CS Applications: Block-Based Programming

Grades 6-12

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 introductory block-based programming course, students explore fundamental computer science skills and programming structures using Scratch, a block coding language. Students implement variables, conditionals, and loops in Unplugged and Coding lessons to build Scratch projects. Digital Citizenship and STEM Career lessons provide opportunities for students to evaluate online activities, assess the impacts of computing on society, and consider a variety of STEM careers. By the end of this course, students will be equipped with the skills and knowledge necessary to confidently pursue advanced computer science courses.

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 variables, loops, arrays, operators, functions, and conditionals to identify how code blocks interact to create certain output.
- Collaboratively develop an app project plan to accomplish criteria, distribute tasks, and iteratively develop an app.
- Demonstrate an understanding of intellectual property rights and how to ethically use online content.
- Explain strategies for safe and secure Internet and device usage.