materials: Chromebook, Mrs. B's Portal Assessments: TSW demonstrate understanding of how to access education websites from a curated list.
	Troubleshooting	1.CS.T.01 Identify, using accurate terminology, simple hardware and software problems that may occur during use (e.g., app or program is not working as expected, no sound is coming from the device, caps lock turned on).	Resources/Materials: Chromebook, CIPA Training Video, Online Safety Pledge Assessments: TSW demonstrate an understand of when to ask for help during computer activities

Concept	Subconcept	1st Grade Standard	Resources/Materials/ Assessments
Networks & the Internet	Network Communication & Organization	1.NI.NCO.01 Recognize that by connecting computing devices together they can share information (e.g., remote storage, printing, the internet).	Resources/Materials: Chromebook, CIPA Training Video, Online Safety Pledge Assessments: TSW

			identify when their chromebook is online or offline
	Cybersecurity	1.NI.C.01 Identify what passwords are and explain why they are not shared. Discuss what makes a password strong. Independently, use passwords to access technological devices, apps, etc.	Resources/Materials: Chromebook, CIPA Training Video, Online Safety Pledge Assessments: TSW demonstrate an understanding of safety pledge and sign it with their parents

Concept	Subconcept	1st Grade Standard	Resources/Materials/ Assessments
Data & Analysis	Storage	1.DA.S.01 With guidance locate, open, modify and save an existing file, use appropriate file-naming conventions and recognize that the file exists within an organizational structure (e.g., drive, folder, file).	Resource: Google Account/webpage similar to www.online-coloring.com Assessment: TSW create an image, modify that image, save that image, locate that image in their Google Drive, open that image, and set it as their Chromebook background.
	Collection, Visualization & Transformation	1.DA.CVT.01 With guidance, collect data and present it two different ways.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving pictures.
	Inference & Models	1.DA.IM.01 With guidance, identify and interpret data from a chart or graph (visualization) in order to make a prediction, with or without a computing device.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving pictures.

Concept	Subconcept	1st Grade Standard	Resources/Materials/ Assessments
Algorithms & Programming	Algorithms	1.AP.A.01 With guidance, model daily processes and follow algorithms (sets of step-by-step instructions) to complete tasks verbally, kinesthetically, with robot devices or a programming language.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW create an algorithm to move a train from a starting point to the finish line of a puzzle.
	Variables	1.AP.V.01 With guidance, model the way that a program accesses stored data using a variable name.	Resource: Google Account/webpage similar to www.online-coloring.com Assessment: TSW create an image, modify that image, save that image, locate that image in their Google Drive, open that image, and set it as their Chromebook background.
	Control	1.AP.C.01 With guidance, independently or collaboratively create programs to accomplish tasks using a programming language, robot device or unplugged activity that includes sequencing and repetition.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW create an algorithm to move a train from a starting point to the finish line of a puzzle.
	Program Development	1.AP.PD.01 Independently or with guidance, create a grade level appropriate document of the plan, ideas and sequence of events (step-by- step) manner (e.g., story map, storyboard, sequential graphic organizer) to illustrate what the program will do.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW create an algorithm to move a train from a starting point to the finish line of a puzzle.

		1.AP.PD.02 Independently or with guidance give credit to ideas, creations and solutions of others while writing and/or developing programs.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW solve a sequence problem with a small group and then explain their solution to the class giving credit to their partners as appropriate.
	Program Development	1.AP.PD.03 With guidance, independently or collaboratively debug programs using a programming language and/or unplugged activity that includes sequencing and simple loops.	Resource: Chromebook/webpage similar to https://readingeggs.com/ Assessment: TSW create an algorithm to move a train from a starting point to the finish line of a puzzle.
		1.AP.PD.04 Use correct terminology (first, second, third) and explain the choices made in the development of an algorithm to solve a simple problem.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving numeric order

Concept	Subconcept	1st Grade Standard	Resources/Materials/ Assessments
Impacts of Computing	Culture	1.IC.C.01 Identify how people use different types of technologies in their daily work and personal lives.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and the technology used in different jobs
	Social Interactions	1.IC.SI.01 With guidance, identify appropriate and inappropriate behavior. Act responsibly while participating in an online community and know how to report concerns of cyberbullying.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.
	Safety, Law & Ethics	1.IC.SLE.01 Work respectfully and responsibly with others online. Learn what information that is put online is appropriate and can start a digital footprint.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

Second Grade Technology Curriculum:

Concept	Subconcept	2nd Grade Standards	Resources/Materials/ Assessments
Computing Systems	Devices	2.CS.D.01 Select and use a computing device to perform a variety of tasks for an intended outcome.	Resources/Materials: Chromebook, Mrs. B's Portal Assessments: TSW demonstrate understanding of how to access education websites from a curated list.
	Hardware & Software	2.CS.HS.01 Identify the components of a computer system and what the basic functions are (e.g., hard drive and memory) as well as peripherals (e.g., printers, scanners, external hard drives) and external storage features and their uses (e.g., cloud storage).	Resources: website like https://www.abcya.com/games/find_the_tech Assessment: TSW identify computer components
		2.CS.HS.02 Independently choose appropriate software to perform a variety of tasks.	Resources/Materials: Chromebook, Mrs. B's Portal Assessments: TSW demonstrate understanding of how to access education websites from a curated list.
	Troubleshooting	2.CS.T.01 Identify using accurate terminology, simple hardware and software problems that may occur during use (e.g., app or program is not working as expected, no sound is coming from the device, caps lock turned on) and discuss problems with peers and adults.	Resources: Chromebook, website like https://www.abcya.com/games/find_the_tech Assessment: TSW identify computer components. TSW troubleshoot technology problems as they occur.

Concept	Subconcept	2nd Grade Standards	Resources/Materials/ Assessments

Networks & the Internet	Network Communication & Organization	2.NI.NCO.01 Recognize that computing devices can be connected at various scales (e.g., Bluetooth, Wi-Fi, hotspot, LAN, WAN, peer-to-peer).	Resources: Chromebooks Assessment: TSW identify when their chromebook is connected to the Internet. TSW discuss other connections available to devices in their homes.
	Cybersecurity	2.NI.C.01 Recognize what passwords are and why we do not share them. Explain why we use them and why we use strong passwords to protect devices and information from unauthorized access.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.

Concept	Subconcept	2nd Grade Standards	Resources/Materials/ Assessments
Data & Analysis	Storage	2.DA.S.01 With guidance, create, copy, locate, modify and delete a file on a computing device, use appropriate file- naming conventions and recognize that the file exists within an organizational structure (e.g., drive, folder, file) - define the information stored as data.	Resource: Google Account/Google Docs Assessment: TSW create a document, modify that document, save that document, locate that image in their Google Drive, open that image, and set it as their Chromebook background.
	Collection, Visualization & Transformation	2.DA.CVT.01 With guidance, collect and present the same data in various visual formats.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving

			pictures.
	Inference & Models	2.DA.IM.01 With guidance, construct and interpret data and present it in a chart or graph (visualization) in order to make a prediction, with or without a computing device.	Resource: Chromebook/webpage similar to https://mathseeds.com/ Assessment: TSW evaluate and solve math problems involving pictures.

Concept	Subconcept	2nd Grade Standards	Resources/Materials/ Assessments
Algorithms & Programming	Algorithms	2.AP.A.01 With guidance, model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks verbally, kinesthetically, with robot devices or a programming language.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: In Robot Islands, students guide a robot through each level by creating and following step-by-step instructions, effectively modeling algorithms to complete tasks.
	Variables	2.AP.V.01 Model the way a computer program manipulates grade level appropriate data (e.g., print, numbers, kinesthetic movement, symbols, robot manipulatives).	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: Robot Islands allows students to manipulate data by selecting and arranging commands, which represent different types of data the robot processes to navigate through each level.
	Control	2.AP.C.01 With guidance, create programs using a programming language, robot device or unplugged activity that utilize sequencing and simple looping to solve a problem or express ideas both independently and collaboratively.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: Players create programs for the robot using sequencing and simple loops to navigate through levels, solving problems

			presented in the game.
	Program Development	2.AP.PD.01 Independently or with guidance, create a grade level appropriate document of the plan, ideas and sequence of events (step-by- step) manner (e.g., story map, storyboard, sequential graphic organizer) to illustrate what the program will do.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: Students will plan and sequence commands, akin to creating a storyboard or sequential graphic organizer, illustrating the robot's path and actions.
		2.AP.PD.02 Give credit to ideas, information, creations and solutions of others while writing and developing programs.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: TSW create an algorithm to move a robot from a starting point to a ending point through various challenges. As levels increase, TSW work collaboratively to complete each challenge. The teacher will facilitate discussions on giving credit for ideas and solutions shared among students during gameplay.
	Program Development	2.AP.PD.03 Independently and collaboratively, debug programs, which include sequencing and simple loops, to accomplish tasks as a means of creative expression or problem solving using a programming language and/or unplugged activities.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: Students debug their command sequences in Robot

			Islands to ensure the robot successfully completes each level, fostering problem-solving and debugging skills.
		2.AP.PD.04 Use correct terminology (e.g., debug, program input/output, code) to explain the development of an algorithm to solve a problem in an unplugged activity, hands on manipulatives or a programming language.	Resource: Chromebook/webpage similar to https://www.abcya.com/games/robot_islands Assessment: Students will use correct terminology, such as "debug" and "code," while explaining their command sequences and algorithms to solve each level's challenges.

Concept	Subconcept	2nd Grade Standards	Resources/Materials/ Assessments
Impacts of Computing	Culture	2.IC.C.01 Identify and describe how people use many types of technologies in their daily work and personal lives.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and the technology used in different jobs
	Social Interactions	2.IC.SI.01 Develop a code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior and know how to report concerns of cyberbullying.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.

	Safety, Law & Ethics	2.IC.SLE.01 Identify safe and unsafe examples of online communications. Learn that the information put online leaves a digital footprint.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

Third Grade Technology Curriculum:

Concept	Subconcept	3rd Grade Standards	Resources/Materials/ Assessments
Computing Systems	Hardware & Software	3.CS.HS.01 Model how information flows through hardware and software to accomplish tasks.	Resources: https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/# Assessment: TSW recognize that a computer has many parts and that information moves from one part to another in order to complete tasks.
	Troubleshooting	3.CS.T.01 Identify, using accurate terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults and apply strategies for solving these problems (e.g., refresh the screen, closing and reopening an application or file, unmuting or adjusting the volume on headphones).	Resources: Chromebook, website like https://www.abcya.com/games/find_the_tech Assessment: TSW identify computer components. TSW troubleshoot technology problems as they occur.

		3rd Grade Standards	Resources/Materials/ Assessments
Networks & the Internet	Network Communication & Organization	3.NI.NCO.01 Recognize how information changes when sent and received over physical or wireless paths. (Information is broken into smaller parts, sent to the destination and then reassembled into a whole.)	Resources: Chromebooks Assessment: TSW identify when their chromebook is connected to the Internet. TSW decompose the steps to drawing a simple shape, share those steps with a peer and have the peer recreate the shape.
	Cybersecurity	3.NI.C.01 Identify problems that relate to inappropriate use of computing devices and networks.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.

Concept	Subconcept	3rd Grade Standards	Resources/Materials/ Assessments
Data & Analysis	Storage	3.DA.S.01 Recognize that different types of information are stored in different formats that have associated programs (e.g., documents open in a word processor) and varied storage requirements.	Resources: Chromebooks, Google Apps Assessments: Students will understand that their Google Docs and Google Slides are stored in different formats and require specific programs (Google Docs for text documents and Google Slides for presentations) to open and edit them.
	Collection, Visualization & Transformation	3.DA.CVT.01 Collect data using various programs and formats (e.g., surveys, forms) and organize the data in various visual formats (e.g., charts, graphs, tables).	Resources: Chromebooks Google Apps Assessments: Students will collect data related to their classroom topics, possibly through surveys or forms, and then use Google Slides to organize and present this data in visual formats such as charts, graphs, and tables.
	Inference & Models	3.DA.IM.01 With guidance, utilize data to make predictions and discuss whether there is adequate data to be useful and to make reliable predictions.	Resources: Chromebooks Google Apps Assessments: Students will analyze the data they have collected and organized in their Google Docs and Slides, and with guidance, use this data to make predictions related to their classroom topics, discussing the adequacy and reliability of their data for making informed predictions.

Concept	Subconcept	3rd Grade Standards	Resources/Materials/ Assessments
Algorithms & Programming	Algorithms	3.AP.A.01 Compare multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will compare different sets of step-by-step instructions (algorithms) for choreographing dance moves and

			generating special effects, exploring how different code sequences produce varied outcomes in their dance parties.
	Variables	3.AP.V.01 Create programs that use variables to store and modify grade level appropriate data.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students use variables within their code to store and modify data, such as the selected emojis that influence the special effects generated by the AI, ensuring the visual elements match the mood of the dance.
	Control	3.AP.C.01 Collaboratively create a program using control structures (e.g., sequence, conditionals, interactive- looping) to make decisions within a program.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will work together to create programs using control structures like sequence and events to choreograph dance moves and special effects, making real-time decisions within their code.
	Modularity	3.AP.M.01 Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students break down the process of creating a dance party into precise sequences of instructions, from choosing dancers and moves to adding AI-generated effects and interactive elements.
		3.AP.M.02 With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will modify and remix the given code blocks to create unique dance sequences and special effects, encouraging them to develop new and more advanced features for their dance parties.

	Program Development	3.AP.PD.01 Use an iterative and collaborative process to plan the development of a program while solving simple problems.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will engage in an iterative and collaborative process, planning and refining their code to solve problems and enhance their dance party project, iterating on their designs based on feedback and testing.
		3.AP.PD.02 Observe intellectual property rights and give appropriate credit when creating or remixing programs.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will give credit to original ideas and resources used in their dance party projects, promoting respect for intellectual property.
		3.AP.PD.03 Analyze and debug a program that includes sequencing, repetition and variables in a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will analyze and debug their dance party code, which includes sequences, events, and variables, to ensure their program runs smoothly and as intended.
		3.AP.PD.04 Communicate and explain your program development using comments, presentations and interactive demonstrations.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students explain and present their program development process through interactive demonstrations of their dance parties, using the coding platform's features to showcase their work and the decisions they made in their code.

Concept	Subconcept	3rd Grade Standards	Resources/Materials/ Assessments
Impacts of Computing	Culture	3.IC.C.01 Identify computing technologies that have changed the world and express how those technologies influence, and are	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety

		influenced by, cultural practices.	video, identify the technology they use at home and at school. TSW discuss ways computers impact the daily lives of those around them.
		3.IC.C.02 Identify possible problems and how computing devices have built in features for increasing accessibility to all users.	Resources: Chromebooks Assessment: TSW utilize accessibility features on their chromebooks.
	Social Interactions	3.IC.SI.01 Develop a code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community (e.g., responsibilities of being a good digital citizen, private and personal information, showing respect for other people's work). Identify and report inappropriate behavior and know how to report cyberbullying.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.
	Safety, Law & Ethics	3.IC.SLE.01 Identify types of digital data that may have intellectual property rights that prevent copying or require attribution.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
		3.IC.SLE.02 Discuss the importance of a positive digital footprint.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

Fourth Grade Technology Curriculum:

Concept	Subconcept	4th Grade	Resources/Materials/ Assessments
Computing Systems	Hardware & Software	4.CS.HS.01 Model that information is translated, transmitted and processed in order to flow through hardware and software.	Resources: https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/# Assessment: TSW recognize that a computer has many parts and that information moves from one part to another in order to complete tasks.
	Troubleshooting	4.CS.T.01 Identify, using accurate terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults and apply strategies for solving these problems (e.g., rebooting the computing device, checking the power, force shut down of an application).	Resources: Chromebook, website like https://www.abcya.com/games/find_the_tech Assessment: TSW identify computer components. TSW troubleshoot technology problems as they occur.

Concept	Subconcept	4th Grade	Resources/Materials/ Assessments
Networks & the Internet	Network Communication & Organization	4.NI.NCO.01 Explain how information is broken down into packets, transmitted through multiple computing devices over networks and the internet and reassembled at the destination.	Resources: Chromebooks Assessment: TSW identify when their chromebook is connected to the Internet. TSW decompose the steps to drawing a simple shape, share those steps with a peer and have the peer recreate the shape.
	Cybersecurity	4.NI.C.01 Discuss real-world cybersecurity problems and identify strategies for how personal information can be protected.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.

Concept	Subconcept	4th Grade	Resources/Materials/ Assessments
Data & Analysis	Storage	4.DA.S.01 Choose different storage locations (e.g., physical, shared, cloud) based on the type of file, storage requirements (e.g., file size, availability, available memory) and sharing requirements.	Resources: Chromebooks, Google Apps Assessments: Students will understand that their Google Docs and Google Slides are stored in different formats and require specific programs (Google Docs for text documents and Google Slides for presentations) to open and edit them.
	Collection, Visualization & Transformation	4.DA.CVT.01 Organize and present collected data visually to highlight comparisons.	Resources: Chromebooks Google Apps Assessments: Students will collect data related to their classroom topics, possibly through surveys or forms, and then use Google Slides to organize and present this data in visual formats such as charts, graphs, and tables.
	Inference & Models	4.DA.IM.01 Determine how the accuracy of conclusions are influenced by the amount of useful and reliable data collected.	Resources: Chromebooks Google Apps Assessments: Students will analyze the data they have collected and organized in their Google Docs and Slides, and with guidance, use this data to make predictions related to their classroom topics, discussing the adequacy and reliability of their data for making informed predictions.

Concept	Subconcept	4th Grade	Resources/Materials/ Assessments

Algorithms & Programming	Algorithms	4.AP.A.01 Compare and simplify multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will compare different sets of step-by-step instructions (algorithms) for choreographing dance moves and generating special effects, exploring how different code sequences produce varied outcomes in their dance parties.
	Variables	4.AP.V.01 Create programs that use variables to store and modify grade level appropriate data.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students use variables within their code to store and modify data, such as the selected emojis that influence the special effects generated by the AI, ensuring the visual elements match the mood of the dance.
	Control	4.AP.C.01 Create a program using control structures (e.g., sequence, conditionals, interactive-looping) to solve a problem or express ideas both independently and collaboratively.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will work together to create programs using control structures like sequence and events to choreograph dance moves and special effects, making real-time decisions within their code.
	Modularity	4.AP.M.01 Decompose (break down) large problems into smaller, manageable sub problems to facilitate the program development process.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students break down the process of creating a dance party into precise sequences of instructions, from choosing dancers and moves to adding AI-generated effects and

			interactive elements.
		4.AP.M.02 With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will modify and remix the given code blocks to create unique dance sequences and special effects, encouraging them to develop new and more advanced features for their dance parties.
	Program Development	4.AP.PD.01 Use an iterative and collaborative process to plan the development of a program that includes user preferences while solving simple problems.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will engage in an iterative and collaborative process, planning and refining their code to solve problems and enhance their dance party project, iterating on their designs based on feedback and testing.
		4.AP.PD.02 Observe intellectual property rights and give appropriate credit when creating or remixing programs.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will give credit to original ideas and resources used in their dance party projects, promoting respect for intellectual property.
		4.AP.PD.03 Analyze, create and debug a program that includes sequencing, repetition, conditionals and variables in a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will analyze and debug their dance party code, which includes sequences, events, and variables, to ensure their program runs smoothly and as intended.

		4.AP.PD.04 Communicate and explain your program development using comments, presentations and interactive demonstrations.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students explain and present their program development process through interactive demonstrations of their dance parties, using the coding platform's features to showcase their work and the decisions they made in their code.

Concept	Subconcept	4th Grade	Resources/Materials/ Assessments
Algorithms & Programming	Algorithms	4.AP.A.01 Compare and simplify multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will compare different sets of step-by-step instructions (algorithms) for choreographing dance moves and generating special effects, exploring how different code sequences produce varied outcomes in their dance parties.
	Variables	4.AP.V.01 Create programs that use variables to store and modify grade level appropriate data.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students use variables within their code to store and modify data, such as the selected emojis that influence the special effects generated by the AI, ensuring the visual elements match the mood of the dance.
	Control	4.AP.C.01 Create a program using control structures (e.g., sequence, conditionals, interactive-looping) to solve a problem or	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will work

		express ideas both independently and collaboratively.	together to create programs using control structures like sequence and events to choreograph dance moves and special effects, making real-time decisions within their code.
	Modularity	4.AP.M.01 Decompose (break down) large problems into smaller, manageable sub problems to facilitate the program development process.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students break down the process of creating a dance party into precise sequences of instructions, from choosing dancers and moves to adding AI-generated effects and interactive elements.
		4.AP.M.02 With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will modify and remix the given code blocks to create unique dance sequences and special effects, encouraging them to develop new and more advanced features for their dance parties.
	Program Development	4.AP.PD.01 Use an iterative and collaborative process to plan the development of a program that includes user preferences while solving simple problems.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will engage in an iterative and collaborative process, planning and refining their code to solve problems and enhance their dance party project, iterating on their designs based on feedback and testing.
		4.AP.PD.02 Observe intellectual property rights and give appropriate credit when creating or remixing programs.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will give

			credit to original ideas and resources used in their dance party projects, promoting respect for intellectual property.
		4.AP.PD.03 Analyze, create and debug a program that includes sequencing, repetition, conditionals and variables in a programming language.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students will analyze and debug their dance party code, which includes sequences, events, and variables, to ensure their program runs smoothly and as intended.
		4.AP.PD.04 Communicate and explain your program development using comments, presentations and interactive demonstrations.	Resources: Chromebook, www.code.org (Dance Party) Assessment: Students explain and present their program development process through interactive demonstrations of their dance parties, using the coding platform's features to showcase their work and the decisions they made in their code.
Concept	**Subconcept**	**4th Grade**	**Resources/Materials/ Assessments**
Impacts of Computing	Culture	4.IC.C.01 Give examples of computing technologies that have changed the world and express how those technologies influence, and are influenced by, cultural practices.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home and at school. TSW discuss ways computers impact the daily lives of those around them.
		4.IC.C.02 Brainstorm problems and ways to improve computing devices to increase accessibility to all users.	Resources: Chromebooks Assessment: TSW explore and utilize accessibility features on

			their chromebooks.
	Social Interactions	4.IC.SI.01 Develop a code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community (e.g., using strong passwords, creating a positive online community, recognizing spam and what to do about it, citing online sources). Identify and report inappropriate behavior and know how to report cyberbullying.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home, and recognize safe and unsafe online behaviors.
	Safety, Law & Ethics	4.IC.SLE.01 Discuss the social impact of violating intellectual property rights.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
		4.IC.SLE.02 Discuss and understand the implications of a negative digital footprint.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

K-4 Summary - Each Grade BUILDS on what they learned the year before. So everything Kindergarten focuses on gets reviewed in first grade, and so on…

Children's Internet Protection Act (CIPA) - Each grade has lessons throughout the year (starting on day one) to make sure we are following the Children's Internet Protection Act (CIPA). Integrating these standards into the curriculum ensures that students are educated about responsible and safe Internet use, aligning with CIPA's requirements. This comprehensive approach not only helps the school maintain E-rate funding compliance but also fosters a safe and positive online environment for students.

Kindergarten - How to carry a chromebook, how to open a chromebook, how to turn a chromebook on, (not really to log in), how to use the trackpad (mouse), how to open an app, how to exit an app, how to open Mrs. B's portal, how to make sure they stay on the correct assignment. Kindergarteners use their Chromebooks to

practice math and ELA skills primarily on Reading Eggs/Math Seeds/Fast Phonics. Kindergarteners also take a reading test on their chromebook.

First Grade - Review Kindergarten skills and add: How to log in to their chromebook, First graders begin to use google docs, how to type their name and their spelling words, how to format fonts, copy and paste images. First graders use their Chromebooks to practice math and ELA skills primarily on Reading Eggs/Math Seeds/Fast Phonics. First Graders also take a reading test on their chromebook.

Second Grade - Review K and First grade skills and add: 2nd graders become more proficient at using Google Docs to: Find and reopen a document that they have been working on. Type complete sentences capitalizing letters and adding punctuation. Copy and paste text as well as images. They begin simple coding using robot games. Second graders use their chromebooks to practice math, reading, and coding skills on a variety of apps including Reading Eggs, Fast Phonics, Math Seeds, SumDog, Code.org, and abcya.com Second Graders take a reading and math test on their chromebook.

Third Grade - Review K, 1, & 2 skills and: The primary focus of this year is to learn to type. This requires constant practice. In addition to that students will continue learning to use Google Docs typing complete paragraphs with indenting and correct spacing between sentences. Students begin learning to use Google Slides to share information about themselves and small research projects. They also begin coding using a block coding language. We continue to use chromebooks to practice math and ELA skills but now it is IXL as well as other resources. Third graders will take district reading and math tests on their chromebooks as well as state tests (MAP tests).

Fourth Grade - Review K, 1, 2, 3 skills and: Review and practice typing to consistently type using touch typing without looking. Students will continue to progress in Google Docs and Google Slides. They will be able to type multiple paragraphs in one sitting. They will continue coding more and more difficult challenges. They will use their chromebooks to practice math and ELA skills as well as research science and social studies topics like using Google Maps to find landforms. Fourth Graders will take district reading and math tests on their chromebooks as well as state tests (MAP tests). Their state test will require that they write an essay on their chromebook without help in one sitting.

		5th Grade	Resources/Materials/ Assessments
Computing Systems	Hardware & Software	5.CS.HS.01 Model that information is translated into bits in order to transmit and process between software to accomplish tasks.	Resources: https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/# Assessment: TSW recognize that a computer has many parts and that information moves from one part to another in order to complete tasks.
	Troubleshooting	5.CS.T.01 Identify, using accurate terminology, simple hardware and software problems that may occur during everyday use. Discuss problems with peers and adults, apply strategies for solving these problems and explain why the strategy should work.	Resources: Chromebook, website like https://www.abcya.com/games/find_the_tech Assessment: TSW identify computer components. TSW troubleshoot technology problems as they occur.
		5th Grade	**Resources/Materials/ Assessments**
Networks & the Internet	Network Communication & Organization	5.NI.NCO.01 Model how information is broken down into packets, transmitted through multiple computing devices over networks and the internet and reassembled at the destination.	Resources: Chromebooks Assessment: TSW identify when their chromebook is connected to the Internet. TSW decompose the steps to drawing a simple shape, share those steps with a peer and have the peer recreate the shape.
	Cybersecurity	5.NI.C.01 Analyze the credibility of digital information (e.g., comparing multiple accounts and sources, the author's point of view).	Resources: Websites like: https://wit-ie.libguides.com/c.php?g=648995&p=4551538 Assessment: TSW site their sources for a slide presentation and differentiate between credible and fake sites

		5.NI.C.02 Discuss cybersecurity problems caused by information that is published for different reasons (e.g., inform, advertise, persuade, harm).	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
	5th Grade		**Resources/Materials/ Assessments**
Data & Analysis	Storage	5.DA.S.01 Evaluate trade-offs, including availability and quality, based on the type of file, storage requirements (e.g., file size, availability, available memory) and sharing requirements.	Resources: Chromebook, Google Apps Assessment: Students will use Google Docs, Sheets, Slides, and Forms to evaluate the trade-offs between different file types. For example, they will compare the ease of sharing a Google Doc versus a PDF, considering file size, quality, and compatibility. They will create a presentation in Google Slides to illustrate their findings, highlighting the advantages and disadvantages of each file type in terms of storage and sharing.
	Collection, Visualization & Transformation	5.DA.CVT.01 Organize and present collected data to highlight comparisons and support a claim.	Resources: Chromebook, Google Apps, Assessment: Students will use Google Forms to collect data on a topic of interest. They will then use Google Sheets to organize and analyze this data, creating charts and graphs to visualize the comparisons. Finally, they will present their findings in a Google Slides presentation, clearly supporting their claim

			with organized and visually represented data.
	Inference & Models	5.DA.IM.01 Use reliable data to highlight or propose cause and effect relationships, predict outcomes or communicate an idea.	Resources: Chromebook, Google Apps, Assessment: Students will gather reliable data through Google Forms surveys and analyze the results in Google Sheets. They will use this data to identify cause and effect relationships and make predictions about future outcomes. These insights will be communicated through a Google Docs report or a Google Slides presentation, effectively using the data to support their ideas and proposals.
		5th Grade	**Resources/Materials/ Assessments**
Algorithms & Programming	Algorithms	5.AP.A.01 Compare and simplify multiple algorithms (sets of step-by-step instructions) for accomplishing the same task verbally and kinesthetically, with robot devices or a programming language, then determine which is the most efficient.	Resources: Chromebooks and code.org app Assessment: During the "Code a Map" activity, students will experiment with different algorithms to create their interactive maps. They will compare and simplify their code to determine the most efficient way to animate their sprites and create the desired interactions.
	Variables	5.AP.V.01 Create programs that use variables to store and modify grade level appropriate data.	Resources: Chromebooks and code.org app Assessment Students will use variables to store data related to the properties of their sprites, such as location, size, and behaviors.

	Control	5.AP.C.01 Create a program using control structures (e.g., sequence, conditionals, interactive-looping), event handlers and variables to solve a problem or express ideas both independently and collaboratively.	Resources: Chromebooks and code.org app Assessment: Students will use control structures, event handlers, and variables in Sprite Lab to create interactive maps that respond to user interactions.
	Modularity	5.AP.M.01 Decompose (break down) large problems into smaller, manageable sub problems and then into a precise sequence of instructions.	Resources: Chromebooks and code.org app Assessment:While coding their maps, students will break down the task of creating an interactive map into smaller steps, such as animating sprites, setting behaviors, and coding interactions.
		5.AP.M.02 With grade appropriate complexity, modify, remix or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.	Resources: Chromebooks and code.org app Assessment:Students will have the opportunity to customize their sprites and maps using the Sprite Upload tool and Animation Library, modifying and remixing existing sprites and code.
	Program Development	5.AP.PD.01 Use an iterative and collaborative process to plan the development of a program that includes other perspectives and user preferences while solving simple problems.	Resources: Chromebooks and code.org app Assessment Students will utilize pair programming and collaborative discussions, allowing students to iteratively plan and develop their maps with input from peers.
		5.AP.PD.02 Observe intellectual property rights and give appropriate credit when creating or remixing programs.	Resources: Chromebooks and code.org app Assessment:Students will observe intellectual property rights and give appropriate credit when using or remixing sprites and code in their interactive maps.

		5.AP.PD.03 Analyze, examine, create and debug a program that includes sequencing, repetition, conditionals and variables in a programming language.	Resources: Chromebooks and code.org app Assessment: Students will analyze, create, and debug their interactive maps using sequencing, repetition, conditionals, and variables in Sprite Lab.
		5.AP.PD.04 Communicate and explain your program development using comments, presentations and interactive demonstrations.	Resources: Chromebooks and code.org app Assessment:Students will communicate and explain their program development process through comments in their code, presentations, and interactive demonstrations during class discussions and the "Campfire Discussion."
		5th Grade	**Resources/Materials/ Assessments**
Impacts of Computing	Culture	5.IC.C.01 Give examples and explain how computing technologies have changed the world and express how computing technologies influence, and are influenced by, cultural practices.	Resources; CTS CIPA training video, online safety pledge Assessment: TSW watch safety video, identify the technology they use at home and at school. TSW discusses ways computers impact the daily lives of those around them.
		5.IC.C.02 Develop, test and refine digital artifacts to improve accessibility and usability.	Resources: Chromebooks Assessment: TSW utilize accessibility features on their chromebooks to create a document of vocabulary words. These accessibility features will include speech to text, text to speech, font choices and sizes, display brightness, and zoom.

	Social Interactions	5.IC.SI.01 Develop a code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community (e.g., talking safely online, promoting good digital citizens, privacy settings, cyberbullying). Identify and report inappropriate behavior and know how to report cyberbullying.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
	Safety, Law & Ethics	5.IC.SLE.01 Observe intellectual property rights and give appropriate credit when using resources.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.
		5. IC.SLE.02 Continue to discuss and understand the implications of positive and negative digital footprints and that they never go away.	Resources; CTS CIPA training video, online safety pledge, APS Student Handbook Assessment: TSW watch safety video, discuss school technology policies, and complete an online safety pledge.

Sixth - 8th Grade Curriculum

Concept	Subconcept	By the End of the 8th Grade	Resources/Materials/ Assessments
Computing Systems	Devices	6-8.CS.D.01 Evaluate the design of computing devices, based on the characteristics of each device and how users interact with it, to improve the overall user experience.	Resources: https://edu.gcfglobal.org/en/computerbasics/inside-a-computer/1/# Assessment: TSW recognizes that a computer has many parts and that information moves from one part to another in order to complete tasks.
	Hardware & Software	6-8.CS.HS.01 Design projects that combine hardware and software to collect and exchange data.	Resources: Chromebooks and Google Sheets/Forms Assessment: TSW create a table and a chart with favorite drink, snack, etc

			with their classmates.
	Troubleshooting	6-8.CS.T.01 Develop a systematic troubleshooting routine to identify the problem, research solutions and fix problems with computing devices, components and software.	Resources: Chromebooks, Google Docs Assessment: TSW develops a 'cheat sheet' for the most common technology problems we have at school.
Concept	**Subconcept**	**By the End of the 8th Grade**	**Resources/Materials/ Assessments**
Networks & the Internet	Network Communication & Organization	6-8.NI.NCO.01 Model the different ways that data is transferred across a network and the protocols used to transmit the data.	Resources: The material required from this point forward is from code.org - Computer Science Discoveries. All lessons notes are from Unit 1. Lesson 5: Input and Output: Students consider how information is transmitted between computers and users through inputs and outputs. This lesson provides a foundational understanding of data transmission protocols as students explore how computers interact with users and other devices over networks.
	Cybersecurity	6-8.NI.C.01 Recognize and determine computer threats and be able to identify programs and methods to protect electronic information.	Lesson 7: Storage: Students discuss the importance of storing information securely within apps and other digital tools. This lesson addresses the need for protecting electronic information by considering what types of data should be stored securely and the implications of storing sensitive information.
		6-8.NI.C.02 Demonstrate how data is transmitted through multiple methods of encryption.	Lesson 8: Project - Propose an App: Students design an app that incorporates the input/output/store/process model, including considerations of data encryption for security. This project encourages students to think about data security and privacy as they propose and design apps, possibly incorporating encryption methods to protect user data.
Concept	**Subconcept**	**By the End of the 8th Grade**	**Resources/Materials/ Assessments**

Data & Analysis	Storage	6-8.DA.S.01 Represent data using multiple encoding schemes.	Lesson 5: Input and Output: Activity: Students identify different methods of input or output in common apps. This includes understanding how data is represented and encoded to facilitate processing by computers.
	Collection, Visualization & Transformation	6-8.DA.VT.01 Collect data using computational tools and display it for the end user in an easy to understand way.	Lesson 5: Input and Output: Activity: Students identify different methods of input or output in common apps. This includes understanding how data is represented and encoded to facilitate processing by computers.
	Inference & Models	6-8.DA.IM.01 Analyze methods to refine computational models based on received data.	Lesson 6: Processing: Students analyze how data received from inputs (e.g., user choices in apps) can refine computational models. They consider how algorithms and processing methods can be adjusted based on received data to improve the accuracy and efficiency of computational models..
Concept	**Subconcept**	**By the End of the 8th Grade**	**Resources/Materials/ Assessments**
Algorithms & Programming	Algorithms	6-8.AP.A.01 Design algorithms with flow charts and/or pseudocode to show solutions to complex problems.	Lesson 2: The Problem Solving Process: Students will be introduced to a formal problem-solving process, where they will relate real-life problem-solving steps to the abstract steps of defining, preparing, trying, and reflecting. This process mirrors the creation of flowcharts and pseudocode to solve complex problems. Lesson 8: Project - Propose an App: In their final project, students will design an app to solve a real-world problem, creating algorithms and presenting their solutions using flowcharts or pseudocode.
	Variables	6-8.AP.V.01 Create clearly named variables to store and manipulate information.	Lesson 6: Processing: Students will explore how computers process information, including using variables to store and manipulate data. They will apply this understanding by brainstorming their own apps and deciding what variables they need. Lesson 8: Project - Propose an App: Students will create detailed designs for their apps,

			which will include the use of clearly named variables to store and manipulate information as part of their app's functionality.
	Control	6-8.AP.C.01 Design and develop combinations of control structures, nested loops and compound conditionals.	Lesson 6: Processing: This lesson introduces different types of processing, such as conditionals and loops. Students will investigate apps to identify these structures and design their own apps using control structures, nested loops, and compound conditionals. Lesson 8: Project - Propose an App: In their app design project, students will develop control structures, nested loops, and compound conditionals to implement the logic and functionality required for their app to solve a chosen problem.
	Modularity	6-8.AP.M.01 Decompose problems and subproblems into parts to facilitate the design, implementation and review of programs.	Lesson 2: The Problem Solving Process: Students will learn to break down complex problems into manageable steps: Define, Prepare, Try, and Reflect. This mirrors the process of decomposing problems into parts for programming. Lesson 3: Exploring Problem Solving: Through solving various problems, students will practice decomposing these problems into smaller, more manageable subproblems. Lesson 8: Project - Propose an App: In their final project, students will decompose the problem their app aims to solve into smaller tasks, facilitating the design, implementation, and review stages of their project. 6-8.AP.M.02
		6-8.AP.M.02 Create procedures with parameters to organize code and to make it easier to reuse.	Lesson 6: Processing: Students will identify different types of processing that their apps might need, including procedures that can be reused with different parameters. Lesson 8: Project - Propose an App: In their app design, students will create reusable procedures with parameters to organize their code effectively and ensure their app functions as intended.

	Program Development	6-8.AP.PD.01 Use flowcharts and/or pseudocode to solve problems using algorithms.	Lesson 2: The Problem Solving Process: The lesson will introduce students to organizing problem-solving steps, which can be represented using flowcharts and pseudocode. Lesson 8: Project - Propose an App: Students will use flowcharts and pseudocode to design algorithms for their app projects, demonstrating how their solutions address the chosen problem.
		6-8.AP.PD.02 Use feedback from team members and users to refine solutions to meet user needs.	Lesson 1: Intro to Problem Solving: Students will work in groups and provide feedback to each other while designing aluminum foil boats, reflecting on their experiences to improve their designs. Lesson 8: Project - Propose an App: During the project, students will receive feedback from their peers and potential users to refine their app designs, ensuring their solutions effectively meet user needs.
		6-8.AP.PD.03 Give proper attribution to code, media, etc. that is used in their programs.	Lesson 8: Project - Propose an App: Students will be required to properly attribute any code, media, or resources they use in their app designs, understanding the importance of intellectual property rights and ethical use of digital resources.
		6-8.AP.PD.04 Test and refine programs using a range of test cases.	Lesson 8: Project - Propose an App: Students will test their app designs using various test cases to identify and fix issues, refining their programs to ensure they work as intended.
		6-8.AP.PD.05 Manage project tasks and timelines when collaboratively developing computational artifacts.	Lesson 1: Intro to Problem Solving: Students will practice collaboration and time management while working in groups to design aluminum foil boats. Lesson 8: Project - Propose an App: Throughout the project, students will manage tasks and timelines collaboratively, ensuring they complete their app designs within the given timeframe.
Concept	**Subconcept**	**By the End of the 8th Grade**	**Resources/Materials/**

			Assessments
Impacts of Computing	Culture	6-8.IC.C.01 Compare tradeoffs associated with computing technologies that have impacted people's activities, careers and lives when solving global problems using the power of computing.	Resources: CTS CIPA training video, online safety pledge and websites such as www.code.org Computer Science Discoveries Web Development Unit Assessment: TSW watch safety video, identify the technology they use at home and at school. TSW discusses ways computers impact the daily lives of those around them.
		6-8.IC.C.02 Discuss issues of bias and accessibility in the design of existing technologies.	Resources: Chromebooks Assessment: TSW utilize accessibility features on their chromebooks to create a document of vocabulary words. These accessibility features will include speech to text, text to speech, font choices and sizes, display brightness, and zoom. 7th and 8th grade students will design and create a website with accessibility features such as font size and color.
	Social Interaction	6-8.IC.SI.01 Collaborate through strategies such as crowdsourcing or surveys when creating a computational artifact.	Resources: Chromebooks and Google Sheets/Forms Assessment: TSW create a table and a chart with favorite drink, snack, etc with their classmates.
	Safety, Law & Ethics	6-8.IC.SLE.01 Describe tradeoffs between allowing information to be public and keeping information private and secure.	Resources: CTS CIPA training video, online safety pledge and websites such as www.code.org Computer Science Discoveries Web Development Unit Assessment: TSW watch safety video, identify the technology they use at home and at school. TSW discuss ways computers impact the daily lives of those around them.

Fifth - Eighth Summary - Each Grade BUILDS on what they learned the year before.

Children's Internet Protection Act (CIPA) - Each grade has lessons throughout the year (starting on day one) to make sure we are following the Children's Internet Protection Act (CIPA). Integrating these standards into the curriculum ensures that students are educated about responsible and safe Internet use, aligning with CIPA's requirements. This comprehensive approach not only helps the school maintain E-rate funding compliance but also fosters a safe and positive online environment for students. The additional Computer Science lessons contribute to meeting CIPA requirements by fostering awareness of internet safety, promoting responsible use of technology, and encouraging practices that protect electronic information from unauthorized access or exposure to harmful content.

5th & 6th - Use all of Google Apps successfully. Research with more precision. Students in Middle school are able to search the Internet more freely for classroom research or just to answer questions they are curious about (sports scores, favorite music artists, etc) Utilize Google Drive to organize files, Google gmail to communicate, Google Classroom to complete and turn in assignments. Utilize technology to practice and study classroom objectives. Students can create study guides, practice tests, and even games to help study. In fifth and sixth grade students use chromebooks to take reading and math district level tests as well as reading, math, and science MAP tests.

7th & 8th - These classes are a culmination of everything we have learned in technology class so far. Students will be able to go to high school and manage their technology use for success (all Google Apps) Students will also learn to code in HTML and other coding languages to create digital projects including a website. Students will also be able to name the basic components of a computer and complete basic troubleshooting on their Chromebooks. In 7th and 8th grade students use their chromebooks to take reading and math district level tests as well as reading, math and science MAP tests and ELA EOC tests.