



MINNESOTA

2023 State of Computer Science Education

The rapid pace of technological advancement, as seen with the widespread integration of generative artificial intelligence (AI), underscores the need for foundational knowledge in computer science for all students. This report calls upon advocates to embrace the urgency of this matter and revamp school curricula to align with the demands of the 21st century, including requiring that all students learn computer science.

Currently, 57.5% of public high schools in the United States (U.S.) offer a foundational computer science class—an achievement marking the largest percentage growth in the last five years. Across the 35 states* where data is available, 5.8% of high school students are enrolled in foundational computer science. Even with growing access this growth, large disparities still exist, and we must continue to focus on eliminating participation gaps.

7,384

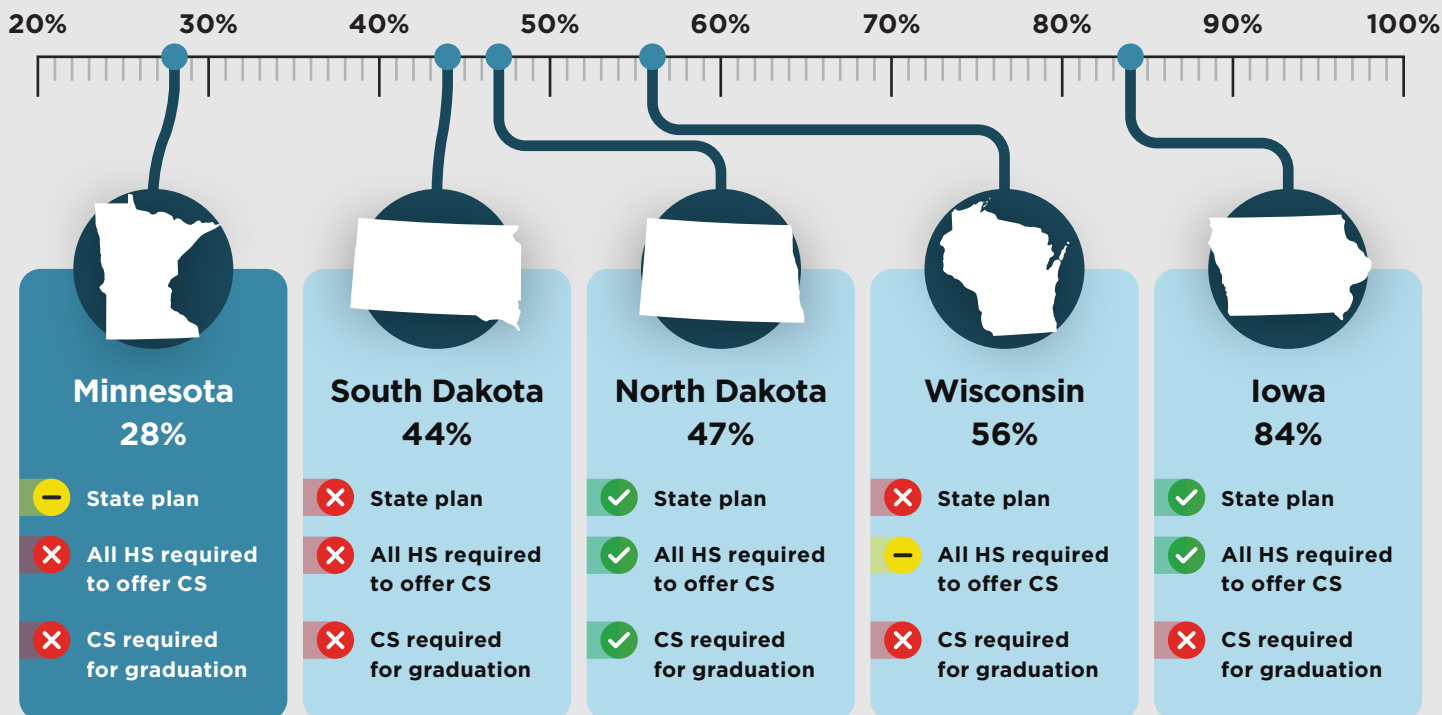
In 2023, MN averaged
7,384 open computing jobs
each month

\$105,311

These jobs have an average
salary of \$105,311

*AL, AR, AZ, CT, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, MS, NC, ND, NE, NJ, NM, NV, NY, OK, OR, PA, RI, TN, TX, UT, VA, VT, WV, WI

Comparative Access to Computer Science Courses (percentage of high schools offering)





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Ten Policies to Make Computer Science Foundational

1.

Create a **statewide plan** for K-12 computer science



2.

Define computer science and establish standards for K-12 computer science



3.

Allocate funding for rigorous computer science teacher professional learning



4.

Implement **clear certification pathways** for computer science teachers at elementary and secondary levels



5.

Create university programs to **encourage all preservice teachers** to gain exposure to computer science



6.

Establish **dedicated computer science** positions in a state education agency



7.

Require that all schools offer computer science with appropriate implementation timelines



8.

Allow computer science to count toward a core graduation requirement



9.

Allow **computer science to satisfy an admission requirement** at higher education institutions



10.

Require that all students take computer science to earn a high school diploma



What Has Minnesota Done to Advance Computer Science Education?

Minnesota passed \$1M for computer science in 2023, the first fully dedicated funding for the subject in the state.

Minnesota added a full-time computer science specialist to the Department of Education in 2023, joining the department's part-time specialist.

How Can Minnesota Increase Opportunities for Students?

Minnesota should continue to fund professional development opportunities annually to ensure there are enough teachers prepared to teach computer science in every school.

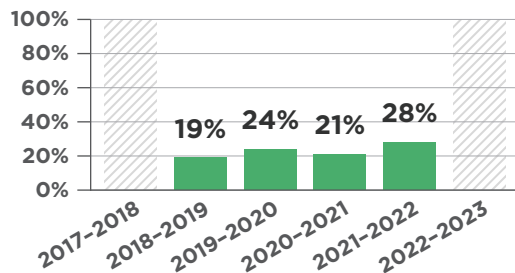
Minnesota should require all preservice teachers to receive instruction in computer science education.



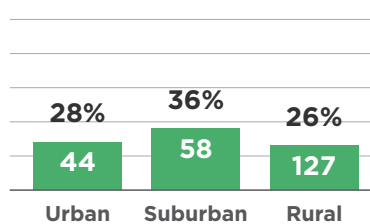
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Percentage of Public High Schools Offering Foundational Computer Science

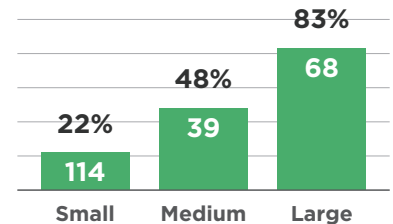
Access by School Year



Access by Geography*



Access by School Size*

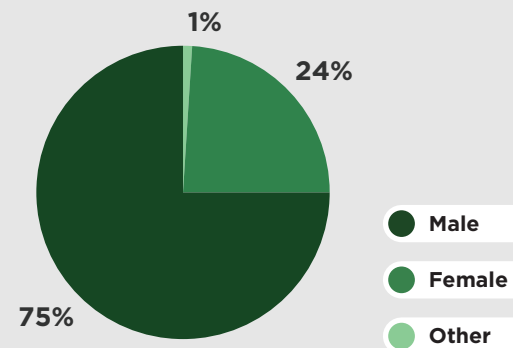


Small schools are 3 less likely to offer foundational computer science than medium and large schools

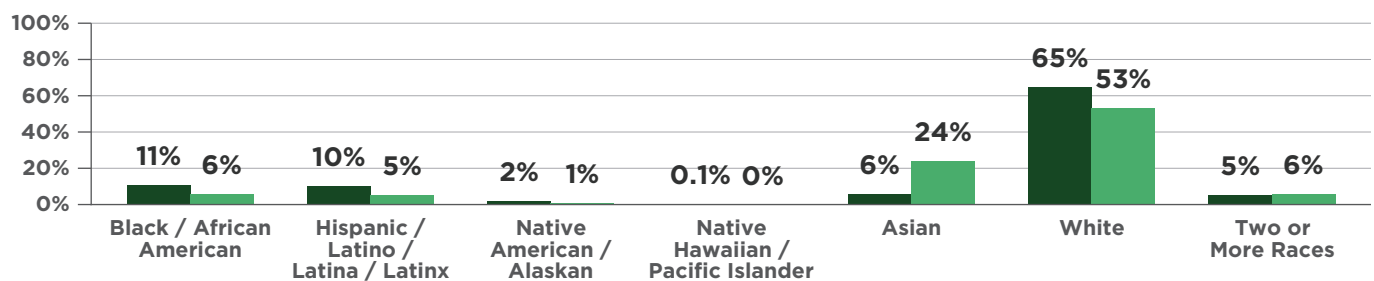
*Data is from the most recent data school year 2021-2022

Participation in AP Computer Science Exams by Gender

Course enrollment data for all foundational computer science courses is not available from Minnesota. Nationally, we know that participation in all foundational computer science is broader than AP participation.

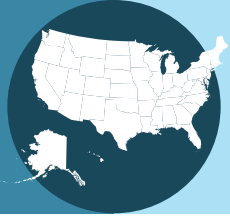


Participation in AP Computer Science Exams by Race/Ethnicity



Black and Hispanic students are 2 times less likely to take AP computer science exams than their white and Asian peers

● Student Demographics 9-12
● AP Exam Takers



UNITED STATES

Percentage of Public High Schools Offering Foundational Computer Science Nationally

