

Why Computer Science

Computer science opens more doors than any other discipline in today's world. Learning even the basics will help you in virtually any career—from architecture to zoology. Just as you may have learned how to dissect a frog, or how electricity works, it's important for every 21st century student to have a chance to design an app or learn how the Internet works. (

In AP Computer Science, you will no longer be a passive consumer of technology—you will become a developer who actively harnesses current technology to develop new technologies. You will learn how to create useful programs and apps that can be applied to solve problems; you will learn how to create games that can be shared with your friends.

Careers

Jobs are plentiful, interesting, and flexible. Job prospects have remained strong despite economically challenging times. Computer scientists also enjoy a wide range of career options since all industry sectors today involve computing (e.g., the arts, film, finance, healthcare, journalism, manufacturing, music, security).

Prerequisites

AP Computer Science is for anybody interested in expressing themselves creatively. Whether or not you are pursuing a career in technology, computer science is a “must have” skill in our economy. If you have strong math skills or programming experience, you may consider AP Computer Science A. If you are just curious and may not have as strong of a background in computer science, AP Computer Science Principles is the course for you!

Credits Earned

AP Computer Science may count as an elective credit. It may also be substituted for a math or science credit.

Student Quotes

“Because of ECS I recognize I am a problem solver and problems can be solved in a variety of ways.”

“It showed me all the great reasons why computer science is a great career.”

“I was inspired further to pursue computer science and computer engineering as my college major.”

Timberline High School

AP Computer Science

I think that great programming is not all that dissimilar to great art. Once you start thinking in concepts of programming it makes you a better person...as does learning a foreign language, as does learning math, as does learning how to read. — Jack Dorsey. Creator, Twitter and Founder & CEO, Square

- **Creative**
- **Relevant**
- **Innovative**
- **Challenging**
- **Rewarding**

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What is AP Computer Science?

AP Computer Science at Timberline offers a multidisciplinary approach to teaching the underlying principles of computation. The course will introduce students to the creative aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. AP Computer Science will give students the opportunity to use technology to address real-world problems and build relevant solutions. Together, these aspects of the course make up a rigorous and rich curriculum that aims to broaden participation in computer science.

It is not expected that all students who take AP Computer Science will major in computer science at the college or university level. The study of computer science benefits all students by providing a foundation that fosters rigor of thought and an analytical approach to solving problems; skills also sought in such areas as law and business, where clear thinking and analysis are indispensable.

Course Objectives

Students will be able to:

Design and implement solutions to problems by writing, running, and debugging computer programs

Use and implement commonly - used algorithms and data structures

Develop and select appropriate algorithms and data structures to solve problems

Code fluently in an object -oriented paradigm using the programming language Java, and be familiar with and be able to use standard Java library classes

Read and understand a large program consisting of several classes and interacting objects, and read and understand a description of the design and development process leading to such a program

Recognize the ethical and social implications of computer use



About the Instructor

I have been a teacher with the Boise School District for 16 teachers. I have always been a passionate advocate for computer science education and recently helped lead the Computer Science in K12 initiative in Idaho.

I teach Advanced Placement Chemistry, Advanced Placement Computer Science, and Exploring Computer Science. I begin teaching myself how to program over 17 years ago and have since developed numerous applications still in use by teachers throughout our district. I have a BS in Chemistry and an MS in Computer Science Education.