Computer Science Principles
Curriculum Overview

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.

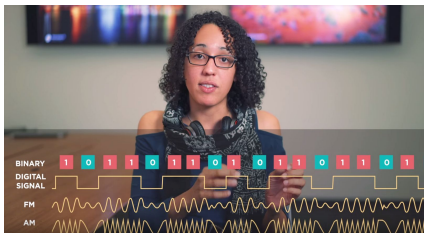
Hundreds of teachers participate each year. They overwhelmingly agree:

"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 instructional lesson plans that 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

CS Principles Unit Overview

Unit 1 The Internet	Learn how the multi-layered systems of the Internet function as you collaboratively solve problems and puzzles about encoding and transmitting data, both 'unplugged' and using Code.org's Internet Simulator.
Unit 2 Digital Information	Learn how computers store complex information like images, video, and sound. Use interactive widgets to explore concepts like image representation and compression.
Unit 3 Algorithms and Programming	Learn the JavaScript language with turtle programming in Code.org's App Lab. Learn general principles of algorithms and program design that are applicable to any programming language.
Unit 4 Big Data and Privacy	Research current events at the intersection of data, public policy, law, ethics, and societal impact. Learn the basics of how and why modern encryption works.
Explore: AP® Performance Task Prep	Practice and then complete the Explore Performance Task (PT).
Unit 5 Building Apps	Continue learning how to program in the JavaScript language. Use Code.org's App Lab environment to create a series of applications that live on the web. Each app highlights a core concept of programming.
Create: AP® Performance Task Prep	Practice and then complete the Create Performance Task (PT).
Post AP Data Tools	Learn how computers allow data to be collected, cleaned, analyzed, and visualized in order to find patterns and draw conclusions.

Learn more about professional learning: https://code.org/professional-learning
For curriculum, videos, support documents, and more, visit: https://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