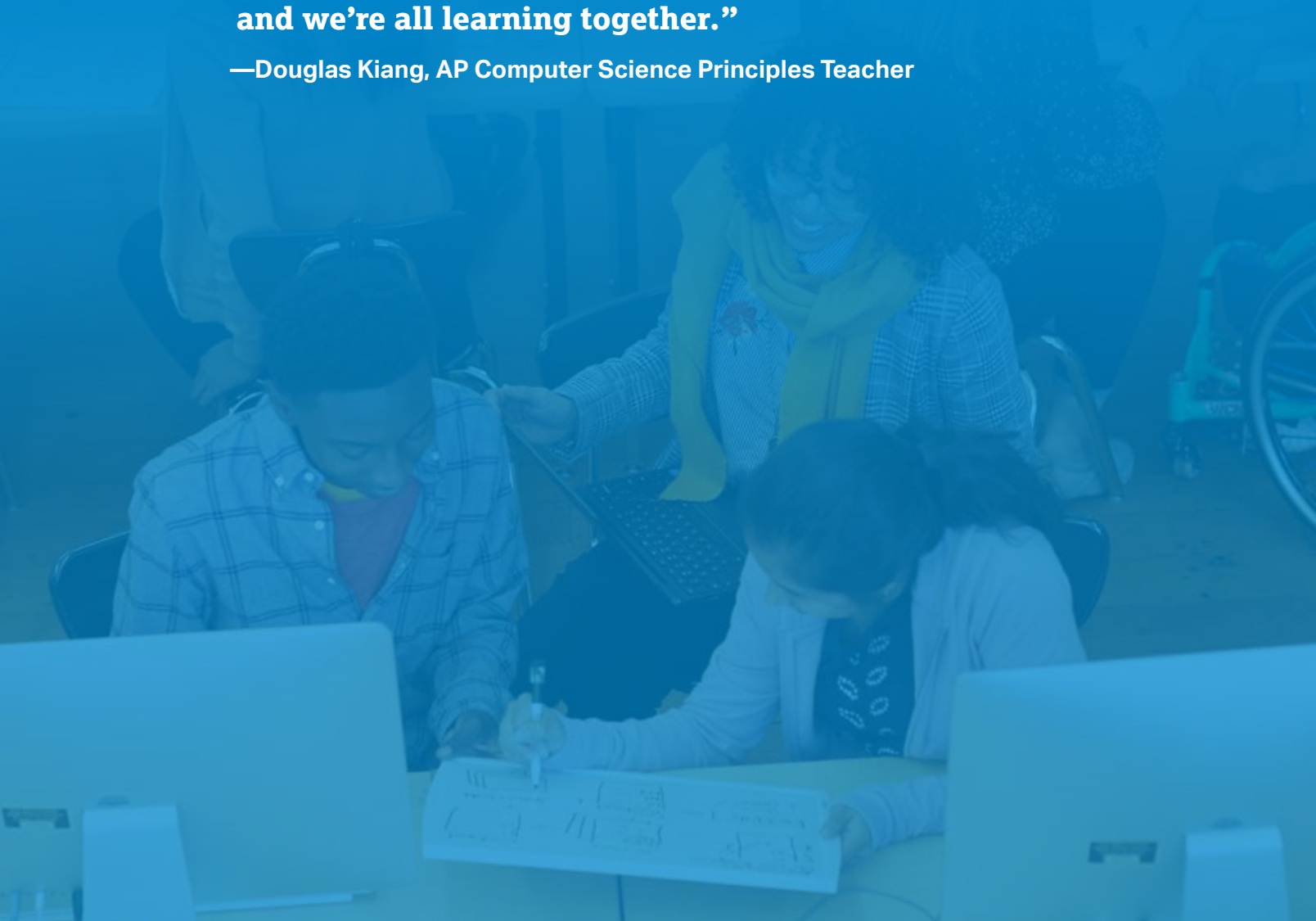# AP® Computer Science Principles

BRING AP CSP TO YOUR SCHOOL

CREATE

EXPLORE

INNOVATE

> "AP CSP and student-centered learning go hand-in-hand; no one is an expert in everything, and we're all learning together."
>
> —Douglas Kiang, AP Computer Science Principles Teacher

The Bureau of Labor Statistics estimates there will be

+9 million

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

AP Computer Science Principles

AP® Computer Science Principles (CSP) introduces students to the foundational concepts of computer science and challenges them to explore how computing and technology impact the world. Students don't need previous computer science experience to take this course.

With a unique focus on creative problem solving and real-world applications, AP CSP prepares students for college and career.

Computer Science: The New Literacy

Whether for 3-D animation, engineering, music, app development, medicine, visual design, robotics, or political analysis, computer science experience is essential for today's students and the workforce they'll enter.

AP CSP was designed to attract and engage a greater diversity of students, including those traditionally underrepresented in computer science, such as women and minorities.

Teaching the Course

AP CSP is a natural addition for teachers of foundational computing courses and AP Computer Science A. Because of the broad, multidisciplinary nature of the course, teachers in other disciplines such as STEM, the arts, or social sciences can teach AP CSP. It gives them the opportunity to broaden their skills and knowledge in a rapidly expanding field.

SUPPORTING TEACHERS
Professional development opportunities offered by the College Board, like AP Summer Institutes, one-day workshops, and AP Mentoring, are available for teachers. In addition, the College Board endorses a number of outside organizations that offer AP CSP curricula. These providers also offer professional development to teachers who will use their curriculum.

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

750+

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

Rigorously Developed

AP CSP was created with significant support from the National Science Foundation. The College Board also worked with high schools and higher education computer science educators who piloted the program at their institutions.

This rigorous process yielded a course that reflects the latest scholarship in the field and gives students a relevant and engaging learning experience.

Across Careers. Across Industries. Across the World.

AP CSP can help students prepare for success not only in computing majors and careers but also in a broad range of other fields and interests. Along with the fundamentals of computing, they'll learn:

- Creative problem solving
- How to apply computational processes to analyze large data sets
- Programming and global impacts of computing
- Internet structures and important cybersecurity issues

Students will also:

- Use computer science to address real-world issues that interest them
- Create programs or technology that have practical impact
- Gain skills relevant across other disciplines and industries

A Focus on Innovation and Computational Thinking

The AP Computer Science Principles Conceptual Framework focuses on the innovative aspects of computing and the computational thinking that helps students make connections to their everyday lives.

AP CSP is designed to open a pathway for students to continue studies in college-level STEM and computing courses, but it also positions them for success in a wide variety of disciplines and industries.

AP Computer Science A and AP Computer Science Principles

AP Computer Science Principles complements the more programming-oriented AP Computer Science A course. Students can take the courses in any order.

AP COMPUTER SCIENCE A

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

AP COMPUTER SCIENCE PRINCIPLES

- Curriculum is built around fundamentals of computing, and 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).

Recruit Students

As an educator, you play an influential role in your students' decisions to take AP courses. Use evidence-based strategies found on **collegeboard.org/cspresources** to give all of your students, including females and students of color who are traditionally underrepresented in computer science, the opportunity to take AP CSP. 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 Principles to your school or district.

Visit **collegeboard.org/APCSP**.

COMPUTATIONAL THINKING PRACTICES

- Abstraction in Program Development
- Algorithms and Program Development
- Code Analysis
- Computational Solution Design
- Computing Innovations
- Responsible Computing

BIG IDEAS OF AP COMPUTER SCIENCE PRINCIPLES

1. Creative Development
2. Data
3. Algorithms and Programming
4. Computer Systems and Networks
5. Impact of Computing

Create the Future

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

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