Support K-12 Computer Science Education in Ohio

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 51% 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.

93% of parents want their child's school to teach computer science, but only **51% of high schools** offer it.	More than **70% of superintendents and principals** say offering computer science is just as important as offering subjects like English, math, history, and 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 **six times** more likely to major in it, and **women are ten times more likely**.	Black students are **more interested** in CS and **more confident** in their abilities than white students but are less likely to enroll in a class.

In Ohio, there are currently 19,947 open computing jobs with an average salary of $86,642.

Yet, there were only 1,842 graduates in computer science in 2019 and only 50% of all public high schools teach a foundational computer science course.

Computer science in Ohio

- Only **3,540 exams were taken in AP Computer Science by high school students in** Ohio in 2020 (1,453 took AP CS A and 2,087 took AP CSP).
- Only 26% were taken by female students (22% for AP CS A and 29% for AP CSP); only 166 exams were taken by Hispanic/Latino/Latina students (51 took AP CS A and 115 took AP CSP); only 232 exams were taken by Black/African American students (61 took AP CS A and 171 took AP CSP); only 19 exams were taken by Native American/Alaskan students (9 took AP CS A and 10 took AP CSP); only 1 exam was taken by Native Hawaiian/Pacific Islander students (1 took AP CS A and 0 took AP CSP).
- Only **206 schools** in OH (28% of OH schools with AP programs) offered an AP Computer Science course in 2019-2020 (15% offered AP CS A and 21% offered AP CSP), which is 28 more than the previous year.
- Teacher preparation programs in Ohio 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 OH support expanding computer science education opportunities: 65% 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 Ohio?

- Send a letter:
  - To your school/district asking them to expand computer science offerings at every grade level: **www.code.org/promote/letter**
  - To your elected officials asking them to support computer science education policy in Ohio: **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**.
- 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 Ohio

- In Ohio, Code.org's curriculum is used in
    - 22% of elementary schools
    - 26% of middle schools
    - 23% of high schools
- There are 20,994 teacher accounts and 1,291,461 student accounts on Code.org in Ohio.
- Of students in Ohio using Code.org curriculum last school year,
    - 17% attend high needs schools
    - 33% are in rural schools
    - 45% are female students
    - 19% are Black/African American students
    - 5% are Hispanic/Latino/Latina students
    - 1% are Native American/Alaskan students
    - 0% are Native Hawaiian/Pacific Islander students
    - 58% are white students
    - 4% are Asian students
    - 5% are students who identify as two or more races
- Code.org, its regional partner(s) Battelle Education, and 11 facilitators have provided professional learning in Ohio for
    - 1,930 teachers in CS Fundamentals (K-5)
    - 199 teachers in Exploring Computer Science or Computer Science Discoveries
    - 135 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 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**.

☐ **State Plan -**

☑ **K-12 Standards -**

☐ **Funding -**

☑ **Certification -**

☑ **Pre-Service Programs -**

☑ **Dedicated State Position -**

☐ **Require High Schools to Offer -** Ohio **does not yet** require that all secondary schools offer computer science. The state can support the expansion of computer science courses by adopting policies that require schools to offer a computer science course based on rigorous standards, with appropriate implementation timelines and allowing for remote and/or in-person courses.

☑ **Count Towards Graduation -**

☑ **IHE Admission -**

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, Katie Hendrickson, at katie@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 Debbie K Jackson at d.jackson1@csuohio.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.