Next Generation Science Standards (NGSS)

Algorithms and Programming:
Algorithms and programming are central to the CodeHS curriculum. Students learn the core principles of developing their own algorithms and implementing them in several programming languages across the pathway. Algorithms, variables, control, modularity, and program development are all taught in our courses.

Computing Systems:
Computing systems is a core concept throughout the CodeHS pathway. Students learn about various computing devices and how humans interact with them, including devices that extend the capabilities of humans. Students learn about computer organization including the relationship between hardware and software. Troubleshooting computing systems is a core concept of CodeHS curriculum as well. Students are expected to identify problems in their programs and fix them.

Data & Analysis:
CodeHS courses teach students how data is stored in a computer as an abstract representation. Students learn exactly how text and image data is organized and stored as physical bits in a computing system. Students also learn how sensors must convert physical data into a digital representation that can be stored in a computer, and how data collection can be automated with sensors

Impacts of Computing:
Computing has had significant impacts in many fields. In CodeHS courses, students learn about the positive and negative impacts computing innovations and the Internet have had on culture, social interactions, safety, and privacy. Students also learn the ethical considerations of sharing and using shared media online.

Networks & the Internet:
Students learn learn about network communication and organization, Internet protocols, Internet addressing, the benefits of the packet-switched architecture of the Internet, and the effect of hierarchy and redundancy on the scalability and reliability of the Internet. Students learn about the importance of cybersecurity and the various security measures we take to protect information and privacy on the Internet.

Next Generation Science Standards (NGSS)

Introduction to Computer Science in JavaScript	
	The CodeHS introduction to computer science curriculum teaches the foundations of computer science and basic programming, with an emphasis on helping students develop logical thinking and problem solving skills. Once students complete the CodeHS Introduction to Computer Science course, they will have learned material equivalent to a semester college introductory course in Computer Science and be able to program in JavaScript.
	Next Generation Science Standards Addressed
Grades 6-8	**MS-ETS1-1:** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. **MS-ETS1-2:** Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.
Grades 9-12	**HS-ETS1-2:** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.