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) |
| 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    |