



Computer Programming 1

Students will acquire knowledge of structured programming techniques and concepts appropriate to developing executable programs and documentation. Students will analyze social responsibilities, apply technical skills, and utilize job related skills.

<p>1st Six Weeks</p> <ul style="list-style-type: none"> • Introduction to programming • Programming in Scratch • Exploring Raspberry Pi's • Updating Raspberry Pi's • Getting Started with Pi Interface • Data Types • Variables • Printing • Numbers and Math • User Input • Comments • Writing Programs • Guess the Number Game • Trivia Game • Joke-Telling Game 	<p>2nd Six Weeks</p> <ul style="list-style-type: none"> • Working with Lists • 'If' statements • Dictionaries • Branching, While Loops and Program Planning • Nested Loops • Graphical User Interfaces • Decisions • The Word Jumble Game • Tuples • For Loops • Using the Debugger • Functions • Boolean Operators • Return Values 	<p>3rd Six Weeks</p> <ul style="list-style-type: none"> • Dragon Realm • Tic-Tac-Toe Game • Sprites • Modules, Classes, and Objects • Designing Hangman • Extending Hangman • Randomness - Take a Chance • Bagels Deduction Game • Cartesian Coordinate System • Sonar Treasure Hunt • Caesar Cipher • Reversegam Game • Reversegam AI Simulation •
<p>4th Six Weeks</p> <ul style="list-style-type: none"> • Classes • Reading and Writing Files • Files and Exceptions • Testing Your Code • Generalizing Data • Downloading Data • Alien Invasion: • Aliens, ships and scoring • Creating Graphics • Sprites • Events • GUI Development: Mad Lib Program 	<p>5th Six Weeks</p> <ul style="list-style-type: none"> • Graphics: Pizza Panic Game • Learning to Speak Object-Oriented • Is-A, Has-A, Object and Classes • Object-Oriented Programming: Blackjack Game • Inheritance vs. Composition • Software Objects: The Critter Caretaker Program • Animating Graphics • Collision Detection • Using Sounds and Images 	<p>6th Six Weeks</p> <ul style="list-style-type: none"> • Astrocrash Game • Dodger Game • Your First Website • Getting Input from a Browser • The Start of Your Web Game • How to learn any programming language • Using Django • Styling and Deploying an App • Additional Programming Projects

