

Computer Science Electives		
AP Computer Science Principles (Gr. 10 - 12) Elective	AP Computer Science A (Gr. 10 - 12) Elective	CK/AP Cyber Security 1: Networking Fundamentals (Gr. 10 - 12) Elective

## AP Computer Science Principles

**Course Number: 2620**

**Credit: 1**

**Length: year**

**Prerequisite: "A" or better in Algebra I, and Math teacher recommendation**

**Grades: 9 – 12**

**Elective**

This course does not count as one of your 4 required math credits. The AP Computer Science Principles course is designed to be equivalent to a first semester introductory college computing course *for non-computer science majors*. This course will introduce you to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts on society. You will research and explore a computer innovation of your choosing, create a visual to summarize the innovation, and describe in writing how the innovation works, how it's used, and the harmful and beneficial effects of the innovation on people and society. You will be prepared for, and are required to take the AP Computer Science Principles Exam which includes writing an original computer program along with development documentation and submitting the work to the College Board.

## AP Computer Science A

**Course Number: 2630**

**Credit: 1**

**Length: year**

**Prerequisite: Teacher Approval**

**Grades: 11 – 12**

**Elective**

AP Computer Science A introduces students to object-oriented programming and design using the Java language. Fundamental topics in this course include the design of solutions to problems, the use of data structures to organize large sets of data, the development and implementation of algorithms to process data, and the ethical and social implications of computing systems. This course is equivalent to a first-semester, college-level course in computer science. It is recommended that a student has a strong foundation of linear functions, composition of functions, and problem-solving strategies that require multiple approaches and collaborative efforts. It is important to understand that any significant computer science course builds upon a foundation of mathematical reasoning that should be acquired before attempting such a course. Students will be required to take the AP Computer Science A Exam.

## CK/AP Cyber Security 1: Networking Fundamentals

**Course Number: 2640**

**Credit: 1**

**Length: year**

**Prerequisite: none**

**Grades: 10 – 12**

**Elective**

Career Kickstart (CK) is a new career-focused program for all students who want to prepare for a career in cybersecurity. This is a full-year course that interweaves essential networking concepts with hands-on problem-solving activities to maximize understanding of network hardware and configuration, the use of protocols to enable reliable and accurate data transmission, and relevant security practices for the transmission of data both within and between computer networks. This course is designed to be the equivalent of a 3-credit course taken in the first or second year of a college cybersecurity degree or certificate program, and also to help you develop the understanding and skills needed to pass widely recognized professional certifications such as CompTIA Network+, Cisco Certified Networking Associate (CCNA), and Cisco Certified Support Technician (CCST): Networking. You will be prepared for and are required to take the CK/AP Networking Fundamentals Exam.