Support K-12 Computer Science Education in West Virginia

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 45% of U.S. high schools teach any computer science courses and only 11% of bachelor's degrees are in Computer Science. We need to improve access for all students, including groups who have traditionally been underrepresented.

93% of parents want their child’s school to teach computer science, but only 45% of high schools teach it.

75% of Americans believe computer science is cool in a way it wasn't 10 years ago.

67% of parents and 56% of teachers believe students should be required to learn computer science.

50% of Americans rank computer science as one of the two most important subjects of study after reading and writing.

Students who learn computer science in high school are 6 times more likely to major in it, and women are 10 times more likely.

Computer science in West Virginia

- West Virginia currently has **553 open computing jobs** (4.0 times the average demand rate in West Virginia).
- The average salary for a computing occupation in WV is **$75,109**, which is significantly higher than the average salary in the state ($42,370). The existing open jobs alone represent a **$41,535,009 opportunity** in terms of annual salaries.
- West Virginia had only **190 bachelor's degrees in Computer Science** in 2018; only **14%** were female.
- In West Virginia, only **46% of all public high schools teach a foundational computer science course**.
- Only **331 exams were taken in AP Computer Science by high school students** in West Virginia in 2019 (88 took AP CS A and 243 took AP CSP).
  - Only 34% were female (26% for AP CS A and 36% for AP CSP); only 7 exams were taken by Hispanic/Latino/Latina students (1 took AP CS A and 6 took AP CSP); only 6 exams were taken by Black/African American students (1 took AP CS A and 5 took AP CSP); only 1 exam was taken by Native American/Alaskan students (0 took AP CS A and 1 took AP CSP); no exams were taken by Native Hawaiian/Pacific Islander students.
  - Only **34 schools** in WV (27% of WV schools with AP programs) offered an AP Computer Science course in 2018-2019 (10% offered AP CS A and 20% offered AP CSP), which is 9 more than the previous year. There are fewer AP exams taken in computer science than in any other STEM subject area.
  - Teacher preparation programs in West Virginia did not graduate a single new teacher prepared to teach computer science in 2018.
  - According to a representative survey from Google/Gallup, school administrators in WV support expanding computer science education opportunities: 64% of principals surveyed think CS is just as or more important than required core classes. And one of their biggest barriers 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 West Virginia?

- Send a letter:
  - 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)
  - To your elected officials asking them to support computer science education policy in West Virginia: [www.votervoice.net/Code/campaigns/58463/respond](http://www.votervoice.net/Code/campaigns/58463/respond)
- 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).
- 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.

Who can you connect with locally to talk about K-12 CS education policy?

- You can reach Code.org’s policy contact for your state, Katie Hendrickson, at katie@code.org.

Code.org’s impact in West Virginia

- In West Virginia, Code.org’s curriculum is used in
  - 21% of elementary schools
  - 22% of middle schools
  - 23% of high schools
- There are 2,987 teacher accounts and 114,618 student accounts on Code.org in West Virginia.
- Of students in West Virginia using Code.org curriculum last school year,
  - 36% attend high needs schools
  - 39% are in rural schools
  - 44% are female students
  - 16% are students from marginalized racial and ethnic groups underrepresented in computer science (Black/African American, Hispanic/Latino/Latina, Native American/Alaskan, or Native Hawaiian/Pacific Islander)
- Code.org, its regional partner(s) West Virginia University, and 10 facilitators have provided professional learning in West Virginia for
  - 552 teachers in CS Fundamentals (K-5)
  - 85 teachers in Exploring Computer Science or Computer Science Discoveries
  - 61 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 and see our rubric for describing state policies at http://bit.ly/9policiesrubric.

West Virginia has created a state plan for K-12 computer science.

West Virginia has established K-12 computer science standards.

West Virginia has allocated funding for rigorous computer science professional development and course support.

West Virginia has clear certification pathways for computer science teachers.

West Virginia has not yet established programs at institutions of higher education to offer computer science to preservice teachers. The computer science teacher shortage can be addressed by exposing more preservice teachers to computer science during their required coursework or by creating specific pathways for computer science teachers.

West Virginia has a dedicated computer science position in the state education agency.

West Virginia requires that all secondary schools offer computer science.

West Virginia allows computer science to count for a core graduation requirement. Find out how West Virginia allows computer science to count towards graduation at http://bit.ly/9policies.

West Virginia does not yet allow computer science to count as a core admission requirement at institutions of higher education. Admission policies that do not include rigorous computer science courses as meeting a core entrance requirement, such as in mathematics or science, discourage students from taking such courses in secondary education. State leaders can work with institutions of higher education to ensure credit and articulation policies align with secondary school graduation requirements.

Follow us!

Join our efforts to give every student in every school the opportunity to learn computer science. Learn more at 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 youth. 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.