Computer Science

Employment in computer and information technology occupations is projected to grow 13 percent from 2020 to 2030, faster than the average for all occupations. These occupations are projected to add about 667,600 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

The median annual wage for computer and information technology occupations was $91,250 in May 2020, which was higher than the median annual wage for all occupations of $41,950.

(Source: United States Bureau of Labor Statistics)

Computer Science Essentials introduces students to coding fundamentals through an approachable, block-based programming language where they will have early success in creating usable apps. As students sharpen their computational thinking skills, they will transition to programming environments that reinforce coding fundamentals by displaying block programming and text based programming side-by-side. Finally, students will learn the power of text-based programming as they are introduced to the Python® programming language. The course engages students in computational thinking practices and collaboration strategies, as well as industry-standard tools authentic to how computer science professionals work. Students will learn about professional opportunities in computer science and how computing can be an integral part of all careers today.

Curriculum:

Year 1: Computer Science Essentials: Students will use visual, block-based programming and seamlessly transition to text-based programming with languages such as Python to create apps and develop websites.

Year 2: Cybersecurity: Nationally, computational resources are vulnerable and frequently attacked; in Cybersecurity, students solve problems by understanding and closing these vulnerabilities.

Year 3: Computer Science Principles: Using Python® as a primary tool, students learn the fundamentals of coding, data processing, data security, and task automation.

Year 4: Computer Science A: Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

Classes meet for 2 periods/80 min per day, 5 days a week
Average number of new students accepted per year: 7
Opportunity for professional certifications: YES
Opportunity to earn college credits: NO

Future Careers

Computer programmers
Software developers
Information security analysts
Database administrators
Computer and information research scientists

SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps each student excel by providing educational programs, events and competitions that support career and technical education (CTE) in the nation's classrooms.

SCVTHS students have the opportunity to compete for state and national recognition in the annual SkillsUSA competitions
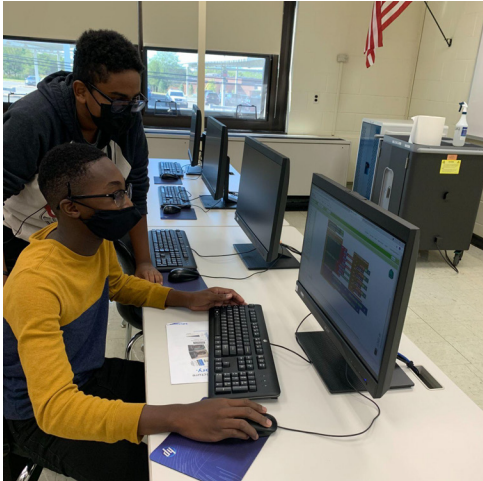
Students meet in a technical classroom. They learn how to become app creators using both block based and text based coding.

Working both individually and as a team, students create problem solving apps that address real world problems. Which allows students to use many different skills such as collaborating with others, interviewing the community, presenting their ideas and contributing to the solution.
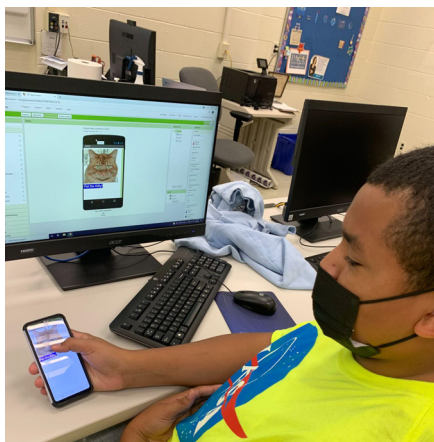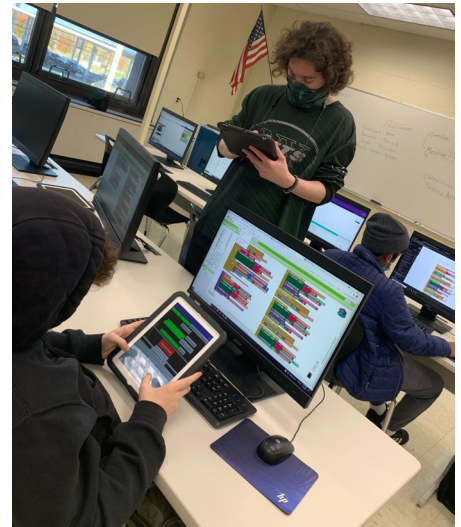
SkillsUSA contestants demonstrate knowledge of computer programming, describe how programs and programming languages work and describe the purposes and practices of structured programming. The contest may include a computer programming problem consisting of background information and program specifications. An appropriate (successfully executable) computer program from design notes and instructions will be developed.