



Computer Science 1

Introductory computer course that empowers students to create authentic products and engage with computers and computer science as a medium for creativity, communication, problem solving and fun.

<p>1st Six Weeks</p> <ul style="list-style-type: none"> • Personal Innovations • Sending Binary Messages • Sending Binary Messages with the Internet Simulator • Number Systems • Binary Numbers • Sending Numbers • Encoding and Sending Formatted Text • The Internet • the Need for Addressing • Routers and Redundancy • Packets and Making a Reliable Internet • The Need for DNS • HTTP and Abstraction • The Internet and Society 	<p>2nd Six Weeks</p> <ul style="list-style-type: none"> • Bytes and File Sizes • Text Compression • Encoding B&W Images • Encoding Color Images • Lossy Compression and File Formats • Encode an Experience • Intro to Data • Finding Trends with Visualizations • Check Your Assumptions • Good and Bad Data Visualizations • Making Data Visualizations • Discover a Data Story • Cleaning Data • Creating Summary Tables • Tell a Data Story 	<p>3rd Six Weeks</p> <ul style="list-style-type: none"> • The Need for Programming Languages • The Need for Algorithms • Creativity in Algorithms • Using Simple Commands • Creating Functions • Functions and Top-Down Design • APIs and Function Parameters • Creating Functions with Parameters • Looping and Random Numbers • Design a Digital Scene
<p>4th Six Weeks</p> <ul style="list-style-type: none"> • What is Big Data? • Rapid Research - Data Innovations • Identifying People with Data • The Cost of Free • Simple Encryption • Encryption with Keys and Passwords • Public Key Crypto • Rapid Research - Cybercrime • Big Data and Security Dilemmas • Longitudinal Study • Buttons and Events • Multi-screen Apps • Building an App: Multi-Screen App • Controlling Memory with Variables 	<p>5th Six Weeks</p> <ul style="list-style-type: none"> • Building an App: Clicker Game • User Input and Strings • "If" Statements • Boolean Expressions and "If" Statements • "if-else-if" and Conditional Logic • Building an App: Color Slueth • Programming with Data Structures • Loops and Simulations • Introduction to Arrays • Building an App: Image Scroller 	<p>6th Six Weeks</p> <ul style="list-style-type: none"> • Processing Arrays • Functions with Return Values • Building an App: Canvas Painter • Create •