

AP Computer Science A

Challenging & rewarding experience

AP Computer Science A is equivalent to a first-semester, college-level course in computer science for CS majors. The course introduces students to computer science using the industry-standard Java programming language and presents fundamental topics that include problem solving. AP CS A has been described as one of the most challenging and rewarding courses offered at the AP level.



TEALS curriculum approach

The TEALS AP CS A curriculum is based on the University of Washington's CSE 142 course and was adapted in partnership with the University for high school audiences. TEALS has successfully implemented the course in hundreds of high schools nationwide. AP CS A introduces students to the importance of resilience and project planning through the implementation of several large-scale and complex projects. The daily student-centered lesson plans emphasize practice through working on problems, group activities, and projects that help integrate the learning objectives.

TEALS' proven track record

Since 2009, TEALS has helped over 6,000 students and hundreds of teachers succeed in AP CS A. In 2015, per end-of-class surveys, 95% of students saw improvement in their programming skills, 87% of students mentioned the volunteers were helpful in learning computer science, and students averaged scores 1 standard deviation above the national average. In 2016, more than 57,000 students took the AP CS A exam and only 10 students earned a perfect score. **One** of those perfect scores was earned by a TEALS student.

Approachable, project-based curriculum

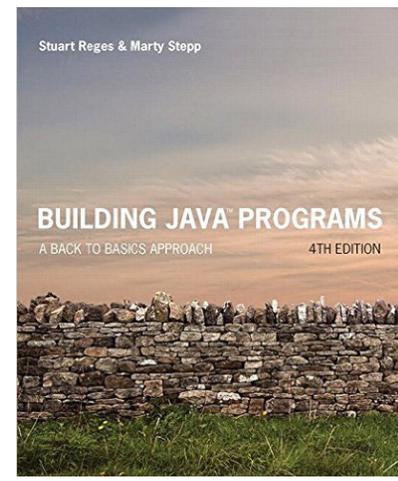
The TEALS AP CS A curriculum materials were written for and tested in diverse classrooms. This curriculum has been utilized in classrooms with students on Individualized Education Programs, English language learners, gifted and talented students, and students who are otherwise outside the average.

Curriculum materials

All TEALS curricula are available free for public non-commercial use through a Creative Commons license.

The AP Computer Science A curriculum includes:

- Daily lesson plans
- Required Text: *Building Java Programs*
- Student worksheets
- Unit tests and homework
- Project specifications and grading rubrics
- Access to nationwide community of tech volunteers and teachers learning CS



TEALS — AP CS A Overview

UNIT	PROJECT
1: Intro to Java and static methods	Family letters & The house that Jack built
2: For loops and data types	Hourglass
3: Conditionals, while loops, string parsing	FracCalc
4: Arrays and arraylists	AP magpie activity
5: Objects	AP picture lab
6: Inheritance, polymorphism, interfaces	Text excel, shapes, sports manager
7: Searching and sorting	AP elevens activity
8: Recursion	Tower of Hanoi, MergeSort
9: AP review	Barron AP review
10: After the AP exam	Space battle arena, TEALS Minecraft modding