



Computer Science Fundamentals

4th grade

Programming Language:

Scratch

Software used in Course:

Scratch

Supported Devices

Mac

Windows

Chromebook

iPad (no audio)

Instructional Models:

Direct Instruction

Instructional Scolding

Use of Learning Objectives

Relevant Vocabulary

Bloom's Taxonomy or Questions

Inquiry-Based Instruction

Project-Based Instruction

Cooperative Learning

Independent Study

Supported Learning Models:

Classroom

Blended

Hybrid

Synchronous

Asynchronous

Standards Aligned:

National and State

Computer Science

Standards

Reinforces:

Math

ELA

Social-Emotional Learning

Course Description

Establish fundamental computer science skills. Build criteria driven projects through using Scratch, a block coding language. Apply previously learned concepts like functions, variables, conditionals, while expanding knowledge of new coding strategies, like comparison operators and parameters. Unplugged and Digital Citizenship lessons discuss ethical Internet behaviors, problem solving strategies, and a variety of STEM careers. At the end of this course, students will have practiced basic programming concepts and expanded their understanding of block coding.

Learning Objectives

Each lesson plan is designed to enable students to achieve specific learning outcomes related to course aligned computer science competencies. For example, at the end of this course students will be able to:

- Identify variables, loops, and conditionals in code and predict the output of functions.
- Demonstrate knowledge of how comparison operators function by developing and identifying examples.
- Interpret and apply project criteria to independently plan and create a finished product.
- Summarize how parameters work in code to make functions reusable.
- Define phishing and measure the relative safety of different types of online communication.
- Identify situations which necessitate providing attribution for borrowed work and write grade-level appropriate attributions.