

EWHS Course Scope & Sequence

Course Title	Advanced Placement - Computer Science Principles (AP CSP)				
Course Overview	Code.org's Computer Science Principles (CSP) curriculum is a full-year, rigorous, entry-level course that introduces high school students to the foundations of modern computing. The course covers a broad range of foundational topics such as programming, algorithms, the Internet, big data, digital privacy and security, and the societal impacts of computing. Code.org is recognized by the College Board as an endorsed provider of curriculum and professional development for AP® Computer Science Principles (AP CSP).				
Unit Component	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Title	Digital Information	The Internet	Intro to App Design	Variables, Conditionals, and Functions	Data
Guiding or Essential Questions <i>(if applicable)</i>	How do computers store complex information? What are the impacts of digitizing information?	How does the Internet work? What are the impacts of the Internet on politics, culture, and the economy?	How do computer scientists use fundamental programming concepts and collaborative software development processes to design apps?	How do computer scientists create apps to store information, make decisions, and better organize code?	How do computer scientists explore and visualize datasets from a wide variety of topics to hunt for patterns and learn more about the world?
Topic This should be the overarching theme or big idea. Brief overview of the unit.	This unit explores the technical challenges and questions that arise from the need to represent digital information in computers. Learn how complex information like numbers, text, images, and sound are	This unit reveals how the Internet was designed to connect billions of devices and people to one another. Learn how the different protocols of the Internet work and actually build them yourself using the	This unit is an introduction to programming and app design with a heavy focus on important skills like debugging, pair programming, and user testing. Learn how to design user interfaces and write	This unit explores how variables, conditionals, and functions allow for the design of increasingly complex apps. Learn how to program with these three new concepts through a sequence of collaborative activities.	In this unit learn how data analysis helps turn raw data into useful information about the world. Learn how to use data visualization to find patterns inside of data sets and learn how this data analysis

	represented in bits, how compression works, and the broader social impacts of digitizing the world's information.	Internet Simulator. Then consider the impacts the Internet has had, both good and bad, on modern life.	event-driven programs in App Lab and then design a project that teaches your classmates about a topic of your choosing.	Then build your own decision maker app to share with friends and help them make a decision.	process is being used in contexts like open data or machine learning to help make decisions or learn more about our world. In the unit project, you'll analyze a dataset of your choosing and present your findings.
Length <i>(in weeks)</i>	3 weeks	2 weeks	2-3 weeks	3 weeks	2 weeks

Unit Component	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
Title	Lists, Loops, and Traversals	Parameters, Return, and Libraries	Cybersecurity and Global Impacts	Create PT Prep	Algorithms
Guiding or Essential Questions <i>(if applicable)</i>	How do computer scientists build apps that use large amounts of information and pull in data from the web to create a wider variety of apps?	How do computer scientists design clean and reusable code that can be shared with a single classmate or the entire world?	How do computing innovations impact our world in beneficial and harmful ways?		How do computer scientists design and analyze algorithms to understand how they work? Why are some algorithms considered better than others?

<p style="text-align: center;">Topic</p> <p>This should be the overarching theme or big idea. Brief overview of the unit.</p>	<p>This unit introduces lists, loops, and traversals, and explores the way they can be used to build apps that store and process large amounts of information. Learn to program with the data library in App Lab and complete a 5-day hackathon project at the end of the unit where you can design a program about any topic of your choosing.</p>	<p>This unit introduces parameters, return, and libraries. Learn how to use these concepts to build new kinds of apps as well as libraries of code that you can share with your classmates. End the unit by designing a library of functions around any topic of your choosing.</p>	<p>In this unit learn how data can pose a threat to our privacy and security and the ways that encryption and other techniques are used to protect it. Throughout the unit participate in a "school of the future" conference in which you and a team make a proposal for how best to improve school life with computing innovations.</p>	<p>In this unit prepare for, and do the AP Create Performance Task.</p>	<p>This unit is a quick exploration of how computer scientists design algorithms to solve problems and how they analyze the speed of different algorithms. Learn about the concept of algorithmic efficiency through a variety of hands-on activities and learn how it's being applied in modern computing.</p>
<p style="text-align: center;">Length <i>(in weeks)</i></p>	<p style="text-align: center;">4 weeks</p>	<p style="text-align: center;">2-3 weeks</p>	<p style="text-align: center;">3 weeks</p>	<p style="text-align: center;">3 weeks</p>	<p style="text-align: center;">1-2 weeks</p>