

Support K-12 Computer Science Education in Mississippi

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 281 graduates in computer science in 2020 and only 78% of all public high schools teach a foundational computer science course.

Computer science in Mississippi

- Only **314 exams were taken in AP Computer Science by high school students in Mississippi** in 2020 (24 took AP CS A and 290 took AP CSP).
- Only 38% were taken by female students (29% for AP CS A and 39% for AP CSP); only 19 exams were taken by Hispanic/Latino/Latina students (1 took AP CS A and 18 took AP CSP); only 56 exams were taken by Black/African American students (4 took AP CS A and 52 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 **47 schools** in MS (27% of MS schools with AP programs) offered an AP Computer Science course in 2019-2020 (5% offered AP CS A and 26% offered AP CSP), which is 4 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 Mississippi 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 MS support expanding computer science education opportunities: 78% of principals surveyed think CS is just as or more important than required core classes.

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

- Send a letter to your school/district asking them to expand computer science offerings at every grade level: [www.code.org/promote/letter](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 Mississippi

- In Mississippi, Code.org’s curriculum is used in
 - 25% of elementary schools
 - 45% of middle schools
 - 26% of high schools
- There are 9,743 teacher accounts and 471,398 student accounts on Code.org in Mississippi.
- Of students in Mississippi using Code.org curriculum last school year,
 - 77% attend high needs schools
 - 74% are in rural schools
 - 49% are female students
 - 37% are Black/African American students
 - 4% are Hispanic/Latino/Latina students
 - 0% are Native American/Alaskan students
 - 0% are Native Hawaiian/Pacific Islander students
 - 45% are white students
 - 1% are Asian students
 - 3% are students who identify as two or more races
- Code.org, its regional partner(s) Mississippi State University, and 13 facilitators have provided professional learning in Mississippi for
 - 1,430 teachers in CS Fundamentals (K-5)
 - 632 teachers in Exploring Computer Science or Computer Science Discoveries
 - 89 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 Mississippi Department of Education developed a 10-year strategic plan for statewide computer science education. The plan addresses efforts to increase enrollment in computer science courses for female students and students from marginalized racial and ethnic groups underrepresented in computer science.

▢ **K-12 Standards** - Mississippi adopted K–12 computer science standards based on the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.

▢ **Funding** - HB 1613 (FY 2024), HB 1600 (FY 2023), and HB 1837 (FY 2022) allocated \$1M to develop computer science courses and professional development. HB 1700 (FY 2021) allocated \$300K for computer science professional development. HB 1643 (FY 2020) allocated \$300K to develop computer science courses and professional development.

▢ **Certification** - In Mississippi, teachers with existing licensure can obtain an AP Computer Science Principles Endorsement by completing an approved AP training. Teachers can also obtain a K–8 or 7–12 add-on endorsement by completing coursework or approved professional development for specific courses.

▢ **Pre-Service Programs** - Mississippi **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.

▢ **Dedicated State Position** - Mississippi **does not yet** have dedicated computer science positions in state or local education agencies. Creating a statewide computer science leadership position within the state education agency can help expand state-level implementation of computer science education initiatives. Similar positions at the local level could support districts’ expansion of course offerings and professional development.

▢ **Require High Schools to Offer** - HB 633 (2021) required all schools (elementary, middle, and high) to offer instruction in computer science by the 2024–2025 school year. The state set incremental requirements for each year, requiring that all middle schools offer instruction in foundations of computer science and half of all elementary schools in each school district offer at least one hour of computer science instruction per week by the 2022–2023 school year. Half of all high schools in each school district must offer a course in computer science and all elementary schools must offer at least one hour of computer science instruction per week by the 2023–2024 school year. Further, all charter schools that serve middle or high school students must offer a

course in computer science and all charter schools that serve elementary school students must offer instruction in computer science by the 2022–2023 school year.

▮ **Count Towards Graduation** - Beginning with incoming freshmen of 2018–2019, all Mississippi students must earn one credit in technology or computer science. Multiple computer science courses may satisfy the graduation credit.

▮ **Higher Ed Admission** - All students applying to state institutions of higher learning in Mississippi for entrance in Fall 2022 must have earned one credit in computer science or technology, which aligns with the high school graduation policy.

▮ **Graduation Requirement** - Mississippi **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 Shelly Hollis at shelly.hollis@rcu.msstate.edu.

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.