

Computer Science Principles

2020-21 Curriculum Overview

C O

D E

Why Computer Science? Every 21st century student should have the opportunity to learn computer science. The basics of computer science help nurture creativity and problem-solving skills, preparing students for a future in any field or career.

Advanced Placement Computer Science for All Students!



Code.org's Computer Science Principles is an introductory Advanced Placement (AP[®]) course designed to broaden participation in computer science. Code.org is recognized by the College Board as an endorsed provider of AP[®] Computer Science Principles curriculum and professional development. The Course has been reviewed by the College Board and is pre-approved to pass the audit. The professional development is also endorsed by the College Board as meeting (and exceeding) the standards of the AP[®] Summer Institutes.

Engaging Curriculum

Our team designed the AP[®] Computer Science Principles curriculum to support students and teachers new to the discipline. The curriculum includes daily lesson plans made up of inquiry-based activities, videos, assessments, and computing tools, allowing teachers to guide and learn alongside students as they discover core computing concepts.



One-Year Professional Learning Program

- **Summer:** Teachers attend a 5-day in-person workshop designed to introduce CS concepts from the curriculum, AP[®] elements of the course, and core teaching practices. (Travel may be required.)
- **School Year:** Teachers engage in continued learning through professional development workshops focused on supporting their first year of implementation.

Hundreds of teachers participate each year. They overwhelmingly agree:

“It’s the best professional development I’ve ever attended.”



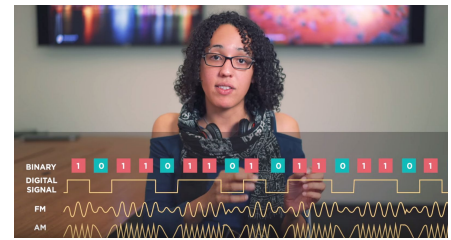
“I didn’t have much background in computer science, and thought: *Let’s try it.* I found out I loved it!”



“They make it so that you can understand the material and they make it so you want to come back!”

Curriculum Features

- Daily lesson plans include inquiry/equity-based pedagogy and background content
- Formative and summative assessments, project exemplars, and rubrics
- Widgets and simulators for exploring computing concepts like text compression and the Internet
- Concept and tutorial videos for students, and teaching tips-and-tricks videos for teachers
- Code.org -- a learning platform where students interact with lesson materials and tools, and where teachers access a dashboard to see student work and progress
- App Lab -- a JavaScript programming environment in Code Studio, designed for creating event-driven web apps with block-to-text workspace and debugging capabilities



Unit Overview

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| Unit 1 Digital Information | Explore how computers store complex information like numbers, text, images and sound and debate the impacts of digitizing information. |
| Unit 2 The Internet | Learn about how the Internet works and debate its impacts on politics, culture, and the economy. |
| Unit 3 Intro to App Design | Design your first app while learning both fundamental programming concepts and collaborative software development processes. |
| Unit 4 Variables, Conditionals, and Functions | Expand the types of apps you can create by adding the ability to store information, make decisions, and better organize code. |
| Unit 5 Lists, Loops, and Traversals | Build apps that use large amounts of information and pull in data from the web to create a wider variety of apps. |
| Unit 6 Algorithms | Design and analyze algorithms to understand how they work and why some are considered better than others. |
| Unit 7 Parameters, Return, and Libraries | Learn how to design clean and reusable code that can be shared with a single classmate or the entire world. |
| Unit 8 Create PT Prep | Practice and then complete the Create Performance Task (PT). |
| Unit 9 Data | Explore and visualize datasets from a wide variety of topics as you hunt for patterns and try to learn more about the world around you. |
| Unit 10 Cybersecurity and Global Impacts | Research and debate current events at the intersection of data, public policy, law, ethics, and societal impact. |

Learn more about professional learning: code.org/professional-learning

For more info about the course, visit: code.org/csp

Code.org is a 501(c)3 non-profit dedicated to expanding participation in computer science education by making it available in more schools and increasing participation by women and underrepresented students of color. The Code.org vision is that every student in every school should have the opportunity to learn computer programming

