

## COURSE

## DESCRIPTION

### **Intro to Computer Science**

(1 Semester)

Students learn programming, web design, and internet safety. They code with Tracy the Turtle, create websites, and explore internet innovations. The Tech Apps and Coding course emphasizes creativity, problem-solving, and project-based learning to spark interest in computer science.

### **Physical Computing**

(1 Semester)

Students in the Physical Computing unit use App Lab and Adafruit's Circuit Playground, Arduino products, and micro:bits to develop programs that mimic smart devices, progressing from prototypes to finished products. They learn to create responsive prototypes using everyday materials, fostering a "maker" mindset.

### **Web Design**

(1 Semester)

Students will learn to build web pages using HTML and CSS in a project-based course. They will create live homepages as portfolios without needing prior coding experience.

### **CS Principles**

(2 Semesters)

*\*\*\*Prerequisite: Intro to CS*

This course introduces high school students to modern computing principles over two semesters. Topics include programming in Javascript, algorithms, big data, digital privacy, security, and societal impacts. Students learn digital representation using binary code and develop UI/UX design skills for app development.

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### **Fundamentals of Coding**

(1 Semester)

*\*\*\*Prerequisite: Intro to CS*

Here, you'll dive into coding using Scratch and Python. You'll learn basic concepts like how to use variables, loops, and if-else statements. From making cool animations and games in Scratch to creating your programs in Python, you'll build problem-solving skills and learn how to think like a computer whiz.

### **Machine Learning & AI**

(1 Semester)

*\*\*\*Prerequisite: Intro to CS*

Craft your own AI solutions in a course focusing on machine learning and AI, exploring how technology like ChatGPT, Alexa, Tesla's self-driving, and Netflix's recommendations can drive positive change through data-driven insights. Develop AI innovations responsibly to make a difference ethically.

### **Cybersecurity**

(1 Semester)

*\*\*\*Prerequisite: Intro to CS*

The course is for students interested in Cybersecurity careers. It covers network and computer security, threat identification, cryptography, and hands-on labs for system vulnerability mitigation. Each unit includes cyber ethics and law, with an ethics agreement required to be signed by students and parents within the first 2 weeks.