Computer Science Academy (CSA)

- Courses focus on learning **computer science concepts** through **inquiry and projects**.
- Themes and practices include the **creative nature of computing**, **problem-solving** using technology as a tool, and seeing the relevance and **impact of computer science**.
- Students in CSA take their **Computer Science class** and their **English class together** with the same students. The teachers work to build projects and skills across the curriculum – together we form a **small learning community**.
- **College and career skills** are built into the courses to prepare students for **higher education and future work as computing professionals**.

Why join CSA? Why computer science?

- Computational thinking is important across **ALL subjects**, not just computer science.
- **More than 50 percent** of all math and science jobs are for computer scientists.
- Computer science jobs are the **highest-paying jobs** for new graduates.
- Computing jobs are **growing 3 times faster** than the number of computer science graduates.
- **CSA field trips** to local universities, tech companies, game companies, and hackerspaces.
- **Guest speakers** from the tech industry to talk about various subfields within computer science.
- **Internships and summer opportunities** with local companies.
- Information and communication technologies is **the fastest growing job sector** in San Francisco.
- You can create cool mobile apps, games, and other software that have an **impact on society**.

Exploring Computer Science (10th Grade)

- Computers and the Internet
- Societal impacts of computing
- Algorithms and abstraction
- Connections between Math and Computer Science
- Programming
- Models of Intelligent Behavior
- Web page design and development
- Data and Information
- Electronics/Robotics

Computer Science Principles (11th Grade)

- Fundamental computer programming concepts and skills
- Computer programming from practical perspective
- AppInventor & Mobile App Design
- Python programming language
- Hardware and Software Abstraction
- Design Cycle
- Creative Computing
- Problem-solving, problem analysis, and algorithm design
- Analysis of Data, Algorithms, and the Internet
- Global Impacts of Computing
- Professional norms of the software development industry
- Career opportunities in programming

Advanced Placement Computer Science A (12th Grade)

- Java Programming Language
- Object-Oriented Program Design
- Program Implementation
- Program Analysis
- Standard Data Structures
- Standard Algorithms
- Computing in Context

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Sample CSA Student Schedule (required CSA courses highlighted)			
9th grade	10th grade	11th grade	12th grade
English 1	English 2 (CSA)	American Literature (CSA)	English/European Literature (CSA)
Computer Art	Exploring Computer Science (CSA)	Computer Science Principles (CSA)	AP Computer Science A (CSA)
Algebra 1	Geometry	Algebra 2	Pre-Calculus or AP Calculus
Biology	Chemistry	Physics	AP Physics or AP Chemistry
College/Career/ Health Ed	Modern World	US History	Democracy/ Economics
PE	Spanish 1	Spanish 2	PE or Spanish 3