

WDHS Curriculum Map  
 Course: Introduction to Computer Science 1

Time Interval/ Content	Standards/ Strands	Essential Questions	Skills	Assessment
Unit 1: Introduction to Turtle Art and Scratch  2 weeks  <i>Learn to Program            with Scratch</i> Chapter 1	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - <i>[Standard]</i> - Make sense of problems and persevere in solving them.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - <i>[Standard]</i> - Reason abstractly and quantitatively.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - <i>[Standard]</i> - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - <i>[Standard]</i> - Model with mathematics.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - <i>[Standard]</i> - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - <i>[Standard]</i> - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - <i>[Standard]</i> - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - <i>[Standard]</i> - Look for and express regularity in repeated reasoning.</p> <p><b>TECH.8.1.12.A.3</b> - <i>[Cumulative Progress Indicator]</i> - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p>	<p>What is computer science?</p> <p>How does one think like a computer scientist?</p> <p>How are computer programming languages different from each other? In what ways are they similar?</p>	<p>Students will understand that...</p> <ul style="list-style-type: none"> <li>● Creating a computer application of their own design is very exciting and a thing of beauty.</li> </ul> <p>Students will know...</p> <ul style="list-style-type: none"> <li>● To get a computer to perform a task, one must be fluent in using the instructions that the computer understands.</li> <li>● The instructions that run the computer (code) are written in an integrated development environment (IDE) (e.g. the Turtle Art IDE or the Scratch IDE).</li> <li>● The IDE is used to run the code or execute the application.</li> </ul> <p>Students will be able to...</p> <ul style="list-style-type: none"> <li>● Immediately write a simple program in Turtle Art without teacher assistance.</li> <li>● See patterns in code that can be simplified using loops or procedures.</li> <li>● Realize that a programmer needs to understand the tools</li> </ul>	<ul style="list-style-type: none"> <li>● Homework</li> <li>● Classwork</li> <li>● Quiz</li> <li>● Test</li> </ul> <p>Turtle Art Projects:</p> <ul style="list-style-type: none"> <li>● Geometric Figures</li> <li>● Rainbow</li> <li>● Windmill</li> </ul> <p>Scratch Projects:</p> <ul style="list-style-type: none"> <li>● Geometric Figures</li> <li>● Rainbow</li> <li>● Windmill</li> </ul>

	<p><b>TECH.8.1.12.B.CS1</b> - [<i>Content Statement</i>] - Apply existing knowledge to generate new ideas, products, or processes.</p> <p><b>TECH.8.1.12.B.CS2</b> - [<i>Content Statement</i>] - Create original works as a means of personal or group expression.</p> <p><b>TECH.8.1.12.B.2</b> - [<i>Cumulative Progress Indicator</i>] - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.</p> <p><b>TECH.8.1.12.E.CS3</b> - [<i>Content Statement</i>] - Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.</p> <p><b>TECH.8.1.12.F.CS2</b> - [<i>Content Statement</i>] - Plan and manage activities to develop a solution or complete a project.</p> <p><b>TECH.8.2.12.A.2</b> - [<i>Cumulative Progress Indicator</i>] - Analyze a current technology and the resources used, to identify the trade-offs in terms of availability, cost, desirability and waste.</p> <p><b>TECH.8.2.12.E.3</b> - [<i>Cumulative Progress Indicator</i>] - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - [<i>Cumulative Progress Indicator</i>] - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).</p>		<p>in the IDE that are used for finding errors in programs that don't run or behave mysteriously. This process of finding errors and correcting them is called debugging.</p> <ul style="list-style-type: none"> <li>● Create intricate and beautiful artistic drawings in Turtle Art using the repeat command.</li> <li>● Experiment with the Scratch Programming Environment including the stage, sprites, costumes, sounds, paint editor by building a pong game.</li> </ul>	
<p>Unit 2: Motion, Drawing, Looks, and Sound</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - [<i>Standard</i>] - Make sense of problems and persevere in solving them.</p>	<p>How are objects manipulated in a program?</p>	<p>Students will understand that...</p> <ul style="list-style-type: none"> <li>● The use of motion and sound makes a program's user experience fun and engaging.</li> </ul>	<ul style="list-style-type: none"> <li>● Homework</li> <li>● Classwork</li> <li>● Quiz</li> <li>● Test</li> </ul>

<p>3 weeks</p> <p><i>Learn to Program with Scratch</i> Chapter 2-3</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - [Standard] - Reason abstractly and quantitatively.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - [Standard] - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - [Standard] - Model with mathematics.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - [Standard] - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - [Standard] - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - [Standard] - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - [Standard] - Look for and express regularity in repeated reasoning.</p> <p><b>TECH.8.1.12.A.1</b> - [Cumulative Progress Indicator] - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.</p> <p><b>TECH.8.1.12.A.3</b> - [Cumulative Progress Indicator] - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p> <p><b>TECH.8.1.12.B.2</b> - [Cumulative Progress Indicator] - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.</p> <p><b>TECH.8.1.12.C.CS1</b> - [Content Statement] - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.</p>	<p>How are these manipulations shared between the user and the computer?</p> <p>How do you design a program or game so that the playing experience is fun and not too tedious?</p>	<ul style="list-style-type: none"> <li>Scratch can be used to create games, simulations, and animated stories.</li> </ul> <p>Students will know...</p> <ul style="list-style-type: none"> <li>How to interface with the user via the mouse and keyboard.</li> <li>Animating sprites is essential for making a game.</li> <li>Computer graphics do not have to be built from scratch, borrowed from the Scratch library.</li> </ul> <p>Students will be able to...</p> <ul style="list-style-type: none"> <li>Animate sprites by changing costumes and move them around the stage using absolute and relative motion commands.</li> <li>Draw artistic, geometric patterns using the repeat block and the stamp command.</li> <li>Create games.</li> <li>Create a dance scene with commands from the looks and Sound palettes.</li> <li>Clone sprites.</li> <li>Add music to an application-play audio files, drum sounds, and musical notes.</li> </ul>	<p>Scratch Projects</p> <ul style="list-style-type: none"> <li>Interaction with Makey Makey board</li> <li>Get the Money game (pg 36)</li> <li>Catching Apples game (pg 40)</li> <li>Balloon Blast game (pg 46)</li> <li>Dancing on Stage animation (pg 57)</li> <li>Fireworks animation (pg 60)</li> <li>Aquarium animation (pg 64)</li> <li>Nature animation (pg 66)</li> </ul>
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	<p><b>TECH.8.1.12.D.1</b> - [Cumulative Progress Indicator] - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.</p> <p><b>TECH.8.1.12.E.CS2</b> - [Content Statement] - Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.</p> <p><b>TECH.8.1.12.E.CS3</b> - [Content Statement] - Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.</p> <p><b>TECH.8.2.12.B.1</b> - [Cumulative Progress Indicator] - Research and analyze the impact of the design constraints (specifications and limits) for a product or technology driven by a cultural, social, economic or political need and publish for review.</p> <p><b>TECH.8.2.12.E.1</b> - [Cumulative Progress Indicator] - Demonstrate an understanding of the problem-solving capacity of computers in our world.</p> <p><b>TECH.8.2.12.E.3</b> - [Cumulative Progress Indicator] - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - [Cumulative Progress Indicator] - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).</p>			
<p>Unit 3: Procedures and Variables  3 weeks</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - [Standard] - Make sense of problems and persevere in solving them.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - [Standard] - Reason abstractly and quantitatively.</p>	<p>In what ways do procedures allow for a more readable and useful program?</p>	<p>Students will understand that...</p> <ul style="list-style-type: none"> <li>● Procedures support taking a “divide and conquer” approach to programming. Instead of building a program as one big</li> </ul>	<ul style="list-style-type: none"> <li>● Homework</li> <li>● Classwork</li> <li>● Quiz</li> <li>● Test</li> </ul>

<p><i>Learn to Program with Scratch</i> Chapter 4-5</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - [Standard] - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - [Standard] - Model with mathematics.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - [Standard] - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - [Standard] - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - [Standard] - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - [Standard] - Look for and express regularity in repeated reasoning.</p> <p><b>TECH.8.1.12.A.1</b> - [Cumulative Progress Indicator] - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.</p> <p><b>TECH.8.1.12.A.3</b> - [Cumulative Progress Indicator] - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p> <p><b>TECH.8.1.12.B.2</b> - [Cumulative Progress Indicator] - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.</p> <p><b>TECH.8.1.12.C.CS1</b> - [Content Statement] - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.</p>	<p>What decisions must be made when declaring and assigning variables?</p>	<p>piece, the program is divided into a subset of smaller tasks called procedures.</p> <ul style="list-style-type: none"> <li>● Procedures make a program easier to write, test, and debug.</li> <li>● Procedures cause sprites to draw shapes, perform complex computations, process user input, sequence musical notes, manage games, and many other things.</li> <li>● Sprites may need to communicate with other asynchronously. This is accomplished by message broadcasting and receiving.</li> <li>● The computer hardware interpretation of a variable is a piece of memory (like a mailbox).</li> <li>● A duplicate of a sprite is called a clone. If multiple balls are falling from the sky, those balls are clones of the parent ball - the first instance of the ball sprite.</li> </ul> <p>Students will know...</p> <ul style="list-style-type: none"> <li>● A procedure is a sequence of commands that performs a specific function.</li> <li>● Message broadcasting is the method to use when multiple sprites need to communicate their activity with each other.</li> </ul>	<p>Scratch Projects:</p> <ul style="list-style-type: none"> <li>● Flower Flake (fractal) (pg 87)</li> <li>● Pressure Under Water (pg 90)</li> <li>● Dice Simulator (pg 97)</li> <li>● Sphere Volume and Surface Area (pg 111)</li> <li>● Arithmetic Operations (pg 119)</li> <li>● Whac-a-Mole (pg 122)</li> </ul>
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	<p><b>TECH.8.1.12.F.CS2</b> - [<i>Content Statement</i>] - Plan and manage activities to develop a solution or complete a project.</p> <p><b>TECH.8.2.12.E.1</b> - [<i>Cumulative Progress Indicator</i>] - Demonstrate an understanding of the problem-solving capacity of computers in our world.</p> <p><b>TECH.8.2.12.E.3</b> - [<i>Cumulative Progress Indicator</i>] - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - [<i>Cumulative Progress Indicator</i>] - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).</p>		<ul style="list-style-type: none"> <li>● Each sprite has a list of properties associated with it, including its current position.</li> <li>● An inherited property of a sprite starts out identical to the parent's property at the time the clone is created. But after that, if the clone's attributes and variables change, those changes don't affect the parent.</li> <li>● When calling a procedure, its arguments must match the variable type defined by its respective parameter.</li> <li>● When you clone a sprite, the clone inherits copies of the parent sprite's attributes, including its variables.</li> </ul> <p>Students will be able to...</p> <ul style="list-style-type: none"> <li>● Use Custom Blocks to create procedures.</li> <li>● Pass parameters to Custom Blocks (types: number, string or Boolean).</li> <li>● Use nested procedures.</li> <li>● Communicate among sprites with message broadcasting and receiving.</li> <li>● Use cloned sprites effectively.</li> <li>● Use a flowchart as a tool to decide what procedures to write - how to break a program down into procedures.</li> </ul>	
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<p>Unit 4: Decision Making and Loops</p> <p>3 weeks</p> <p><i>Learn to Program with Scratch</i> Chapter 6-7</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - [Standard] - Make sense of problems and persevere in solving them.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - [Standard] - Reason abstractly and quantitatively.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - [Standard] - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - [Standard] - Model with mathematics.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - [Standard] - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - [Standard] - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - [Standard] - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - [Standard] - Look for and express regularity in repeated reasoning.</p> <p><b>TECH.8.1.12.A.1</b> - [Cumulative Progress Indicator] - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.</p> <p><b>TECH.8.1.12.A.3</b> - [Cumulative Progress Indicator] - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p> <p><b>TECH.8.1.12.B.2</b> - [Cumulative Progress Indicator] - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.</p>	<p>How are conditional statements used to enhance a program?</p> <p>How are repetition structures used to enhance a program?</p>	<p>Students will understand that...</p> <ul style="list-style-type: none"> <li>Conditionals allow a program to make decisions about which lines of code run and which do not.</li> <li>Conditionals allow actions to take place only when a specific condition is met.</li> <li>Conditionals allow a program to behave differently depending on the values of their variables.</li> <li>Nested loops are useful for solving iterative problems.</li> </ul> <p>Students will know...</p> <ul style="list-style-type: none"> <li>The utility of the following conditional structures:: if/else, if/then/else, repeat until, forever if, do while, for loop, logical operators ( and, or, or not).</li> </ul> <p>Students will be able to...</p> <ul style="list-style-type: none"> <li>Use decision-making and looping structures efficiently.</li> <li>Troubleshoot errors.</li> <li>Use flow charts as an organization and debugging tool.</li> </ul>	<ul style="list-style-type: none"> <li>Homework</li> <li>Classwork</li> <li>Quiz</li> <li>Test</li> </ul> <p>Scratch Projects</p> <ul style="list-style-type: none"> <li>Area Calculator (pg 132)</li> <li>Line Follower (pg 146)</li> <li>Rock-Paper-Scissors (pg 151)</li> <li>Password Check (pg 164)</li> <li>Nested Loops (pg 167-168)</li> <li>Bird Shooter (pg 173)</li> <li>Projectile Motion Simulator (pg 179)</li> <li>Chatbot</li> </ul>
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	<p><b>TECH.8.1.12.C.CS1</b> - [<i>Content Statement</i>] - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.</p> <p><b>TECH.8.1.12.D.1</b> - [<i>Cumulative Progress Indicator</i>] - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.</p> <p><b>TECH.8.2.12.E.1</b> - [<i>Cumulative Progress Indicator</i>] - Demonstrate an understanding of the problem-solving capacity of computers in our world.</p> <p><b>TECH.8.2.12.E.3</b> - [<i>Cumulative Progress Indicator</i>] - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - [<i>Cumulative Progress Indicator</i>] - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).</p>			
<p>Unit 5: String Processing and Lists</p> <p>3 weeks</p> <p><i>Learn to Program with Scratch</i> Chapter 8-9</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - [<i>Standard</i>] - Make sense of problems and persevere in solving them.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - [<i>Standard</i>] - Reason abstractly and quantitatively.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - [<i>Standard</i>] - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - [<i>Standard</i>] - Model with mathematics.</p>	<p>How can string manipulation be used as a practical application in a program?</p> <p>What role do lists play in creating more powerful and complex programs?</p>	<p>Students will understand that</p> <ul style="list-style-type: none"> <li>● String Processing is an important programming skill.</li> <li>● Lists are superior to variables when storing multiple pieces of related data (i.e. friends' phone numbers, birthdays of every student in your class, your test scores this marking period).</li> </ul> <p>Students will know...</p>	<ul style="list-style-type: none"> <li>● Homework</li> <li>● Classwork</li> <li>● Quiz</li> <li>● Test</li> </ul> <p>Scratch Projects:</p> <ul style="list-style-type: none"> <li>● Palindrome (pg 187)</li> <li>● Unscramble (pg 193)</li> <li>● Shoot (pg 195)</li> <li>● Hangman (pg 201)</li> <li>● Compare Fractions (pg 211)</li> <li>● Find Average (pg 225)</li> </ul>

	<p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - <i>[Standard]</i> - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - <i>[Standard]</i> - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - <i>[Standard]</i> - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - <i>[Standard]</i> - Look for and express regularity in repeated reasoning.</p> <p><b>TECH.8.1.12.A.1</b> - <i>[Cumulative Progress Indicator]</i> - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.</p> <p><b>TECH.8.1.12.A.3</b> - <i>[Cumulative Progress Indicator]</i> - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p> <p><b>TECH.8.1.12.B.2</b> - <i>[Cumulative Progress Indicator]</i> - Apply previous content knowledge by creating and piloting a digital learning game or tutorial.</p> <p><b>TECH.8.1.12.C.CS1</b> - <i>[Content Statement]</i> - Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media.</p> <p><b>TECH.8.1.12.D.1</b> - <i>[Cumulative Progress Indicator]</i> - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.</p> <p><b>TECH.8.1.12.F.CS2</b> - <i>[Content Statement]</i> - Plan and manage activities to develop a solution or complete a project.</p>		<ul style="list-style-type: none"> <li>● String is a data type. Strings are stored as a sequence of characters.</li> <li>● List is a data type. Lists are dynamic - it can grow and shrink as a program runs.</li> <li>● List elements can be strings or numbers.</li> </ul> <p>Students will be able to...</p> <ul style="list-style-type: none"> <li>● Access individual characters of a string to combine them, compare them, remove them, and shuffle them around.</li> <li>● Create and manipulate lists (add, delete, insert, replace, find item of).</li> <li>● Initialize and access individual elements in a list.</li> <li>● Use basic sorting and search techniques (i.e. Bubble Sort).</li> <li>● On numerical lists, find the mean, median, and mode.</li> </ul>	<ul style="list-style-type: none"> <li>● Find Median (pg 231)</li> <li>● The Poet (pg 232)</li> <li>● Math Wizard (pg 236)</li> </ul>
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	<p><b>TECH.8.2.12.E.1</b> - <i>[Cumulative Progress Indicator]</i> - Demonstrate an understanding of the problem-solving capacity of computers in our world.</p> <p><b>TECH.8.2.12.E.3</b> - <i>[Cumulative Progress Indicator]</i> - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - <i>[Cumulative Progress Indicator]</i> - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software, GUI, abstraction, variables, data types and conditional statements).</p>			
<p>Unit 6: Introduction to Processing</p> <p>3 weeks</p> <p><i>Learning Processing</i> Lessons 1-2</p>	<p><b>MA.K-12.CCSS.Math.Practice.MP1</b> - <i>[Standard]</i> - Make sense of problems and persevere in solving them.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP2</b> - <i>[Standard]</i> - Reason abstractly and quantitatively.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP3</b> - <i>[Standard]</i> - Construct viable arguments and critique the reasoning of others.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP4</b> - <i>[Standard]</i> - Model with mathematics.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP5</b> - <i>[Standard]</i> - Use appropriate tools strategically.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP6</b> - <i>[Standard]</i> - Attend to precision.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP7</b> - <i>[Standard]</i> - Look for and make use of structure.</p> <p><b>MA.K-12.CCSS.Math.Practice.MP8</b> - <i>[Standard]</i> - Look for and express regularity in repeated reasoning.</p>	<p>How are computer programming languages different from each other? In what ways are they similar?</p> <p>What is the value in writing a program from a visual standpoint?</p>	<p>Students will understand that...</p> <ul style="list-style-type: none"> <li>● Processing is a programming language built onto Java which emphasizes the importance of graphics and design.</li> <li>● Programs written in one language can often be rewritten in another language.</li> <li>● Each programming language has its strengths and limitations.</li> </ul> <p>Students will know...</p> <ul style="list-style-type: none"> <li>● The basics of the Processing development environment.</li> <li>● Basic function calls, assignment operations, and control structures in Processing.</li> <li>● Proper indentation and structure in code.</li> </ul> <p>Students will be able to...</p>	<ul style="list-style-type: none"> <li>● Homework</li> <li>● Classwork</li> <li>● Quiz</li> <li>● Test</li> </ul> <p>Processing Project:</p> <ul style="list-style-type: none"> <li>● Recreation of a favorite Scratch project</li> </ul>

	<p><b>TECH.8.1.12.A.1</b> - <i>[Cumulative Progress Indicator]</i> - Create a personal digital portfolio which reflects personal and academic interests, achievements, and career aspirations by using a variety of digital tools and resources.</p> <p><b>TECH.8.1.12.A.3</b> - <i>[Cumulative Progress Indicator]</i> - Collaborate in online courses, learning communities, social networks or virtual worlds to discuss a resolution to a problem or issue.</p> <p><b>TECH.8.1.12.D.1</b> - <i>[Cumulative Progress Indicator]</i> - Demonstrate appropriate application of copyright, fair use and/or Creative Commons to an original work.</p> <p><b>TECH.8.1.12.D.5</b> - <i>[Cumulative Progress Indicator]</i> - Analyze the capabilities and limitations of current and emerging technology resources and assess their potential to address personal, social, lifelong learning, and career needs.</p> <p><b>TECH.8.1.12.E.CS3</b> - <i>[Content Statement]</i> - Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.</p> <p><b>TECH.8.1.12.F.CS2</b> - <i>[Content Statement]</i> - Plan and manage activities to develop a solution or complete a project.</p> <p><b>TECH.8.2.12.E.1</b> - <i>[Cumulative Progress Indicator]</i> - Demonstrate an understanding of the problem-solving capacity of computers in our world.</p> <p><b>TECH.8.2.12.E.3</b> - <i>[Cumulative Progress Indicator]</i> - Use a programming language to solve problems or accomplish a task (e.g., robotic functions, website designs, applications, and games).</p> <p><b>TECH.8.2.12.E.4</b> - <i>[Cumulative Progress Indicator]</i> - Use appropriate terms in conversation (e.g., troubleshooting, peripherals, diagnostic software,</p>		<ul style="list-style-type: none"> <li>• Write and publish a basic program using the Processing language.</li> <li>• Make a drawing dynamic by having it interact with an input method (mouse or keyboard).</li> </ul>	
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	GUI, abstraction, variables, data types and conditional statements).			
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