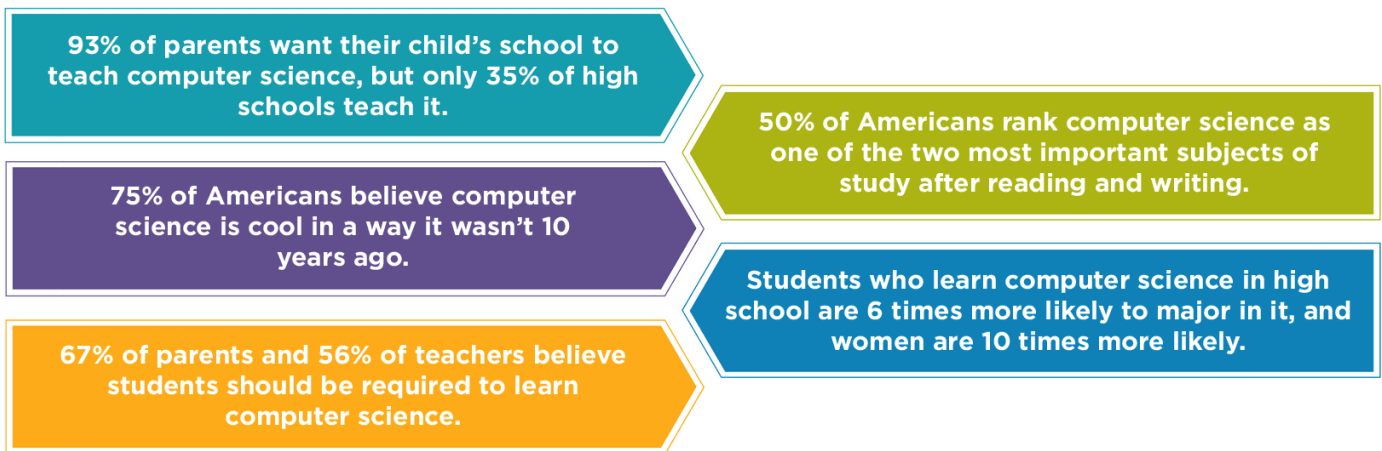
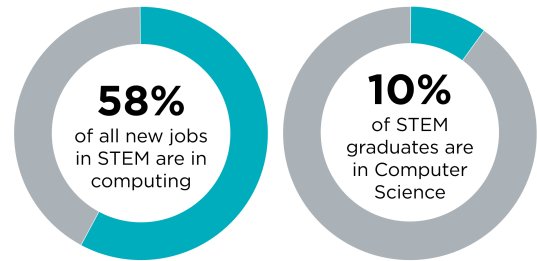


# Support K-12 Computer Science Education in Maryland

Computer science drives job growth and innovation throughout our economy and society. Computing occupations are the **number 1 source of all new wages in the U.S.** and make up over half of all projected new jobs in STEM fields, making Computer Science one of the most in-demand college degrees. And computing is used all around us and in virtually every field. It's foundational knowledge that all students need. But computer science is marginalized throughout education. Only 35% of U.S. high schools teach any computer science courses and only 10% of STEM graduates study it. We need to improve access for all students, including groups who have traditionally been underrepresented.

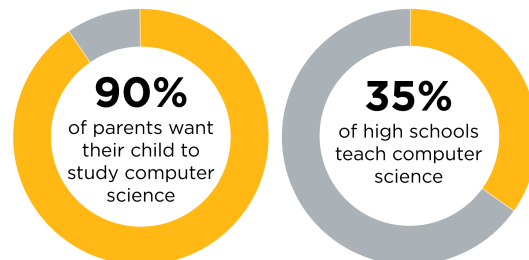


## Computer science in Maryland

- Maryland currently has **21,693 open computing jobs** (4.1 times the average demand rate in Maryland).
- The average salary for a computing occupation in MD is **\$103,646**, which is significantly higher than the average salary in the state (\$57,270). The existing open jobs alone represent a **\$2,248,388,990 opportunity** in terms of annual salaries.
- Maryland had only **3,422 computer science graduates** in 2017; only **22%** were female.
- Only **5,567 exams were taken in AP Computer Science by high school students in Maryland** in 2018 (2,112 took AP CS A and 3,455 took AP CSP).
- Only 33% were female (24% for AP CS A and 39% for AP CSP); only 431 exams were taken by Hispanic or Latino students (150 took AP CS A and 281 took AP CSP); only 695 exams were taken by Black students (217 took AP CS A and 478 took AP CSP); only 6 exams were taken by American Indian or Alaska Native students (2 took AP CS A and 4 took AP CSP); only 2 exams were taken by Native Hawaiian or Pacific Islander students (0 took AP CS A and 2 took AP CSP).
- Only **170 schools** in MD (47% of MD schools with AP programs) offered an AP Computer Science course in 2017-2018 (38% offered AP CS A and 38% offered AP CSP), which is 20 more than the previous year.
- Universities in Maryland did not graduate a single new teacher prepared to teach computer science in 2016.
- According to a representative survey from Google/Gallup, school administrators in MD support expanding computer science education opportunities: 76% of principals surveyed think CS is just as or more important

than required core classes. And their biggest barrier to offering computer science is the lack of funds for hiring and training teachers.

## What can you do to support K-12 CS education in Maryland?



1. Nominate a teacher for a professional learning scholarship: [www.code.org/nominate](http://www.code.org/nominate)
2. Send a letter:
  - o To your school/district asking them to expand computer science offerings at every grade level: [www.code.org/promote/letter](http://www.code.org/promote/letter)
  - o To your elected officials asking them to support computer science education policy in Maryland: [www.votervoice.net/Code/campaigns/58463/respond](http://www.votervoice.net/Code/campaigns/58463/respond)
3. Find out if your school teaches computer science or submit information about your school's offerings at [www.code.org/yourschool](http://www.code.org/yourschool).
4. Visit [www.code.org/educate/3rdparty](http://www.code.org/educate/3rdparty) to find out about courses and curriculum from a variety of providers, including Code.org.
5. Visit [www.code.org/promote/MD](http://www.code.org/promote/MD) to learn more about supporting computer science in your state.

## Code.org's impact in Maryland

- In Maryland, Code.org's curriculum is used in
  - o 21% of elementary schools
  - o 17% of middle schools
  - o 26% of high schools
- There are 12,089 teacher accounts and 478,794 student accounts on Code.org in Maryland.
- Of students in Maryland using Code.org curriculum last school year,
  - o 42% attend high needs schools
  - o 11% are in rural schools
  - o 44% are female students
  - o 56% are underrepresented minority students (Black/African American, Hispanic/Latino, American Indian, or Hawaiian)
- Code.org, its regional partner(s) Maryland Codes, and 15 facilitators have provided professional learning in Maryland for
  - o 1,044 teachers in CS Fundamentals (K-5)
  - o 211 teachers in Exploring Computer Science or Computer Science Discoveries
  - o 117 teachers in Computer Science Principles

**“Computer Science is a liberal art: it’s something that everybody should be exposed to and everyone should have a mastery of to some extent.”**

— Steve Jobs

# What can your state do to improve computer science education?

States and local school districts need to adopt a broad policy framework to provide all students with access to computer science. The following nine recommendations are a menu of best practices that states can choose from to support and expand computer science. Not all states will be in a position to adopt all of the policies. Read more about these 9 policy ideas at [https://code.org/files/Making\\_CS\\_Fundamental.pdf](https://code.org/files/Making_CS_Fundamental.pdf) and see our rubric for describing state policies at <http://bit.ly/9policiesrubric>.

- Maryland is in the process of developing a state plan for K-12 computer science.
- Maryland has established K-12 computer science standards.
- Maryland has allocated funding for rigorous computer science professional development and course support.
- Maryland has clear certification pathways for computer science teachers.
- Maryland has established programs at institutions of higher education to offer computer science to preservice teachers.
- Maryland has a dedicated computer science position in the state education agency.
- Maryland requires that all secondary schools offer computer science.
- Maryland allows computer science to count for a core graduation requirement. Find out how Maryland allows computer science to count towards graduation at <http://bit.ly/9policies>.
- Maryland allows computer science to count as a core admission requirement at institutions of higher education.

## Follow us!

Join our efforts to give every student in every school the opportunity to learn computer science. Learn more at [code.org](https://code.org), or follow us on [Facebook](#) and [Twitter](#).

Launched in 2013, Code.org® is a nonprofit dedicated to expanding access to computer science, and increasing participation by women and underrepresented students of color. Our vision is that every student in every school should have the opportunity to learn computer science.

Data is from the Conference Board for job demand, the Bureau of Labor Statistics for state salary and national job projections data, the College Board for AP exam data, the National Center for Education Statistics for university graduate data, the Gallup and Google research study Education Trends in the State of Computer Science in U.S. K-12 Schools for parent demand, the 2018 Computer Science Access Report for schools that offer computer science, and Code.org for its own courses, professional learning programs, and participation data.