* \*further materials and topics will be provided upon registration.

OVERVIEW:

In this course, students will experience working with Scratch, including handling sprites and backdrops, using logic, and creating simple games.

MONTH 1:

* Motion of sprites, Motion category
* Using loops, Control category
* Controlling Keys Pressed (inputs)
* Tag Game

MONTH 2:

* Sensing and Operators Category
* Looks Category
* Working with backdrops
* Simple Maze Game

MONTH 3:

* Sensing and Operators in-depth
* Working with Colors
* Working with variables
* Breaking up code into pseudo code/algorithms
* Complex Maze Game

END: Assessment (check for understanding)

* \*further materials and topics will be provided upon registration.
* - Different types of tags- headers and paragraph
* - Size of what different tags print
* - Bold, italics, strong tags
* - Subscript, superscript
* - HTML style and font colors
* - Making lists
* - Inserting links and images
* - CSS- background color and styles
  + Borders, margins, padding, boxes, etc.
  + Sectioning text throughout the page

\*further materials and topics will be provided upon registration.

* Printing
* Concatenation and casting of variables
* Variables in-depth and their types
* Taking in user inputs
* Conditionals (if-statements) to solve problems
* Boolean types and operators
* Loops (while loops and for loops)
* Generating random integers
* Strings and indices
* Arrays and indices
* Defining and calling functions
* \*further materials and topics will be provided upon registration.
* ALGEBRA:   
  - Scientific notation
* - Factoring
* - Roots of numbers
* - Rules of exponents
* - Literal equations
* - Simplifying algebraic expressions
* - INTRO TO GRAPHING: Slope
* - Graphing linear equations with y-intercept and slope
* - Fraction/percentage/decimal problems
* GEOMETRY:
* - Introduction to π
* - Area and circumference of a circle
* - Sum of the angles in different polygons
* - Deriving area of complex figures

- Finding the missing angle given a polygon

* - Volume of more complex figures
* - Deriving the volume and surface area of figures
* - Area of rectilinear figures and composite/compound figures
* \*further materials and topics will be provided upon registration.
* ALGEBRA/ARITHMETIC:
* - Capacity and unit multipliers
* - More complex probability and combinations
* - Subtraction and addition of mixed time units
* - Roots of numbers
* - Triangulation
* - Counting number sequence: natural numbers, whole numbers, integers, rational/irrational
* - Tests of divisibility
* - Time and age problems
* GEOMETRY:
* - Intro to right triangles
* - Pythagorean theorem
* - Finding missing side lengths, area, and perimeter
* - Introduction to 3D figures + volume/SA
* - Area of complex figures (trapezoids, rhombi, kites, etc.), deriving the areas
* \*further materials and topics will be provided upon registration.
* ALGEBRA/ARITHMETIC:

1. Data sets and representations of data
2. Simple probability, combinations of objects
3. Intro to fractions, types of fractions
4. Multiplying and dividing fractions
5. Distance units with unit multipliers
6. Comparing percents, decimals, and fractions
7. Multiplying integers with different signs
8. Solving linear equations

GEOMETRY:

1. Intro to types of angles and polygons
2. Shapes, angles, types of sides
3. Area of complex figures
4. Perimeter of complex figures

* Finding unknown height and width given area and perimeter