

Support K-12 Computer Science Education in Georgia

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 57.5% of U.S. high schools teach any computer science courses and only 4% of bachelor's degrees are in Computer Science. We need to improve access for all students, including groups who have traditionally been underrepresented.



Yet, there were only 3,135 graduates in computer science in 2020 and only 71% of all public high schools teach a foundational computer science course.

Computer science in Georgia

- Only **6,761 exams were taken in AP Computer Science by high school students in Georgia** in 2020 (2,295 took AP CS A and 4,466 took AP CSP).
- Only 29% were taken by female students (24% for AP CS A and 32% for AP CSP); only 634 exams were taken by Hispanic/Latino/Latina students (216 took AP CS A and 418 took AP CSP); only 716 exams were taken by Black/African American students (177 took AP CS A and 539 took AP CSP); only 26 exams were taken by Native American/Alaskan students (7 took AP CS A and 19 took AP CSP); only 7 exams were taken by Native Hawaiian/Pacific Islander students (0 took AP CS A and 7 took AP CSP).
- Only **209 schools** in GA (35% of GA schools with AP programs) offered an AP Computer Science course in 2019-2020 (24% offered AP CS A and 28% offered AP CSP), which is 14 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 Georgia only graduated 2 new teachers prepared to teach computer science in 2018.
- According to a representative survey from Google/Gallup, school administrators in GA support expanding computer science education opportunities: 71% 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 Georgia?

- Send a letter to your school/district asking them to expand computer science offerings at every grade level: <https://code.org/promote/letter>
- Find out if your school teaches computer science or submit information about your school's offerings at www.code.org/yourschool.
- Visit www.code.org/educate/3rdparty to find out about courses and curriculum from a variety of providers, including Code.org.

Code.org's impact in Georgia

- In Georgia, Code.org's curriculum is used in
 - 26% of elementary schools
 - 29% of middle schools
 - 27% of high schools
- There are 34,433 teacher accounts and 1,712,117 student accounts on Code.org in Georgia.
- Of students in Georgia using Code.org curriculum last school year,
 - 54% attend high needs schools
 - 43% are in rural schools
 - 44% are female students
 - 31% are Black/African American students
 - 10% are Hispanic/Latino/Latina students
 - 0% are Native American/Alaskan students
 - 0% are Native Hawaiian/Pacific Islander students
 - 40% are white students
 - 6% are Asian students
 - 4% are students who identify as two or more races
- Code.org, its regional partner(s) Georgia Tech Center for Education Integrating Science, Mathematics, and Computing, and 12 facilitators have provided professional learning in Georgia for
 - 3,529 teachers in CS Fundamentals (K-5)
 - 186 teachers in Exploring Computer Science or Computer Science Discoveries
 - 170 teachers in Computer Science Principles

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 ten 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 10 policy ideas at https://advocacy.code.org/2023_making_cs_foundational.pdf and see our rubric for describing state policies at <http://bit.ly/9policiesrubric>.

□ **State Plan** - The Georgia Department of Education developed a state plan for expanding computer science in 2018. The plan includes strategies to build diversity in computer science education, which includes rural and economically challenged communities.

□ **K-12 Standards** - Georgia adopted K-12 computer science standards in 2022. Standards within each grade band address concepts of equity, such as accessible technology and inclusivity.

□ **Funding** - HB 911 (FY 2023) and SB 81 (FY 2022) appropriated \$1M, HB 793 (FY 2021)/HB 80 (in 2021 for the current fiscal year) appropriated \$717,275, and HB 31 (FY 2020) appropriated \$750K for the grant program established by SB 108 (FY 2019). HB 19 (FY 2024) appropriated \$1.4M and HB 911 (FY 2023) appropriated \$600K to provide professional development and student support for a computer science pilot program in rural Georgia. SB 81 (FY 2022) appropriated \$250K for a pilot program for AP CS Principles. HB 683 (FY 2018) appropriated \$500K for middle school coding and teacher professional development. In FY 2016, the Governor's Office of Student Achievement Innovation Funds allocated \$250K for the expansion of computer science.

□ **Certification** - In Georgia, teachers with existing licensure can obtain a 6–12 academic endorsement by passing the Georgia GACE Computer Science Assessment. An initial license in computer science requires completing a state-approved program.

□ **Pre-Service Programs** - The Georgia Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.

□ **Dedicated State Position** - The Georgia Department of Education has a Computer Science Education Program Specialist.

□ **Require High Schools to Offer** - SB 108 (2019) required all high schools to offer computer science beginning in the 2024–2025 school year. The state set incremental requirements for each year, requiring that at least one high school in each local school system offers a course by the 2022–2023 school year, and half of all high schools offer a course by the 2023–2024 school year. Further, all middle schools must offer instruction in exploratory computer science by the 2022–2023 school year, and it is recommended for all elementary schools.

□ **Count Towards Graduation** - Of the approved computing courses in Georgia, nine can count as the fourth mathematics credit or the fourth science credit for graduation.

□ **Higher Ed Admission** - Computer science can count as a science or foreign language credit required for admission at institutions of higher education, which aligns with Georgia's high school graduation policy.

□ **Graduation Requirement** - Georgia **does not yet** require students to take computer science to earn a high school diploma. Graduation requirements ensure that all students get exposure to computer science.

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.

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, Anthony Owen, at anthony.owen@code.org.
- The Expanding Computing Education Pathways (ECEP) Alliance (www.ecepalliance.org), an NSF funded Broadening Participation in Computing Alliance, seeks to increase the number and diversity of students in computing and computing-intensive degrees by promoting state-level computer science education. ECEP supports 22 states and the territory of Puerto Rico to develop effective and replicable interventions to broaden participation in computing and to create state-level infrastructure to foster equitable computing education policies. You can reach your ECEP point of contact Bryan Cox at bcox@doe.k12.ga.us.

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.