HIGH SCHOOL
COMPUTER SCIENCE PRINCIPLES

School Supplies and Class Information

Supplies needed:

- Wifi connected computer with webcam and microphone, Google Chrome, an email address, One Binder and possibly dividers, something to write with. Just bring whatever 3 ring binder you have. 1" should be sufficient. It will partly depend on your personality and whether you want paper copies rather than digital.

Curriculum Books

- None. For the first portion of the year, we will use a curriculum from code.org

Purpose

- Understand how computers work, including binary, basic programming and networking. See following page for an overview of the first semester.
- Give the student a grasp of what is involved in the Computer Science field and whether it would be something that interests them.
- Cover the TEKS Curriculum Standards for CSP
- Microsoft Office and go deeper into Web Development.

Expectations

- Students must engage in the class. Each student will participate in ways that are suited to their personality.
- Students must complete their own work.
- Students must engage in a respectful manner.
- I truly want to know what students think on various topics. I want students to engage their thinking and express opinions that are contrary to the common thought of the local culture. This can be messy as young adults learn to do so with respect, but I seek to create a safe environment for doing such.
- Bring your binder and pen with you to class everyday.
- Keep your notebook neat and organized.

Grading Policy

- Daily Grades - 35% (at least 1 per week)
- Assessments/Major Projects - 55% (at least 1 per 6 week grading period)
- Class participation - 10% (this includes homework completed, note taking and participation in class activities)

Extra Credit

- For an assignment or project: The student must have done the assignment in order to earn extra credit. The student may do an extra credit assignment and have the grade averaged with the original assignment grade in order to bring up the grade.
- There may be other opportunities to earn extra credit throughout the year as needed or desired by the parents and student.

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, and prepare students for a future in any field or career.

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.

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 Studio—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

From Code.org.

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	Use a variety of digital tools to look at, generate, clean, and manipulate data to explore the relationship between information and data. Create and use visualizations to identify patterns and trends.
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 around the complex questions related to public policy, law, ethics, and societal impact. Learn the basics of how and why modern encryption works.
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.
Unit 6-10: Second Semester	• Microsoft Word, Excel PowerPoint • Critical Thinking • Digital Citizenship • Web Development, particularly Atom, & WordPress • Technology Operations and Management