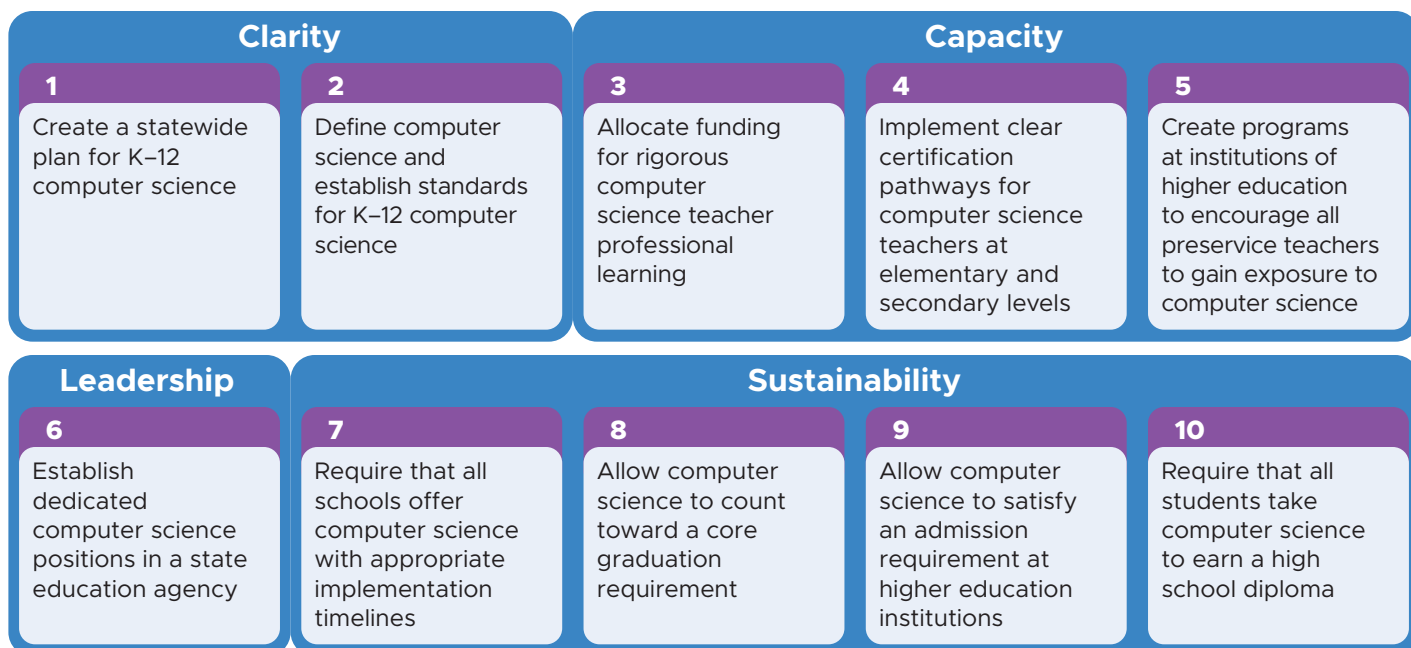# 2024 State of Computer Science Education

The United States is at a critical juncture in education policy: How do we prepare our students for a world increasingly driven by computing and generative artificial intelligence? Since the last edition of this report, there has been growing recognition among U.S. policymakers of the urgency of this issue, with 11 states now requiring students to earn credit in computer science to graduate from high school. The 2024 State of Computer Science Report urges policymakers to ensure that all students in every state learn computer science.

Over the last eight years, there has been significant progress, with more students than ever before taking computer science. Yet, millions of students still lack opportunities to engage in this essential subject. Only 60% of public high schools offer a foundational computer science course, and just 6.4% of high school students are enrolled annually. Young women, in particular, are far less likely to take computer science. This disparity underscores the urgent need for action.

The need for computer science education is understood worldwide. In 2023, the European Union called on all member countries to make computer science a required subject. Without decisive action, the United States risks falling behind on the global stage.
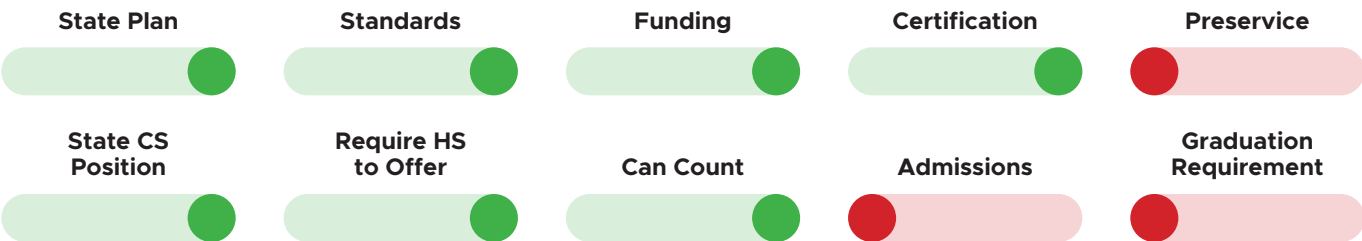
A recent University of Maryland study underscores the importance for all schools to invest in computer science education. The research reveals that offering just one computer science course in high school can increase students' earnings by at least 8% by age 24. The benefits are even more pronounced for low-income students, Black students, and young women.

The Code.org Advocacy Coalition recommends 10 policies to help build capacity and sustainability for K–12 computer science. When states take action and pass policies, students have more opportunities to benefit from computer science. This report provides updated policy, access, and participation data alongside examples and stories to guide policymakers and advocates in ensuring all students learn computer science.

Clarity

1
Create a statewide plan for K–12 computer science

2
Define computer science and establish standards for K–12 computer science

Capacity

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 programs at institutions of higher education to encourage all preservice teachers to gain exposure to computer science

Leadership

6
Establish dedicated computer science positions in a state education agency

Sustainability

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

HAWAI'I

Ten Policies to Make Computer Science Foundational

State Plan	Standards	Funding	Certification	Preservice
●	●	●	●	●

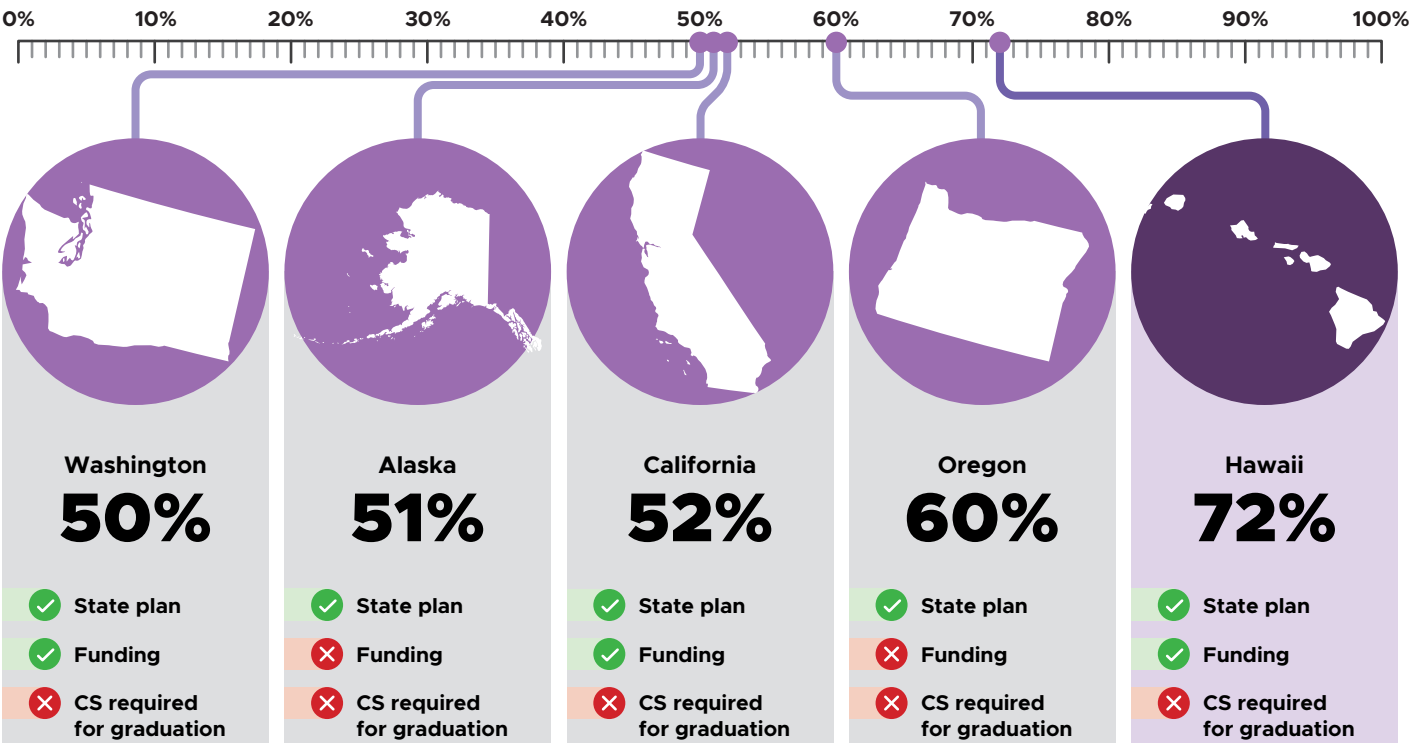| State CS Position	Require HS to Offer	Can Count	Admissions	Graduation Requirement
●	●	●	●	●

Policy Implementation

The Hawaii Board of Education is considering amending graduation requirements for all high school students, which would include adding a requirement in computer science. We strongly encourage the state to take this action.
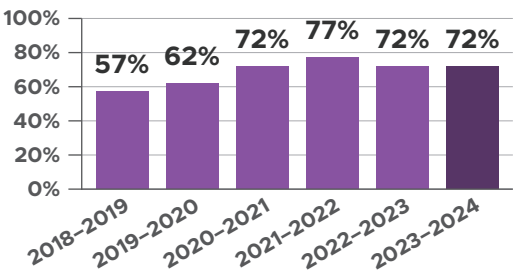
The Hawaii Legislature funded professional development for computer science teachers for the first time since 2018, appropriating $500K to the State Department of Education in 2024.

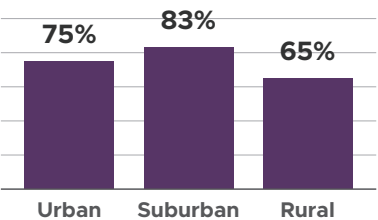## Comparative Access to Computer Science Courses (% of HS offering)

0% — 10% — 20% — 30% — 40% — 50% — 60% — 70% — 80% — 90% — 100%

Washington
50%
- ✓ State plan
- ✓ Funding
- ✗ CS required for graduation

Alaska
51%
- ✓ State plan
- ✗ Funding
- ✗ CS required for graduation

California
52%
- ✓ State plan
- ✓ Funding
- ✗ CS required for graduation

Oregon
60%
- ✓ State plan
- ✗ Funding
- ✗ CS required for graduation

Hawaii
72%
- ✓ State plan
- ✓ Funding
- ✗ CS required for graduation

Percentage of Public High Schools Offering Foundational Computer Science

Access by School Year

School Year	Percentage
2018–2019	57%
2019–2020	62%
2020–2021	72%
2021–2022	77%
2022–2023	72%
2023–2024	72%

Access by Geography*

	Percentage
Urban	75%
Suburban	83%
Rural	65%

Access by School Size*

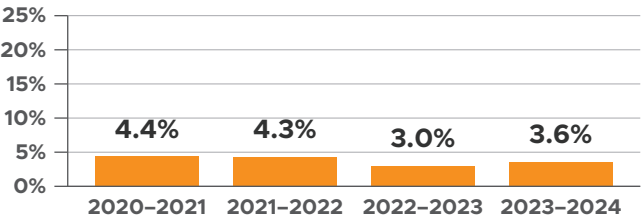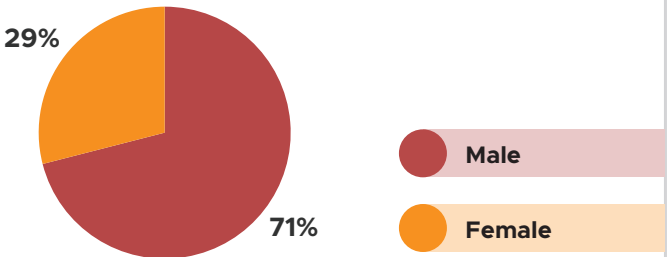|	Percentage
Small	52%
Medium	71%
Large	95%
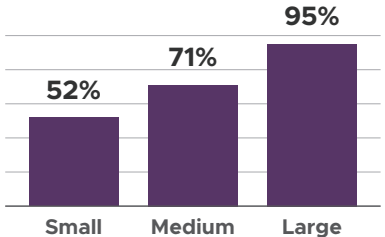
Data is from the most recent data school year 2023–2024

Participation in Foundational High School Computer Science

Participation by School Year

School Year	Percentage
2020–2021	4.4%
2021–2022	4.3%
2022–2023	3.0%
2023–2024	3.6%

Participation by Gender

- Male: 71%
- Female: 29%

Student Groups That Reached or Neared Parity

Students with 504 plans

Student Groups That Are Underrepresented

Young women, Hispanic/Latino students, Native Hawaiian students, economically disadvantaged students, students with IEPs, English language learners

We lack enough data on Black students and Native American students to determine representation.

Computer Science Prior to High School

Elementary School Computer Science

78%* of elementary schools offer computer science and 58% of students are enrolled.

Middle School Computer Science

64%** of middle schools offer computer science and 25% of students are enrolled.

This percentage is based on data received from 93% of elementary schools in the state, therefore the actual number of schools teaching may be higher.
**Hawaii reports on data from all middle schools.*

States ranked by their percentage of offering

60% — National Percentage Offering

State	Percentage
AR	100%
MD	100%
NV	95%
NH	95%
AL	94%
SC	92%
IN	91%
NJ	86%
MS	85%
IA	84%
CT	84%
MA	83%
RI	83%
UT	81%
WV	78%
GA	78%
KY	76%
PA	75%
WY	74%
VT	72%
HI	72%
NC	69%
VA	68%
OK	64%
ME	63%
DE	61%
OH	61%
TN	61%
OR	60%
IL	60%
CO	59%
MO	58%
TX	56%
MI	54%
NM	54%
DC	53%
NY	52%
WI	52%
NE	52%
CA	52%
SD	51%
AK	51%
WA	50%
ND	47%
ID	46%
AZ	43%
LA	39%
FL	38%
MN	36%
KS	35%
MT	31%