



# Computer Science Fundamentals

5th grade

## Programming Language:

Scratch

## Software used in Course:

Scratch

## Supported Devices

Mac

Windows

Chromebook

iPad (no audio)

## Instructional Models:

Direct Instruction

Instructional Scaffolding

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

In this course, students review programming structures and experiment with new coding techniques using Scratch. During Unplugged and Coding lessons, students implement arrays and booleans in preparation for transitioning to text-based programming. In Digital Citizenship and STEM Career lessons, students discuss credible online sources, digital copyright, accessibility, and a variety of STEM careers. By the end of this course, students will be able to assess the impacts of computing on society and demonstrate advanced computational thinking and problem-solving skills.

## 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:

- Implement conditionals, arrays, and loops in code.
- Use criteria to independently build a project by applying an iterative design process .
- Summarize how boolean expressions control loops to create intended outputs.
- Judge healthy and unhealthy online behaviors and provide alternatives to negative behaviors.
- Describe the skills and duties of a robotics technician and summarize how emerging technologies may affect the field.