

AP Computer Science A (AP CS A)

2025-2026



Course Description:

<https://apstudents.collegeboard.org/courses/ap-computer-science-a>

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.

To succeed in this course, students should demonstrate:

- **Problem-Solving Skills:** Ability to break down problems and design step-by-step solutions using logic and algorithms.
- **Attention to Detail:** Writing and debugging code requires precision and careful analysis of errors.
- **Time Management:** completing independent assignments, projects, and readings on schedule.
- **Mathematical Reasoning:** Comfort with basic algebra and logical thinking for understanding algorithms and code flow.

The Computer Science A course includes over 160 hours of hands-on, structured lab experiences to engage students in individual or group problem solving. Thus, it includes a substantial lab component in which students design solutions to problems, express their solutions precisely (e.g., in the Java programming language), test their solutions, identify and correct errors, and compare possible solutions.

AP Exam Description and Sample Questions

Java Programming Certification alignment

Optional Resources to review this summer:

[Visual Studio Code IDE Download](#)
[Code.org's AP CS A Course](#)
[Book - Blown to Bits](#)

[Java Beginner by Coding with John](#)
[Full Java Course by Alex Lee](#)
[Full Java Course by Bro Code](#)

