AP® Computer Science A

BRING AP CSA TO YOUR SCHOOL

EXPLORE

ANALYZE

CREATE

A total of

1,856

colleges and universities have published their credit policies for satisfactory exam scores. New policies continue to be submitted.

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.

Teaching the Course

AP Computer Science A is a natural addition for teachers of foundational computing courses and AP Computer Science Principles. It gives teachers the opportunity to broaden their skills and knowledge in a rapidly expanding field. Teachers should consult their state and district certification requirements to determine if they're qualified to teach AP Computer Science A.

SUPPORTING TEACHERS

Professional learning opportunities offered by College Board, like AP Summer Institutes, one-day workshops, and AP Mentoring, are available for teachers of all experience levels. In addition, College Board endorses several outside organizations that offer ready-to-use AP Computer Science A curricula. The curricula come with preapproved syllabi that can be adopted through the AP Course Audit, lesson plans, and other instructional supports. These providers also offer professional learning opportunities to teachers.

Visit **collegeboard.org/apcsa-pd** for updates.

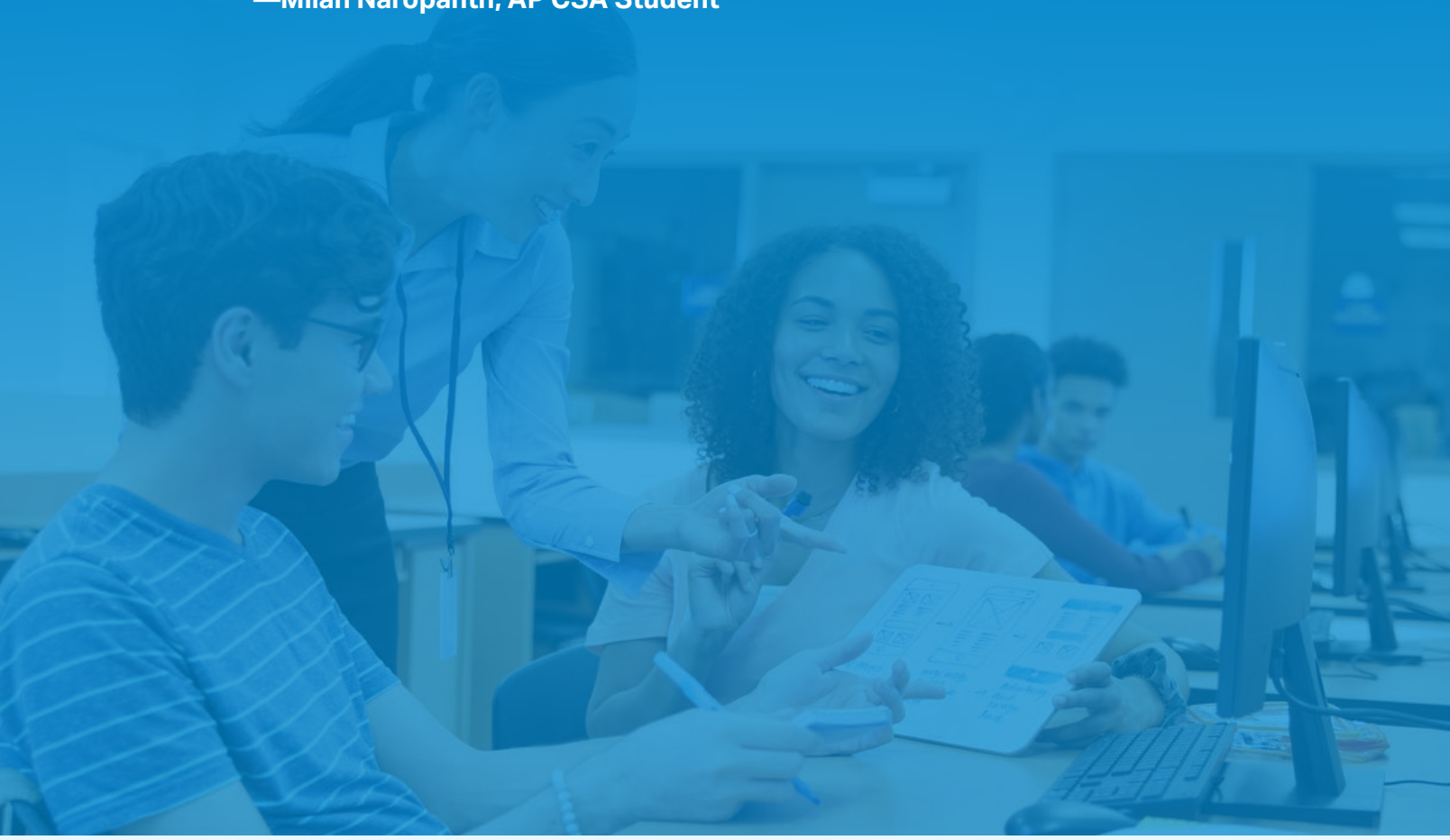
> **“AP CSA is an opportunity for students to grow and challenge themselves with problem-solving in a whole new way. Students see our digital world in a new light as they learn how programs are created and updated. This class often opens ideas for an exciting future that many students never knew could exist before taking AP CSA.”**
>
> —Sandy Czajka, Riverside Brookfield High School

Across Careers. Across Industries. Across the World.

AP Computer Science A enables students to take on more advanced programming problems by learning one of the most in-demand programming languages, Java, and building skills used by computer scientists to develop creative solutions to today’s problems. Recommended course prerequisites include high school algebra, and knowledge of functions and the concepts found in the uses of function notation. Skills emphasized in this course include:

- Designing a computer program.
- Writing the necessary code to implement a program.
- Testing program code and correcting errors.
- Documenting and explaining how program code works.

> **AP Computer Science A is different than many other AP courses I've taken because you get to be a creator. The class teaches you how to problem solve, how to think, and most importantly, how to collaborate."**
>
> **—Milan Naropanth, AP CSA Student**



The Bureau of Labor Statistics estimates there will be

11+ million

STEM jobs available within the next decade. Half will require a computer science degree, and all will require computer science skills.[1]

1. Source: https://www.bls.gov/emp/tables/stem-employment.htm

AP Computer Science A and AP Computer Science Principles

AP Computer Science A, although more oriented toward programming, complements AP Computer Science Principles, which focuses on the innovative aspects of computing and computational thinking. Students can take the courses in any order.

AP COMPUTER SCIENCE A

- Its curriculum is focused on object-oriented programming and problem-solving.
- Java is the designated programming language.

AP COMPUTER SCIENCE PRINCIPLES

- Its curriculum is built around fundamentals of computing. Students engage with the course content by developing computational artifacts and analyzing data, information, or knowledge represented for computational use.
- Teachers choose the programming language(s).

Student Recruitment

As an educator, you play an influential role in your students' decisions to take AP courses. Use evidence-based strategies found on **collegeboard.org/apcs-recruitment** to give all your students, including females and students of color who are traditionally underrepresented in computer science, the opportunity to take AP Computer Science A. Create policies that promote diversity in the course, and don't create barriers that discourage underrepresented groups from participating.

Learn how to bring AP Computer Science A to your school or district.

Visit **collegeboard.org/APCSA**.

COMPUTATIONAL THINKING PRACTICES

1. Design Code
2. Develop Code
3. Analyze Code
4. Document Code and Computing Systems
5. Use Computers Responsibly

UNIT GUIDES

UNIT 1: Using Objects and Methods

UNIT 2: Selection and Iteration

UNIT 3: Class Creation

UNIT 4: Data Collections

Code the Future

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