

## Course Name: AP Computer Science A

Duration:  1 Semester  Full Year

Grade Level:  9th  10th  11th  12th (check all that apply)

### Are there any prerequisites for the course?

It is recommended that a student in the AP Computer Science A course has successfully completed a first-year high school algebra course.

### WHAT this course is about:

Computer Science A (CSA) introduces students to software engineering and object-oriented programming and design using the Java programming language. This curriculum covers a broad range of topics, including the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data and discover new information, the analysis of potential solutions, and the ethical and social implications of computing systems.

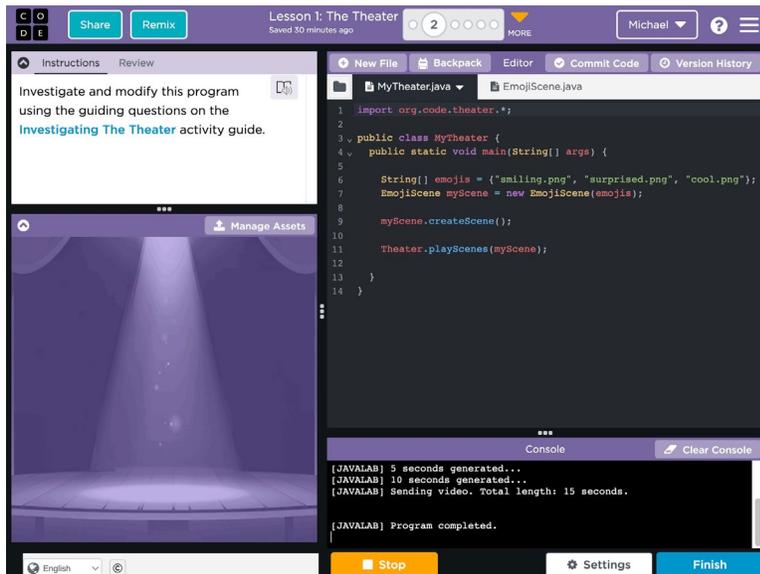
### WHY take this course:

Introduction to software engineering and object-oriented design while you learn the Java programming language in this new curriculum for [AP<sup>®</sup> Computer Science A \(AP<sup>®</sup> CSA\)](#).



- Culturally responsive pedagogy
- Real-world problem investigation
- Explainer videos with diverse presenters
- Java Lab - a web-based Java programming environment
- Open-ended projects for more personalized learning
- Student friendly code review tool

### WHAT you'll learn:



With CSA from Code.org, students will:

- Learn in a user-friendly and visually rich multimedia environment
- Do software engineering work connected to the real world
- Analyze open-source code
- Collaboratively develop algorithms
- Gain experience writing and making sense of documentation

### WHAT you'll do:

Learn the Java programming language with project based learning.

### WHERE this could take you:

The exciting fields of Computer Science, and Software Engineering.

### OPTIONAL Course Outline (“scope and sequence”, sequence chart, etc.)

- Unit 1 – Object-Oriented Programming
- Unit 2 – Class Structure and Design
- Unit 3 – Arrays and Algorithms
- Unit 4 – Conditions and Logic
- Unit 5 – Two-Dimensional Arrays
- Unit 6 – ArrayLists and String Methods
- Unit 7 – Method Decomposition and Recursion
- Unit 8 – Searching and Sorting
- Unit 9 – AP Exam Review and Practice