

# AP Computer Science Principles COURSE DESCRIPTION

This AP Computer Science Principles course covers the College Board APCSP Exam curriculum including integral concepts such as sorting algorithms, JavaScript, data analysis and cybersecurity. This course will successfully prepare students for the APCSP Exam offered in May.

Whether you are getting ahead of the high school curriculum, aiming for better grades, or preparing for the AP Computer Science Principles exam, this class will give you the solid foundation needed to succeed. Fundamental and important concepts will be taught in great detail leaving students with a deeper understanding of the concepts. This course is designed for ninth grade and up in order to equip students with the computer skills necessary to excel in both the AP Computer Science Principles high school course as well as the College Board exam.

**Homework/Assignments:** Written homework or programming will be assigned.

**Tests:** APCSP Practice Exams and final project will be graded

## Lesson 1 - HTML and CSS Pt 1

HTML Hierarchy  
Tags and Formatting  
Lists and Tables  
Assignment: aboutme.html

## Lesson 2 - HTML and CSS Pt 2

CSS Selectors and Styling  
Resources and URLs  
Assignment: aboutme.html Continued

## Lesson 3 - Programming with Logo Pt 1

Sequential Execution and Commands  
Defining and Calling Functions  
Control Flow and Debugging  
Algorithms  
Assignment: Images in Logo

## Lesson 4 - Programming with Logo Pt 2

Pseudocode and Documentation  
Looping and Conditionals  
Reusable Code  
Assignment: Images in Logo Continued

## Lesson 5 - Programming JavaScript Pt 1

Variables, Types, and Math  
Input/Output and Printing  
Booleans and Boolean Operators  
Assignment: Format.js

## Lesson 4 - Programming JavaScript Pt 2

Decision Making Structures  
Functions  
Parameters and Return Values  
Assignment: Scene.js

## Lesson 5 - Programming JavaScript Pt 3

Arrays and Objects  
Data Abstraction and Iteration  
Assignment: Arrays.js

## Lesson 7 - Computer Hardware and Theory

CPU and Memory  
Chips and Logic Gates  
Modeling and Simulations  
Assignment: Simulation

## Lesson 8 - Digital Information

Data Abstractions  
Number System and Hexadecimals  
Encoding Numbers and Text  
Encoding Images and Color  
Compression and Encryption  
Assignment: Filtering Images

## Lesson 9 - The Internet

Impact of the Internet  
Networks and Routers  
IP and Packets  
Privacy and Cybersecurity  
Assignment: Computational Artifacts

## Lesson 10 - Data

Metadata and APIs  
Visualizations  
Storing Data  
Searching and Sorting Algorithms  
Predicting with Data Models  
Assignment: Analyzing Publicly Available Datasets

## Lesson 11 - AP Performance Tasks

Review Material  
Explore PT

## Lesson 12 - AP Performance Tasks

Review Material  
Create PT

## Lesson 13-17 - AP Exam Prep and Final Project

Barron's APCSP Practice Tests  
Final Project