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 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 apply previously learned concepts to develop programs in Scratch, while expanding their repertoire of problem-solving strategies. Through Coding and Unplugged lessons, students continue to build upon their knowledge of variables, functions, loops, events, and conditionals. During Digital Citizenship and STEM Career lessons, students explore ethical and responsible technology use, troubleshooting techniques, and career opportunities. By the end of this course, students will be able to evaluate online activity and build projects using advanced programming concepts like parameters and comparison operators.

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:

- Demonstrate knowledge of comparison operators 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.
- Write appropriate grade-level attributions and identify situation that necessitate providing attributions.