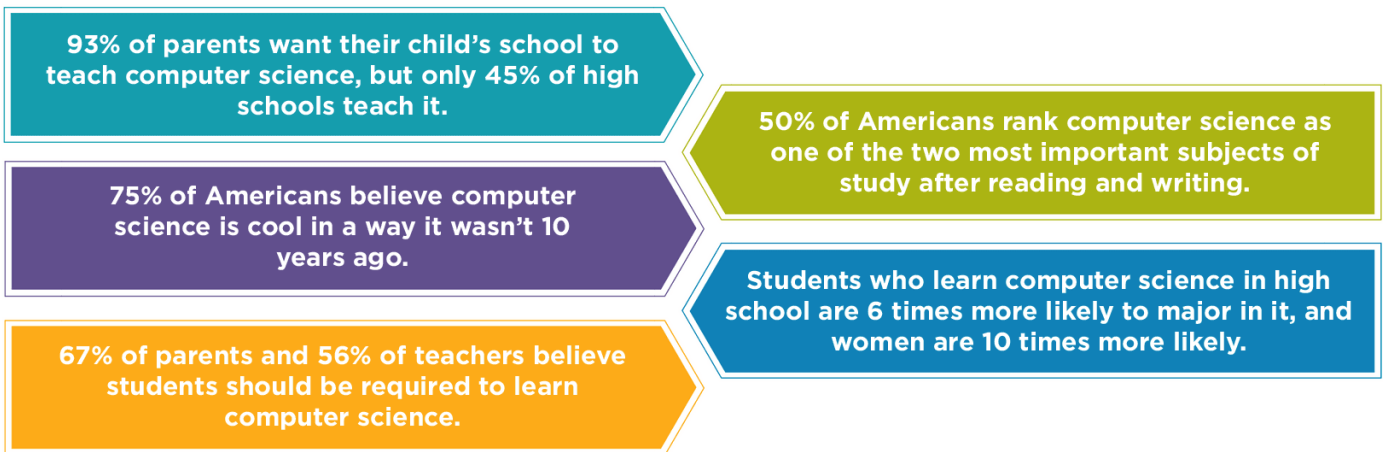
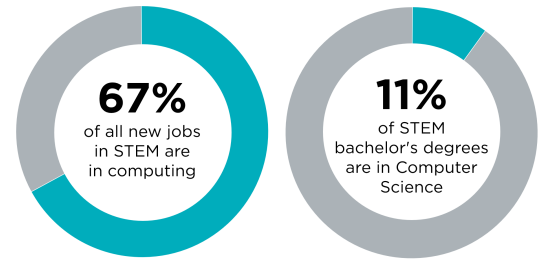


Support K-12 Computer Science Education in Hawaii

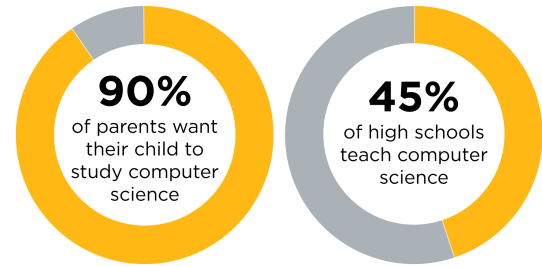
Computer science drives job growth and innovation throughout our economy and society. Computing occupations are the **number 1 source of all new wages in the U.S.** and make up over half of all projected new jobs in STEM fields, making Computer Science one of the most in-demand college degrees. And computing 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.



Computer science in Hawaii

- Hawaii currently has **1,393 open computing jobs** (5.3 times the average demand rate in Hawaii).
- The average salary for a computing occupation in HI is **\$83,548**, which is significantly higher than the average salary in the state (\$52,900). The existing open jobs alone represent a **\$116,382,509 opportunity** in terms of annual salaries.
- Hawaii had only **160 bachelor's degrees in Computer Science** in 2018; only **16%** were female.
- In Hawaii, only **62% of all public high schools teach a foundational computer science course.**
- Only **666 exams were taken in AP Computer Science by high school students in Hawaii in 2019** (155 took AP CS A and 511 took AP CSP).
- Only 30% were female (28% for AP CS A and 31% for AP CSP); only 93 exams were taken by Hispanic/Latino/Latina students (19 took AP CS A and 74 took AP CSP); only 1 exam was taken by Black/African American students (0 took AP CS A and 1 took AP CSP); no exams were taken by Native American/Alaskan students; only 20 exams were taken by Native Hawaiian/Pacific Islander students (1 took AP CS A and 19 took AP CSP).
- Only **33 schools** in HI (39% of HI schools with AP programs) offered an AP Computer Science course in 2018-2019 (12% offered AP CS A and 34% 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 Hawaii 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 Hawaii?



- 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 Hawaii: www.voterve.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.

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 reform. 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 Debra Nakama at debran@hawaii.edu or Hilary Apana-McKee at hilary.apana-mckee@k12.hi.us.

Code.org's impact in Hawaii

- In Hawaii, Code.org's curriculum is used in
 - 44% of elementary schools
 - 33% of middle schools
 - 33% of high schools
- There are 4,162 teacher accounts and 177,215 student accounts on Code.org in Hawaii.
- Of students in Hawaii using Code.org curriculum last school year,
 - 51% attend high needs schools
 - 21% are in rural schools
 - 45% are female students
 - 52% 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) STEMworks, and 4 facilitators have provided professional learning in Hawaii for
 - 1,031 teachers in CS Fundamentals (K-5)
 - 55 teachers in Exploring Computer Science or Computer Science Discoveries
 - 21 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>.

State Plan - The Hawaii State Department of Education developed a state plan for expanding computer science access in 2018. The plan includes a section focused on goals to increase diversity and equity in computer science.

K-12 Standards - Hawaii adopted the CSTA K–12 Computer Science Standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.

Funding - Hawaii **does not yet** provide dedicated funding for rigorous computer science professional development and course support. Although funds may be available via broader programs, the state can strengthen its computer science programs by creating specific opportunities to bring computer science to school districts, such as matching fund programs.

Certification - In Hawaii, teachers with existing licensure can obtain a K–6, 6–12, or K–12 certification by completing a state-approved teacher education program, passing the Praxis CS exam, coursework and experience, professional development and experience, or holding a certification from another state and experience. The state also has a limited license for individuals with CS industry experience.

Pre-Service Programs - Hawaii **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 Hawaii Department of Education has a Computer Science Specialist.

Require High Schools to Offer - Act 51 (2018) required all high schools to offer at least one computer science course by the 2021–2022 school year.

Count Towards Graduation - In Hawaii, AP computer science can count as the fourth mathematics credit required for the Academic or STEM Honors Recognition Certificate for graduation.

IHE Admission - Hawaii **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.