



Montana

2020 State of Computer Science Education: Illuminating Disparities

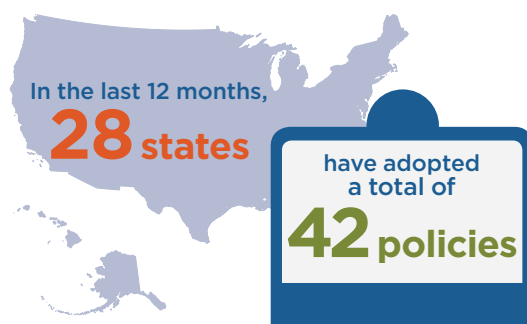
Computer science education is more important than ever. The COVID-19 pandemic has highlighted our society's reliance on computing and its power to help businesses innovate and adapt, yet at the same time has surfaced greater disparities for students studying computer science. Computing is the number one source of all new wages in our economy, and there are currently 400,000 open computing jobs across the United States. Yet the U.S. education system does not provide widespread access to this critical subject.

Although access to computer science is key to addressing the equity issues in society, only 47% of our nation's high schools teach foundational computer science. In addition, students from marginalized racial and ethnic groups, students in Title I schools, and students from rural areas are less likely to attend a school that provides access to this critical subject.

States are working to broaden participation in computer science by passing policies to make computer science a fundamental part of the K-12 education system. In addition to adopting more policies, state education leaders extend and innovate on previously adopted policies: continuing to fund

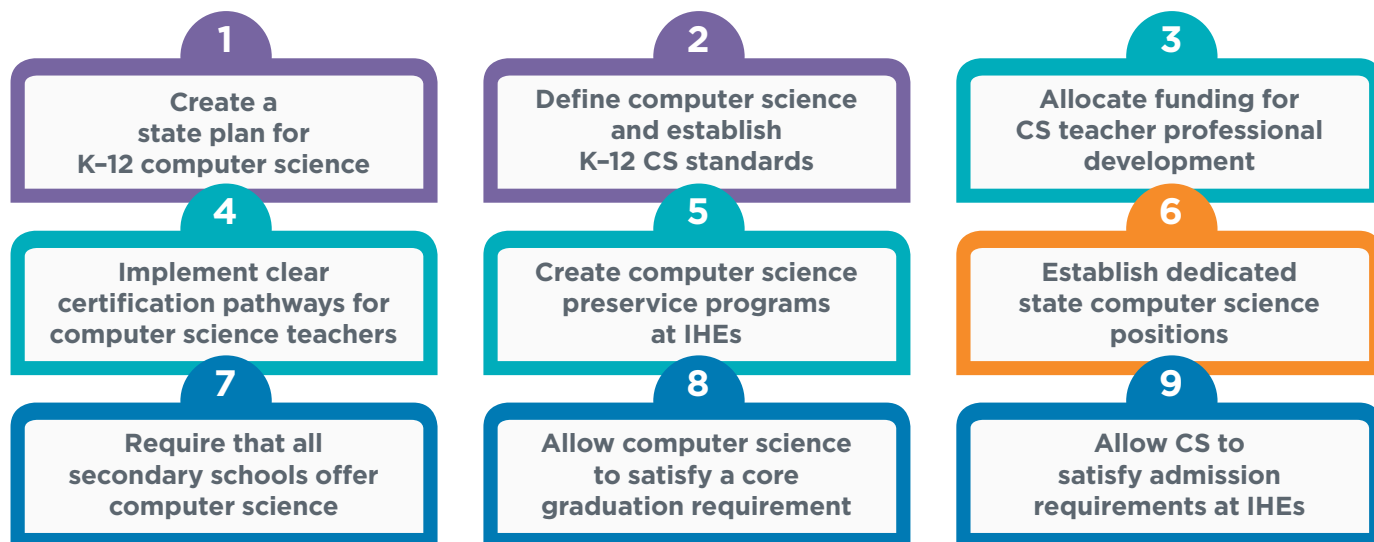
computer science education, supporting teachers and students, and providing leadership and guidance.

States that have adopted more of these nine policies have a larger percentage of high schools teaching computer science. States that have funded K-12 computer science professional learning have higher implementation rates than states that have not provided direct funding.



Pursuing an access agenda to K-12 computer science provides policymakers a rare opportunity to address equity, workforce, and education issues on a bipartisan basis. States should enact or expand on all nine of these education policies in order to provide opportunities for all students regardless of where they live, their race/ethnicity, gender, or socioeconomic status.

Nine Policies to Make Computer Science Fundamental





Montana Computer Science Policy

State Plan

No

Montana has not yet created a state plan for K-12 computer science. A plan that articulates the goals for computer science, strategies for accomplishing the goals, and timelines for carrying out the strategies is important for making computer science a fundamental part of a state's education system.

Standards

In Progress

Montana is developing K-12 computer science standards; state board approval is anticipated in fall 2020.

Funding

No

Montana 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

Yes

In Montana, teachers with existing licensure can obtain a K-12 endorsement through academic coursework. An initial license in computer science requires completing a teacher preparation program and passing the Praxis CS exam, or completing a non-traditional teaching program with five years of successful teaching experience.

Preservice

Yes

The Montana Office of Public Instruction has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.

CS Supervisor

No

Montana 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.

All HS Offer

No

Montana 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.

Grad Credit

District Decision

Montana passed a permissive and encouraging policy to allow computer science to count as a science, mathematics, elective, or CTE graduation requirement, but it is a district decision. Alternatively, a district may increase the local requirements in math, science, or career and technical education and allow a computer science course to fulfill one of the required credits, or establish a stand-alone requirement that all students complete a computer science credit.

IHE Admission

No

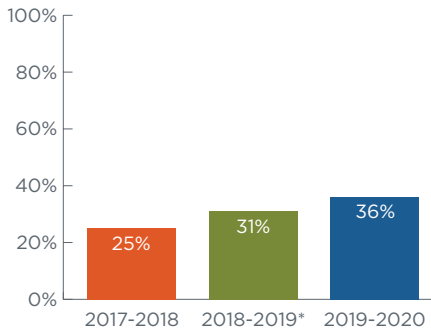
Montana does not yet allow computer science to count as a core admission requirement at institutions of higher education. Admission policies that do not include rigorous computer science courses as meeting a core entrance requirement, such as in mathematics or science, discourage students from taking 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.

Governor Steve Bullock is a member of the Governors' Partnership for K-12 Computer Science.



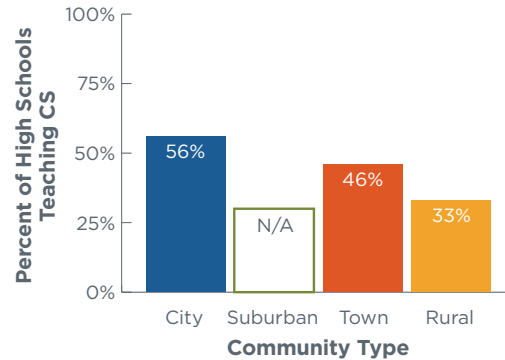
Computer Science Access and Participation in Montana

High Schools Teaching CS



*2018 data reflects a correction of last year's published number

Percent of High Schools Teaching CS by Community Type

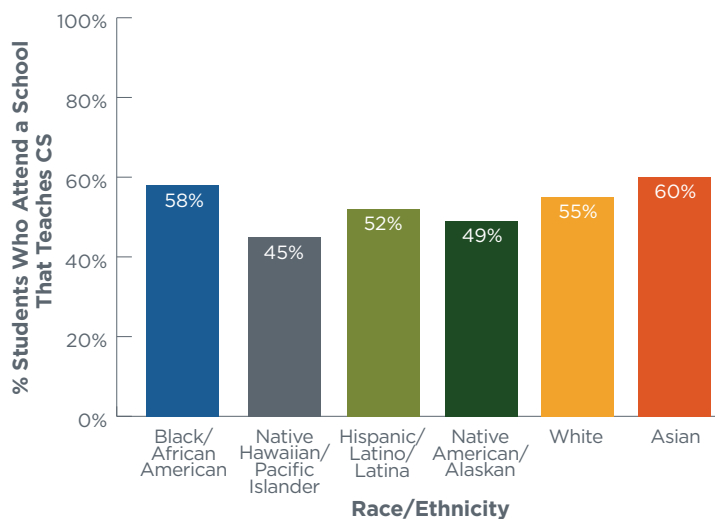


Montana has averaged
504
open computing jobs
each month*

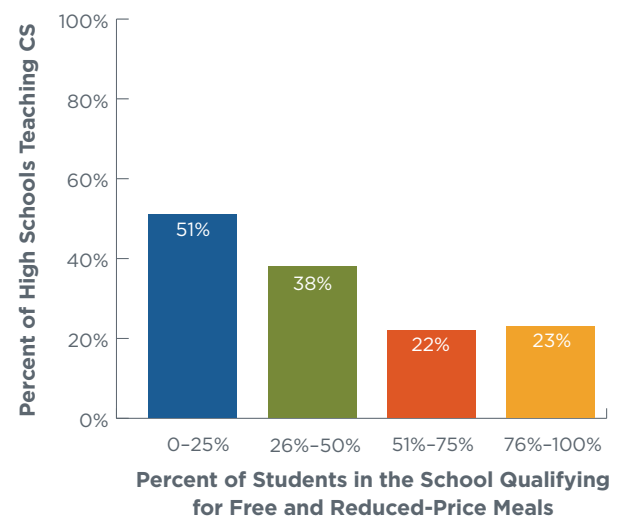


*Sources: The Conference Board and the National Center for Education Statistics

Race/Ethnicity and Access to Computer Science

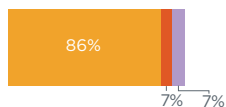


Income Level and Access to CS

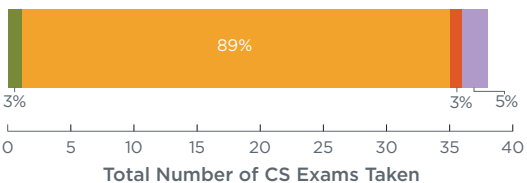


AP CS Participation by Race/Ethnicity and Gender

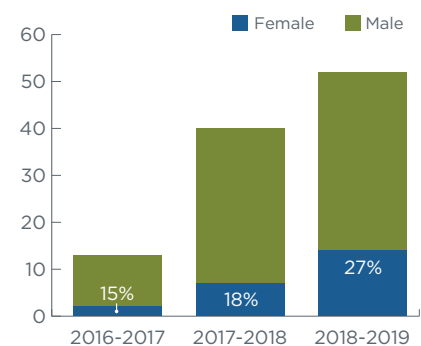
Female Students



Male Students



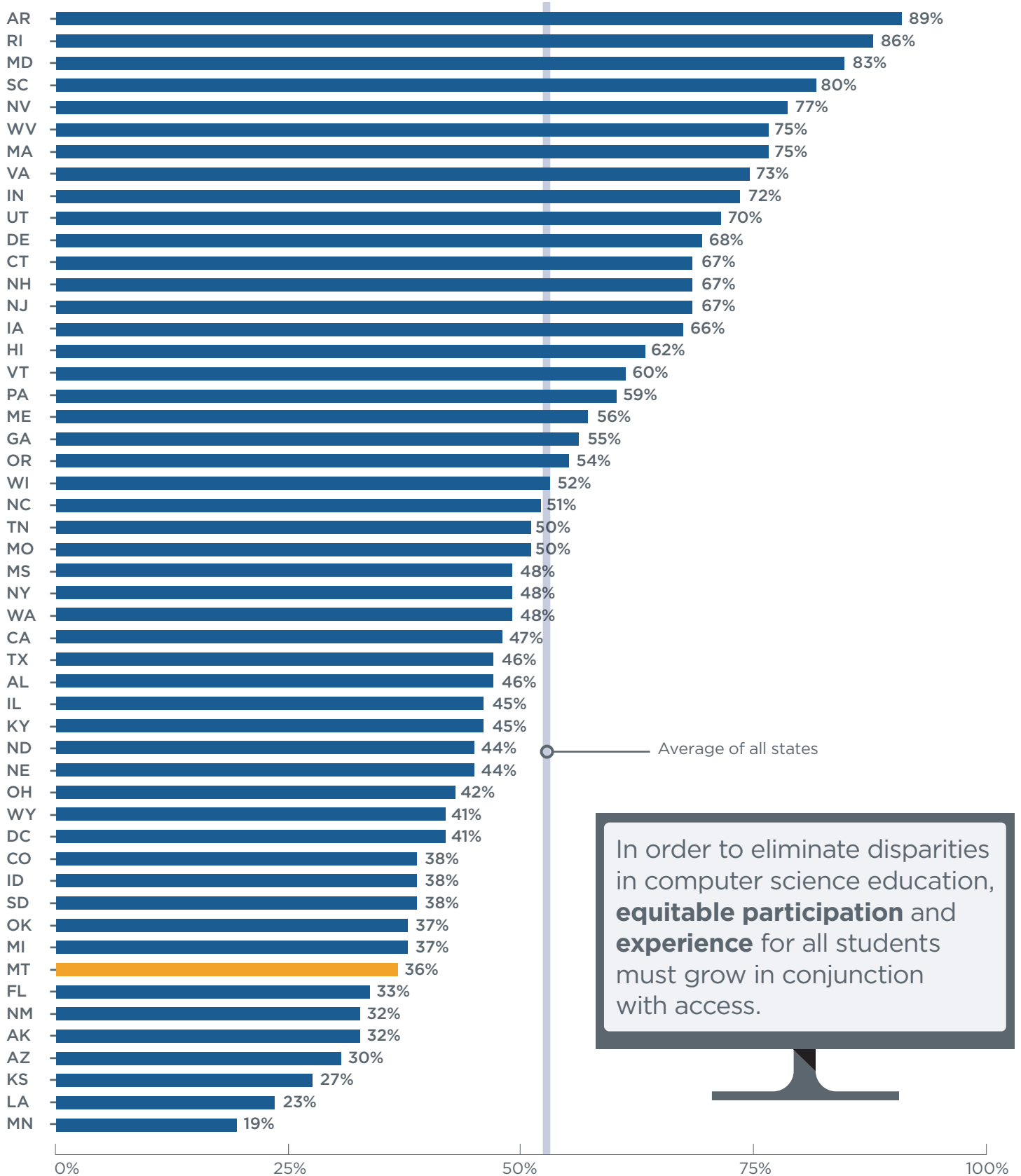
AP CS Student Participation



Although Native American/Alaskan students make up 11% of the overall student population, no Native American/Alaskan students took an AP CS exam. Hispanic/Latino/Latina students make up 4.7% of the overall student population, but only 1 Hispanic/Latino/Latina student took an AP CS exam.



Percent of High Schools Teaching Computer Science by State



For more details on policy, access, and participation, see the full 2020 State of Computer Science Education report at advocacy.code.org/stateofcs

