

Support K-12 Computer Science Education in Wyoming

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 44 graduates in computer science in 2020 and only 63% of all public high schools teach a foundational computer science course.

Computer science in Wyoming

- Only 97 exams were taken in AP Computer Science by high school students in Wyoming in 2020 (22 took AP CS A and 75 took AP CSP).
- Only 36% were taken by female students (23% for AP CS A and 40% for AP CSP); only 4 exams were taken by Hispanic/Latino/Latina students (0 took AP CS A and 4 took AP CSP); no exams were taken by Black/African American students; only 2 exams were taken by Native American/Alaskan students (1 took AP CS A and 1 took AP CSP); no exams were taken by Native Hawaiian/Pacific Islander students.
- Only 11 schools in WY (27% of WY schools with AP programs) offered an AP Computer Science course in 2019-2020 (15% offered AP CS A and 22% offered AP CSP). There are fewer AP exams taken in computer science than in any other STEM subject area.
- Teacher preparation programs in Wyoming did not graduate a single new teacher prepared to teach computer science in 2018.

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

- 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 Wyoming

- In Wyoming, Code.org's curriculum is used in
 - 29% of elementary schools
 - 32% of middle schools

- o 25% of high schools
- There are 2,830 teacher accounts and 144,163 student accounts on Code.org in Wyoming.
- Of students in Wyoming using Code.org curriculum last school year,
 - o 17% attend high needs schools
 - o 79% are in rural schools
 - o 45% are female students
 - o 5% are Black/African American students
 - o 9% are Hispanic/Latino/Latina students
 - o 3% are Native American/Alaskan students
 - o 0% are Native Hawaiian/Pacific Islander students
 - o 68% are white students
 - o 3% are Asian students
 - o 4% are students who identify as two or more races
- Code.org, its regional partner(s) University of Wyoming, and 4 facilitators have provided professional learning in Wyoming for
 - o 860 teachers in CS Fundamentals (K-5)
 - o 75 teachers in Exploring Computer Science or Computer Science Discoveries
 - o 41 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 Wyoming Department of Education created a task force in 2017 to develop and implement a long-term plan for expanding computer science.

▣ **K-12 Standards** - Wyoming adopted K–12 computer science standards in February 2020. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.

▣ **Funding** - Although Wyoming does not yet provide dedicated state funding, the Wyoming Trust Fund for Innovative Education prioritized computer science applications in 2018–2021.

▣ **Certification** - In Wyoming, teachers with existing licensure can obtain a K–12 endorsement by completing a program that leads to licensure or a combination of coursework and passing the Praxis CS exam. Another pathway requires coursework and work experience. Teachers can teach out of field for up to two years and can earn the CS endorsement by passing the Praxis CS exam within those two years.

▣ **Pre-Service Programs** - Wyoming **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** - The Wyoming Department of Education has a Math and Computer Science Consultant.

▣ **Require High Schools to Offer** - SF 29 (2018) required all schools to include computer science and computational thinking by the 2022–2023 school year.

▣ **Count Towards Graduation** - In Wyoming, computer science courses aligned with the standards can count as a science credit for graduation.

▣ **Higher Ed Admission** - Computer science can count as one year of science, fourth year mathematics (for state scholarship), or career credits required for admission at institutions of higher education, which aligns with the high school graduation policy.

▣ **Graduation Requirement** - Wyoming **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, Hannah Weissman, at hannah.weissman@code.org.

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.