



Course Overview

High School | AP Computer Science A - Last Updated on April 2, 2025

DESCRIPTION

K-12 Content Area | Mission & Philosophy Statement

- With confidence and perseverance, young people can tackle complex and novel mathematical challenges, becoming skilled problem solvers who take ownership over their learning process.
- Young people possess the ability to reason mathematically, make conjectures, solve problems and build understanding through effective dialogue and collaboration.
- Learners exhibit critical inquiry through the deliberate asking of questions and the integration of conceptual understanding, reasoning abilities, and procedural fluency.
- Strategically selecting materials, technology, and other resources support mathematical learning and aid in achieving mathematical goals. (NCTM, 2024)

Course Description

AP Computer Science A introduces students to computer science through programming. Fundamental topics in this course include 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. The course emphasizes object-oriented programming and design using the Java programming language. College Course Equivalent AP Computer Science A is equivalent to a first-semester, college-level course in computer science.

STANDARDS

College Board - AP Computer Science (2020)

APCS.PDAD.1A

APCS.PDAD.1B

APCS.PDAD.1C

APCS.CL.2A

APCS.CL.2B

APCS.CL.2C

APCS.CL.2D

APCS.CI.3A

APCS.CI.3B

APCS.CI.3C

APCS.CI.3D

APCS.CI.3E

APCS.CT.4A

APCS.CT.4B

APCS.CT.4C

APCS.D.5A

APCS.D.5B

APCS.D.5C

APCS.D.5D

COURSE OBJECTIVES

This course is aligned to College Board Advanced Computer Science A skills and objectives.



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ASSESSMENT TYPES

The following assessment types will be used during the course:

- Formative Assessments
- Summative Assessments

SUGGESTED METHODS OF INSTRUCTION

Below is a list of suggested strategies for high-quality instruction in Mathematics:

- Instructional components outlined in the *Framework for Teaching by Charlotte Danielson*
- Teacher-Centered Instruction
- Inquiry-Based Learning
- Small Group Instruction
- Cooperative Learning
- Student-Centered/Constructivist Approach
- Project-Based Learning
- Flipped Classroom

RESOURCES

District Approved Program Resources	District Approved Supplemental Resources	District Approved Technology Resources
<p>RunestoneAcademy-CSAwesome https://runestone.academy/ns/books/published/csawesome/index.html</p>	<p>College Board <i>AP Classroom</i> https://apclassroom.collegeboard.org/ Teacher created materials</p>	<p>TI84CE Graphing Calculators with Python Programming</p>