

Computer Science and Beginner Coding

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Objective: To develop a well-rounded understanding of computers, including their history, architecture, and functions, and to introduce the skills needed to build and program them.

Note: Younger classes will work longer on the introductory portion of this curriculum, pushing Minecraft Education Coding to a later date and eliminating Bitsbox, as it is designed for students that are proficient at typing. The exact dates will depend entirely on the pace of each classroom of students.

Syllabus:

Fall 2024

INTRODUCTION - Make a Lapbook that covers basic concepts and can be referenced at a later date

Week 1 (Aug 26-30) - What is a Computer? *Computer History Timeline, make an abacas*

Week 2 (Sep 2-6) - What's inside a Computer? *Computer Architecture, 3-Part Cards, Paper Computer*

Week 3 (Sep 9-13) - How Does a Computer Work? *Binary, light up your computer*

Week 4 (Sep 16-20) - How Does a Computer Solve Problems? *Logic Gates*

Week 5 (Sep 23-27) - What is Computational Thinking? *Hello Ruby, Algorithm Game, Lego Bits and Bricks*

Week 6 (Sep 30- Oct 4) -How Do People Program Computers? *Code Sprite Movement in SCRATCH*

Week 7 (Oct 7-11) - Fun and Games! *Code a Clicker Game in SCRATCH*

Fall Break Oct 14-18

APPLICATION - Demonstrate understanding in fun Minecraft scenarios

Week 8 (Oct 21-25) - Minecraft Education Edition - Block Coding

Week 9 (Oct 28 - Nov 1) - Minecraft Education Edition - Block Coding

Week 10 (Nov 4-8) - Minecraft Education Edition - Block Coding

Week 11 (Nov 11-15) - Minecraft Education Edition - Block Coding

Week 12 (Nov 18-22) - Minecraft Education Edition - Block Coding

Thanksgiving Break Nov 25-29

CHALLENGE - Use computational thinking to model and modify apps

Week 3 (Dec 2-6) - Bitsbox Apps

Week 14 (Dec 9-11) - Bitsbox Apps

Week 15 (Dec 16-20) - Bitsbox Apps