



# Computer Science Applications Java

8th grade

## Programming Language:

Java

## Software used in Course:

BlueJ

Repl.it

## Supported Devices

Mac

Windows

Chromebook

## 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

Deepen existing computer science skills and interest in programming. Learn fundamental computer science concepts using Java, an advanced line coding language. Explore loops, objects, methods, and classes. Develop computational thinking skills by building fitness trackers, basic calculators, and music applications, among others. Unplugged and Digital Citizenship lessons explore incorporating feedback, physical security measures, and a variety of STEM careers. At the end of this course, students will have practiced the computational thinking and analytical skills needed to prepare for AP Computer Science at the high school level.

## 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:

- Explain and establish variables of different data types.
- Construct and manipulate values by implementing arithmetic operators and mathematical methods.
- Seek and incorporate feedback to refine a program.
- Apply knowledge of conditionals to create a software program that serves a given purpose.
- Establish classes in code to create objects with specific attributes.
- Explain how physical security measures protect electronic devices and information.