

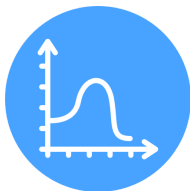
Creative Coding 1 Virginia Standards

The 4 units of this course align with the following **Middle School Computer Science Elective (MSCE) Standards:**



ALGORITHMS AND PROGRAMMING

- MSCSE.1** The student will design and iteratively develop programs that combine control structures, including loops and conditionals.
- MSCSE.2** The student will investigate variables and data types, including simple operations on strings.
- MSCSE.3** The student will implement a program that accepts input values, stores them in appropriately named variables, and produces output.
- MSCSE.4** The student will document programs in order to make them easier to trace, test, and debug.
- MSCSE.9** The student will systematically test and refine programs using a range of test cases.
- MSCSE.22** The student will work in a team to distribute tasks; maintain a timeline; and use iterative design to solve problems, including peer review and feedback.
- MSCSE.24** The student will create procedures with parameters to organize code and make it easier to reuse.



DATA AND ANALYSIS

- MSCSE.13** The student will collect data using computational tools and transform the data to make it more useful and reliable.
- MSCSE.14** The student will refine computational models based on the data they have generated.

Course Overview



CURRICULAR GOALS

- Learn JavaScript and programmer culture
- Identify as a programmer
- Use code to enhance and personalize visual media

MATERIALS REQUIRED

- One computer per 1-2 students
- Headphones (optional)
- Vidcode accounts
- Stable internet connection
- Chrome or Safari

	Scope	Virginia Middle School Computer Science Elective (MSCSE) Standards
<u>Unit 1</u> Introduction to programming: How to make things with code	<ul style="list-style-type: none"> - Functions and Arguments - Sequencing - Objects and Properties - X,Y Coordinates - Data Types 	<ul style="list-style-type: none"> • MSCSE.2 - The student will investigate variables and data types, including simple operations on strings. • MSCSE.22- The student will work in a team to distribute tasks; maintain a timeline; and use iterative design to solve problems, including peer review and feedback.
<u>Unit 2</u> The Creation Zone: Functions and Handling Data	<ul style="list-style-type: none"> - Arrays - Functions - Libraries 	<ul style="list-style-type: none"> • MSCSE.1 - The student will design and iteratively develop programs that combine control structures,including loops and conditionals. • MSCSE.2 - The student will investigate variables and data types, including simple operations on strings. • MSCSE.4 - The student will document programs in order to make them easier to trace, test, and debug.
<u>Unit 3</u> Animation and SFX: Loops and Randomness	<ul style="list-style-type: none"> - Loops - Manipulating Arrays - Commenting 	<ul style="list-style-type: none"> • MSCSE.1 - The student will design and iteratively develop programs that combine control structures,including loops and conditionals. • MSCSE.4 - The student will document programs in order to make them easier to trace, test, and debug.

		<ul style="list-style-type: none"> • MSCSE.13 - The student will collect data using computational tools and transform the data to make it more useful and reliable. • MSCSE.22- The student will work in a team to distribute tasks; maintain a timeline; and use iterative design to solve problems, including peer review and feedback.
<p>Unit 4 If and Else: Conditional Magic</p>	<ul style="list-style-type: none"> - Conditionals - Calling Functions - Function Scope - Commenting 	<ul style="list-style-type: none"> • MSCSE.1 - The student will design and iteratively develop programs that combine control structures, including loops and conditionals. • MSCSE.3 - The student will implement a program that accepts input values, stores them in appropriately named variables, and produces output. • MSCSE.9- The student will systematically test and refine programs using a range of test cases. • MSCSE.14- The student will refine computational models based on the data they have generated. • MSCSE.22- The student will work in a team to distribute tasks; maintain a timeline; and use iterative design to solve problems, including peer review and feedback. • MSCSE.24- The student will create procedures with parameters to organize code and make it easier to reuse.