



# K–12 Computer Science Policy and Implementation in States

[Code.org's Nine Policy Elements](#)   [State-by-state data on the 9 policies](#)   [Current Legislation](#)

We are seeing a groundswell of interest and effort from students, parents, teachers, districts, and states to bring computer science into our K–12 system. Tens of millions of students are participating in the Hour of Code. Tens of thousands of teachers are going through professional development to bring computer science into their schools. Hundreds of school districts have embraced computer science in their curriculum. And in the past five years, every state has responded to this growing interest by passing policies to boost computer science.

Our advocacy coalition ( <https://advocacy.code.org> ) recommends nine policies states can adopt to make computer science foundational for all students (see: [https://code.org/files/Making\\_CS\\_Fundamental.pdf](https://code.org/files/Making_CS_Fundamental.pdf) ). Below is a list of state actions working toward these statewide policies and/or implementation plans for scaling K–12 computer science, including efforts prioritizing equity.

## Alaska

- **K-12 CS Standards:** Alaska adopted K–12 computer science standards based on the CSTA standards in 2019. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Making CS Count:** Alaska passed a permissive and encouraging policy to allow computer science to count as a mathematics, science, or local CTE/technology credit for graduation, but it is a district decision.

## Alabama

- **State Plan:** The Alabama Governor's Computer Science Advisory Council made a series of policy recommendations in 2019, including goals and strategies, but these recommendations did not include timelines.
- **K-12 CS Standards:** Alabama adopted K–12 computer science and digital literacy standards in 2018. The “Equitable Access” Position Statement in the standards document includes examples of ways to broaden participation in computer science education, and the standards address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 187 (FY 2021) and SB 199 (FY 2020) appropriated \$3.771M and \$2.771M for CS education: \$614K for the Middle School Programming Initiative, \$300K for CS educator training, \$1 and \$2M for CS4AL, and \$857K for the Technology in Motion Program to train K–12 teachers in computer science. HB 175 (FY 2019) appropriated \$613K for the Middle School Programming Initiative, and an additional \$300K was allocated for professional development. SB 129 (FY 2018) allocated \$675K for the Middle School Programming Initiative.

- **K-12 CS Certification:** In Alabama, teachers with existing licensure can add 6–12 computer science as an additional teaching field by passing the Praxis CS exam. Teachers can also obtain a course-specific permit by completing an approved training or college credit for the specific course. State funding for computer science can support credentialing for teachers.
- **Preservice Incentives:** In September 2019, the Alabama State Board of Education passed Teacher Educator Standards for Computer Science, which are used to approve programs at institutions of higher education.
- **Dedicated CS Position:** The Alabama State Department of Education has an Education Specialist and an Educator Administrator for Digital Literacy and Computer Science.
- **Requiring All Secondary Schools to Offer CS:** Act 389 (2019) required all high schools, middle schools, and elementary schools to offer computer science by the 2020–2021 school year. The act required the State Department of Education to report the aggregate gender, racial, and socioeconomic diversity of students enrolled in high-quality computer science courses.
- **Making CS Count:** In Alabama, courses including AP Computer Science A or AP Computer Science Principles can count as a mathematics or science credit for graduation.
- **Higher Education Admission:** Computer science can count as a mathematics or science credit required for admission, as determined by each public institution of higher education in Alabama.

## Arkansas

- **State Plan:** The Arkansas Department of Education developed a state plan for computer science education on recommendations from the Computer Science and Technology in Public School Task Force in 2016. In October 2020, the Computer Science and Cybersecurity Force released a new set of recommendations.
- **K-12 CS Standards:** Arkansas adopted K–8 computer science standards in 2015 and 9–12 standards in 2016. All students learn the K–6 standards and take a coding block in 7th or 8th grade.
- **Funding:** Act 154 (FY 2021), Act 877 (FY 2020), Act 243 (FY 2019), Act 1044 (FY 2018), and Act 189 (FY 2016 and 2017) allocated \$2.5M annually for the Computer Science Initiative. One grant program for schools prioritizes programs that broaden participation in computer science courses.
- **K-12 CS Certification:** In Arkansas, teachers with existing licensure can add a 4–12 endorsement by passing the Praxis CS exam; teachers can also earn an initial license in computer science. Until the 2021–2022 school year, any teacher with a grade-appropriate license can obtain an approval code by completing one of the following: approved professional development, prior computer science teaching, coursework in computer science, or other department requirements. State funding for computer science can support credentialing for teachers. Beginning with the 2023–2024 school year, each public school district must employ at least one computer science certified teacher at each high school (Act 414, 2021).
- **Preservice Incentives:** Arkansas has approved secondary computer science preparation programs at several institutions of higher education and lists these institutions publicly. The state also requires all preservice elementary teachers to receive instruction in computer science education. ForwARd Arkansas scholarships are available for students studying to become licensed computer science instructors and commit to teaching in a ForwARd Community school district.

- **Dedicated CS Position:** The Arkansas Department of Education has an office of computer science with four staff members focusing on computer science, including the State Director of Computer Science Education. There are also multiple statewide computer science specialists.
- **Requiring All Secondary Schools to Offer CS:** Act 187 (2015) required all high schools to offer computer science by the 2015–2016 school year. Each school reports computer science enrollment by grade and race.
- **Making CS Count:** In Arkansas, all students must take one credit of computer science to graduate (Act 414, 2021). Any computer science course can count as a mathematics or science credit for high school graduation.
- **Higher Education Admission:** Any computer science course can count as a mathematics or science credit required for admission at institutions of higher education, which aligns with Arkansas's high school graduation policy.

## Arizona

- **K-12 CS Standards:** Arizona adopted K–12 computer science standards with a focus on equity in 2018. The state intends to close the access gap for underserved populations including students with disabilities, women, and students in underrepresented racial and ethnic groups. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** SB 1692 (FY 2021), HB 2302 (FY 2020), and HB 2663 (FY 2019) included \$1M annually for the computer science professional development program, prioritizing schools that currently do not provide computer science instruction. The program requires a 50% match of state funding with private monies or in-kind donations. In addition, HB 2303 (FY 2019) prioritized rural schools and schools with at least 60% of the students eligible for free and reduced-price lunches. HB 2537 (FY 2018) allocated \$200K to support standards and professional development. SB 1568 (FY 2017) allocated \$500K, with a focus on Native American students.
- **K-12 CS Certification:** In Arizona, teachers with existing licensure can obtain the PreK–8 or 6–12 endorsement by completing a district-approved program or academic coursework in computer science content and teaching methods. The PreK–12 special subject endorsement requires completing academic coursework in computer science content and methods.
- **Making CS Count:** Arizona passed a permissive and encouraging policy to allow computer science to count as a mathematics credit for graduation, but it is a district decision.

## California

- **State Plan:** The California State Board of Education adopted the Computer Science Strategic Implementation Plan in 2019. The plan includes practices and recommendations for equitable outcomes, such as providing culturally responsive training materials to support educators.
- **K-12 CS Standards:** California adopted K–12 computer science standards in 2018. The introduction includes "Issues of Equity," describing equity, access, and representation. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity. The California NGSS Curriculum Framework also includes major sections on computational thinking and computer science for educators.

- **Funding:** California has not provided dedicated state funding for computer science. Although SB 75 (FY 2019) appropriated \$22.1M to the Educator Workforce Investment Grant Program, including \$5M to support professional learning for computer science teachers, the state reallocated this funding for COVID-19 relief in April 2020.
- **K-12 CS Certification:** In California, teachers with existing licensure can obtain a supplementary authorization for PreK–12 through academic coursework.
- **Making CS Count:** California passed a permissive and encouraging policy to allow computer science to count as a science or mathematics credit for graduation, but it is a district decision.
- **Higher Education Admission:** Approved computer science courses can count as the recommended third-year science course (area D) or as a mathematics credit (area C) required under the University of California system admissions criteria, which aligns with the high school graduation policy.

## Colorado

- **K-12 CS Standards:** Although Colorado does not yet have a discrete set of rigorous computer science standards across K–12, the state adopted high school computer science standards in 2018.
- **Funding:** HB 20-1360 (FY 2021) and SB 19-207 (FY 2020) appropriated \$801,657 and \$1,048,600 for Computer Science Education Grants for Teachers, which give priority to applications serving rural areas, areas with high numbers of students eligible for free and reduced-price meals, or areas with high numbers of students from underrepresented racial and ethnic groups. HB 18-1322 (FY 2019) allocated \$500K for K–5 teacher professional development. SB 17-296 (FY 2018 and 2019) allocated up to \$500K annually for teachers pursuing postsecondary computer science education. HB 16-1289 (FY 2017) offered schools \$1K for each student enrolled in AP computer science. Due to COVID-19 related budget cuts, the state reduced funding for FY 2021 from planned allocations (\$250K annually for FY 2021, 2022, and 2023 in HB 19-1277).
- **Dedicated CS Position:** The Colorado Department of Education has a Computer Science Content Specialist.
- **Making CS Count:** Colorado passed a permissive and encouraging policy to allow computer science to count as either a mathematics or science credit for graduation, but it is a district decision.
- **Higher Education Admission:** A computer science course with a mathematics prerequisite can count as a mathematics credit required for admission at institutions of higher education in Colorado.

## Connecticut

- **State Plan:** The Connecticut State Board of Education adopted a computer science plan in 2020. The plan includes recommendations to reduce gaps in access to computer science courses for female students, students with high-need, and students from marginalized racial and ethnic groups underrepresented in computer science. The plan also targets diverse representation in teachers of computer science courses.
- **K-12 CS Standards:** Connecticut 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:** Although SB 957 (2019) created a fund for computer science, no funding has been dedicated yet.
- **K-12 CS Certification:** In Connecticut, teachers with existing licensure can obtain the K–6 or 7–12 endorsement through academic coursework or passing the Praxis CS exam (approved in December 2019).
- **Preservice Incentives:** SB 957 (2019) required teacher preparation programs to include, as part of the curriculum for all preservice candidates, instruction in computer science that is grade-level and subject-area appropriate.
- **Dedicated CS Position:** The Connecticut Department of Education has a Computer Science Education Consultant.
- **Requiring All Secondary Schools to Offer CS:** SB 957 (2019) added computer science to the list of subjects that public schools must teach, with implementation by the 2019–2020 school year.
- **Making CS Count:** Connecticut does not yet allow computer science to count for a core graduation requirement, but the Department of Education expects districts to align computer science instruction to the state approved standards so that computer science is eligible as part of the STEM credit pathway required for graduation (Sec 10-221a).

## District of Columbia

- **K-12 CS Certification:** In DC, teachers with existing licensure can obtain a 7–12 certification by passing the Praxis CS exam. An initial license in computer science requires academic coursework and passing the exam.
- **Making CS Count:** In DC, an AP computer science course can count as the fourth-year upper-level mathematics credit for graduation.

## Delaware

- **K-12 CS Standards:** Delaware adopted the CSTA K–12 Computer Science Standards in 2018. The "Equity" section in the Implementation Guidelines includes examples of ways to broaden participation in computer science education, and standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Requiring All Secondary Schools to Offer CS:** HB 15 (2017) required all high schools to offer computer science by the 2020–2021 school year.
- **Making CS Count:** In Delaware, an Advanced Placement, honors, college prep, or integrated computer science course meeting the computer science and mathematics standards can count as the fourth mathematics credit for graduation.

## Florida

- **K-12 CS Standards:** Florida adopted K–12 computer science standards as a strand within the state science standards in 2016. Benchmarks within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 5001 (FY 2021) and SB 2500 (FY 2020) allocated \$10M annually for computer science teacher certification and professional development. SB 7070 (FY 2019) established recruitment awards for newly hired teachers who are content experts in computer science.
- **K-12 CS Certification:** In Florida, teachers can obtain the K–12 certification as an initial license or an add-on endorsement through academic coursework. State funding for

computer science can be used to support credentialing for teachers.

- **Dedicated CS Position:** The Florida Department of Education has a Computer Science Program Specialist.
- **Requiring All Secondary Schools to Offer CS:** HB 495 (2018) required all middle and high schools to offer computer science or provide students access via the Florida Virtual School if a district is unable to provide access.
- **Making CS Count:** In Florida, computer science can count as a math or science credit for graduation (HB 7071 in 2019 removed the industry certification requirement).

## Georgia

- **State Plan:** The Georgia Department of Education developed a state plan for expanding computer science in 2018. The plan includes strategies to build diversity in computer science education, which includes rural and economically challenged communities.
- **K-12 CS Standards:** Although Georgia does not yet have a discrete set of rigorous computer science standards across K–12, K–8 computer science standards were adopted in 2019.
- **Funding:** HB 793 (FY 2021) and HB 31 (FY 2020) appropriated \$656.5K and \$750K for the grant program established by SB 108 (FY 2019). HB 80 (2021), a general appropriations act, increased the Computer Science Professional Development by \$60,775 for the current fiscal year (FY 2021). HB 683 (FY 2018) appropriated \$500K for middle school coding and teacher professional development. In FY 2016, the Governor's Office of Student Achievement Innovation Funds allocated \$250K for the expansion of computer science.
- **K-12 CS Certification:** In Georgia, teachers with existing licensure can obtain a 6–12 academic endorsement by passing the Georgia GACE Computer Science Assessment. An initial license in computer science requires completing a state-approved program.
- **Preservice Incentives:** The Georgia Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Georgia Department of Education has a Computer Science Education Program Specialist.
- **Requiring All Secondary Schools to Offer CS:** SB 108 (2019) required all high schools to offer computer science beginning in the 2024–2025 school year. The state set incremental requirements for each year, requiring that at least one high school in each local school system offers a course by the 2022–2023 school year, and half of all high schools offer a course by the 2023–2024 school year. Further, all middle and elementary schools must offer instruction in exploratory computer science by the 2022–2023 school year.
- **Making CS Count:** Of the approved computing courses in Georgia, nine can count as the fourth mathematics credit or the fourth science credit for graduation.

## Hawaii

- **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 CS 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:** HB 2607 (FY 2019) dedicated \$500K to computer science teacher professional development and required grantees to address how they plan to instruct teachers to effectively teach students in computer science, including students from demographic groups that are historically underrepresented in computer science. In 2019, the state budget increased the weighted per-pupil funding to schools by \$3M, directing that schools use some of these funds to implement computer science curriculum.
- **K-12 CS 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.
- **Dedicated CS Position:** The Hawaii Department of Education has a Computer Science Specialist.
- **Requiring All Secondary Schools to Offer CS:** Act 51 (2018) required all high schools to offer at least one computer science course by the 2021–2022 school year.
- **Making CS Count:** In Hawaii, AP computer science can count as the fourth mathematics credit required for the Academic or STEM Honors Recognition Certificate for graduation.

## Iowa

- **State Plan:** Iowa HF 2629 (2020) required the development of a statewide K–12 computer science plan by July 1, 2022.
- **K-12 CS Standards:** Iowa 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:** HF 2643 (FY 2021), HF 758 (FY 2020) and HF 642 (FY 2019) allocated \$500K annually for computer science professional development. Another \$500K was added to the fund in FY 2019. The grant rubric prioritizes targeted efforts to increase computer science participation by underrepresented groups (including female students, economically disadvantaged students, and students who are Black/African American, Hispanic/Latino/Latina, American Indian/Alaskan, or Native Hawaiian/Pacific Islander).
- **K-12 CS Certification:** In Iowa, teachers with existing licensure can obtain a 5–12 or K–8 endorsement by completing a state-approved program or academic coursework in both content and methods. The state waived these requirements in 2018 for teachers who could demonstrate content knowledge and successful teaching experience.
- **Dedicated CS Position:** The Iowa Department of Education has a Computer Science Education Program.
- **Requiring All Secondary Schools to Offer CS:** HF 2629 (2020) required all high schools to offer computer science by July 1, 2022, and required all elementary and middle schools to offer computer science in at least one grade level by July 1, 2023.
- **Making CS Count:** Iowa passed a permissive and encouraging policy to allow computer science to count as a mathematics credit for graduation, but it is a district decision.
- **Higher Education Admission:** Computer science can count towards a core subject area credit required for admission at institutions of higher education in Iowa.

## Idaho

- **State Plan:** The Idaho STEM Action Center and Idaho Digital Learning Academy developed the Idaho Computing Technology K–12 CS State Plan in 2018. The plan includes goals and strategies to increase access for female students, rural students, low-income students, and students from marginalized racial and ethnic groups underrepresented in computer science.
- **K-12 CS Standards:** Idaho adopted K–12 computer science standards based on the CSTA standards in 2017. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** H0331 (FY 2021) allocated \$500K, H0215 (FY 2020) allocated \$1M, and H0669 (FY 2019), H0298 (FY 2018), and H0379 (FY 2017) allocated \$2M annually for the expansion of computer science.
- **K-12 CS Certification:** In Idaho, teachers with existing licensure can obtain a 6–12 or 5–9 endorsement by passing the Praxis CS exam. An initial license in computer science requires completing a state-approved program and passing the exam. A 6–12 CTE Occupational Specialist certification in computer science can be obtained with industry experience.
- **Preservice Incentives:** The Idaho Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Idaho Governor's STEM Action Center has a Computer Science Program Manager.
- **Requiring All Secondary Schools to Offer CS:** H648 (2018) required each school district to make one or more computer science courses available to all high school students by FY 2020. Students must have the option of taking the course as part of their course schedule during normal instructional hours at the school where the student is enrolled. Courses may be offered through virtual education programs and online courses, traditional in-person courses, or a combination of online and in-person instruction.
- **Making CS Count:** In Idaho, AP Computer Science or dual-credit computer science can count as one mathematics (after completion of Algebra II) or up to two science credits for graduation.
- **Higher Education Admission:** Under certain conditions, computer science can count as a mathematics or science credit required for admission at institutions of higher education in Idaho.

## Illinois

- **K-12 CS Standards:** The Illinois State Board of Education began developing standards with their committee in December 2020.
- **K-12 CS Certification:** In Illinois, teachers with existing licensure can obtain a 5–8, 6–8, or 9–12 endorsement through academic coursework, including computer science teaching methods and passing the state content exam.
- **Requiring All Secondary Schools to Offer CS:** HB 2170 (2021) required each school district that maintains any of the grades 9 through 12 provide an opportunity for every high school student to take at least one computer science course by the 2023–2024 school year.
- **Making CS Count:** In Illinois, computer science can count as a mathematics credit for graduation.
- **Higher Education Admission:** Computer science can count as a mathematics credit required for admission at institutions of higher education, which aligns with Illinois's high school graduation policy.



## Indiana

- **State Plan:** The Indiana Department of Education created a state plan for computer science education implementation in 2019. The plan includes a section focused on goals and strategies to increase participation for female students, students with disabilities, rural students, and students from marginalized racial and ethnic groups underrepresented in computer science.
- **K-12 CS Standards:** Indiana published a comprehensive set of K–12 computer science standards in 2018.
- **Funding:** HEA 1001 (FY 2020 and 2021) allocated \$3M annually for teacher professional development. SEA 172 (FY 2019) required the Department of Education to contract with a provider to offer professional development.
- **K-12 CS Certification:** In Indiana, teachers with existing licensure can obtain a 5–12 or preK–12 academic endorsement by passing the state-adopted content exam. An initial license in computer science requires completing a state-approved program and passing the exam. The state has a CTE Workplace Specialist license for individuals with occupational experience.
- **Preservice Incentives:** The Indiana Department of Education has approved computer science teacher preparation programs leading to certification in computer science and lists these programs publicly. In 2020, Indiana began requiring all preservice K–8 teachers to learn computer science.
- **Dedicated CS Position:** The Indiana Department of Education has a Computer Science Specialist.
- **Requiring All Secondary Schools to Offer CS:** SEA 172 (2018) required all elementary, middle, and high schools to offer computer science by the 2021–2022 school year. SEA 295 (2020) required the Department of Education to post an annual report on computer science course enrollment disaggregated by race, gender, grade, ethnicity, limited English proficiency, free and reduced lunch status, and eligibility for special education.
- **Making CS Count:** In Indiana, AP Computer Science, IB Computer Science, Cambridge International CS, Industrial Automation and Robotics, or CTE CS I or II can count as a mathematics or quantitative reasoning credit required for graduation. Computer science can also count as the third science requirement.
- **Higher Education Admission:** Computer science can count as a mathematics credit required for admission at institutions of higher education, which aligns with Indiana's high school graduation policy.

## Kansas

- **State Plan:** Although Kansas has not yet created a plan for K–12 computer science, the State Board of Education adopted five policy recommendations from the Department of Education's Computer Science Education Task Force in 2020. The five recommendations include encouraging all schools to offer computer science, allowing computer science to satisfy a core graduation requirement, create a licensure endorsement, and arrange funding to carry out these goals.
- **K-12 CS Standards:** Kansas adopted preK–12 computer science standards in 2019. A primary goal of the standards is to increase the availability of rigorous computer science for all students, especially those who are members of underrepresented groups.

- **Dedicated CS Position:** The Kansas Department of Education has a Computer Science Education Program Consultant.

## Kentucky

- **State Plan:** Kentucky is in the process of creating a plan for K–12 computer science for submission to the legislature in November 2020.
- **K-12 CS Standards:** Kentucky adopted K–12 computer science standards in 2019.
- **Funding:** HB 2000 (FY 2020) dedicated \$800K to the CS and IT academy to address growth in computer science learning. The funding is dedicated to student exam vouchers, teacher K–12 computer science professional learning, and teacher industry certifications.
- **K-12 CS Certification:** In Kentucky, teachers with existing licensure can obtain an 8–12 endorsement in computer science.
- **Dedicated CS Position:** The Kentucky Department of Education has a dedicated K–12 Computer Science Lead.
- **Making CS Count:** Kentucky passed a permissive and encouraging policy to allow computer science to count as an elective science credit or a fourth-year mathematics credit for graduation, but it is a district decision. The course must involve computational thinking, problem-solving, computer programming, and a significant emphasis on the science and engineering practices.
- **Higher Education Admission:** In Kentucky, computer science can count as a mathematics credit required for admission at institutions of higher education if the K–12 district allows the student to fulfill a mathematics graduation credit via the computer science course.

## Louisiana

- **K-12 CS Certification:** In Louisiana, teachers with existing licensure can add a 6–12 specialty content area in computer science through academic coursework and/or passing the Praxis CS exam.
- **Making CS Count:** In Louisiana, AP Computer Science A can count as an advanced mathematics credit for graduation.
- **Higher Education Admission:** AP Computer Science A can count as a mathematics credit required for admission at institutions of higher education in Louisiana.

## Massachusetts

- **State Plan:** The Massachusetts Department of Elementary and Secondary Education created the 2019 Digital Literacy Now 3 Year Plan, which includes goals, strategies, and timelines for advancing K–12 computer science. One goal of the plan is to focus on ensuring that female students, students from marginalized racial and ethnic groups, and underserved populations receive high-quality instruction.
- **K-12 CS Standards:** Massachusetts adopted K–12 digital literacy and computer science standards in 2016.
- **Funding:** H4000 (FY 2020) allocated \$1M for the implementation of engaging and rigorous Digital Learning Computer Science education; \$590K went to the Digital Literacy Now grant program for school district teams to develop digital literacy and computer science state plans and complete professional development. The grant program prioritizes underserved students, including economically disadvantaged students, English language learners,

students receiving special education services, students from marginalized racial and ethnic groups, and students in rural areas. H4800 (FY 2019) and H3650 (FY 2016) allocated \$850K and \$1.7M for professional development and implementation support and required a one-to-one private match.

- **K-12 CS Certification:** In Massachusetts, teachers with or without existing licensure can obtain a 5–12 certification by demonstrating competency in each of the computer science standards through a combination of academic coursework, professional development, mentorship experience, teaching experience, passing the Pearson and/or Praxis CS exam, and/or by completing an approved teacher preparation program.
- **Preservice Incentives:** The Massachusetts Department of Elementary and Secondary Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Massachusetts Department of Elementary and Secondary Education has a Computer Science Content Coordinator.
- **Making CS Count:** In Massachusetts, a computer science course can substitute for either a mathematics or laboratory science course if the course includes rigorous mathematical or scientific concepts and aligns with the state computer science standards. Students in technical and vocational programs may substitute a computer science course for a foreign language.
- **Higher Education Admission:** In Massachusetts, a computer science course can count as a mathematics, science, or foreign language credit required for admission at institutions of higher education if the course meets certain criteria.

## Maryland

- **State Plan:** The Maryland Center for Computing Education developed a state plan for computer science in 2018. The plan addresses efforts to increase enrollment in computer science courses for female students, students with disabilities, and students from marginalized racial and ethnic groups underrepresented in computer science.
- **K-12 CS Standards:** Maryland approved K–12 computer science standards aligned to the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 281 (FY 2020 and 2021) allocated \$1M annually, and SB 185 (FY 2019) allocated \$5M for the computer science education initiative. The grants prioritize applications that focus on serving areas with high poverty, rural areas, students with disabilities, female students, or students from marginalized racial and ethnic groups.
- **K-12 CS Certification:** In Maryland, teachers with existing licensure can obtain a 7–12 endorsement through academic coursework or passing the Praxis CS exam. An initial computer science licensure requires completing academic coursework and passing the exam. Pathways for CTE, alternative certification, and an accelerated certificate also exist. A stipend is available through the MCCE for teachers who pass the exam.
- **Preservice Incentives:** The Maryland State Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly. The state provides funding for teacher preparation institutions to establish computer science education programs via HB 281 (2018).
- **Dedicated CS Position:** The Maryland State Department of Education has a Computer Science Education Specialist as well as a Career Programs, STEM, and Computer Science

Coordinator who work with the Director of the Maryland Center for Computing Education to oversee computer science education.

- **Requiring All Secondary Schools to Offer CS:** HB 281 (2018) required all high schools to offer at least one computer science course by the 2021–2022 school year and asks each school board to make efforts to incorporate computer science in each elementary and middle school and to increase the enrollment of female students, students with disabilities, and students of underrepresented ethnic or racial groups.
- **Making CS Count:** In Maryland, Foundations of Computer Science or Computer Science Principles can fulfill the technology credit requirement. AP Computer Science A can count as one of the four mathematics credits for graduation.
- **Higher Education Admission:** AP Computer Science can count as one of the four mathematics credits required for admission at institutions of higher education, as long as computer science is not the final year course, which aligns with Maryland's high school graduation policy.

## Maine

- **State Plan:** The Maine Department of Education developed a state plan for computer science in January 2020 as required by LD 1382. Previously, a task force established by LD 398 (2017) presented recommendations to recognize computer science in the path to proficiency.
- **Dedicated CS Position:** The Maine Department of Education has a Secondary Digital Learning and Computer Science Specialist.
- **Making CS Count:** Maine passed a policy in 2019 to allow computer science to count as a credit for graduation, but it is a district decision.

## Michigan

- **K-12 CS Standards:** Michigan adopted the CSTA K–12 Computer Science Standards in 2019. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **K-12 CS Certification:** Michigan phased out the computer science endorsement in 2017 so that any licensed teacher is eligible to teach computer science.
- **Preservice Incentives:** After Michigan phased out the computer science certification, teacher preparation programs in the state also phased out preservice programs in computer science education.
- **Dedicated CS Position:** The Michigan Department of Education has a Computer Science Consultant.
- **Making CS Count:** In Michigan, any department-approved computer science course can count as the fourth mathematics credit for graduation or replace the Algebra II requirement.

## Minnesota

- **Funding:** Although Minnesota does not provide dedicated state funding, MN was awarded a federal grant under the Jacob K. Javits Gifted and Talented Students Education Program to develop a screening process to identify students gifted in computer science, particularly from limited English or marginalized racial and ethnic groups. Schools that participate receive ongoing professional development, and all students receive computer science instruction.

- **Dedicated CS Position:** The Minnesota Department of Education has a STEM and Computer Science Integration Specialist.
- **Making CS Count:** In Minnesota, computer science can count as a mathematics credit for graduation if the course meets state academic standards in mathematics.

## Missouri

- **K-12 CS Standards:** Missouri adopted K–12 computer science standards in 2019. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 2 (FY 2020 and 2021) allocated \$450K annually to the Computer Science Education fund created by HB 3 (2018 special session). Grant awardees must describe how they will reach and support students from marginalized racial and ethnic groups underrepresented in computer science.
- **K-12 CS Certification:** In Missouri, teachers can obtain a 9–12 certification through academic coursework or by passing the state content exam. Teachers can be authorized to teach computer science after completion of department-approved professional development. State funding for computer science can be used to support credentialing for teachers.
- **Making CS Count:** In Missouri, any computer science course that aligns to the standards and has an appropriately qualified teacher can count as a mathematics, science, or practical arts credit for graduation.

## Mississippi

- **State Plan:** Mississippi HB 633 (2021) required the development of a strategic plan for statewide computer science education initiatives by January 1, 2022.
- **K-12 CS Standards:** Mississippi adopted K–12 computer science standards based on the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 1700 (FY 2021) allocated \$300K for computer science professional development. HB 1643 (FY 2020) allocated \$300K to develop computer science courses and professional development.
- **K-12 CS Certification:** In Mississippi, teachers with existing licensure can obtain an AP Computer Science Principles Endorsement by completing an approved AP training. Teachers can also obtain a K–8 or 7–12 add-on endorsement by completing coursework or approved professional development for specific courses.
- **Requiring All Secondary Schools to Offer CS:** HB 633 (2021) required all schools (elementary, middle, and high) to offer instruction in computer science by the 2024–2025 school year. The state set incremental requirements for each year, requiring that all middle schools offer instruction in foundations of computer science and half of all elementary schools in each school district offer at least one hour of computer science instruction per week by the 2022–2023 school year. Half of all high schools in each school district must offer a course in computer science and all elementary schools must offer at least one hour of computer science instruction per week by the 2023–2024 school year. Further, all charter schools that serve middle or high school students must offer a course in computer science and all charter schools that serve elementary school students must offer instruction in computer science by the 2022–2023 school year.

- **Making CS Count:** Beginning with incoming freshmen of 2018–2019, all Mississippi students must earn one credit in technology or computer science. Multiple computer science courses may satisfy the graduation credit.
- **Higher Education Admission:** All students applying to state institutions of higher learning in Mississippi for entrance in Fall 2022 must have earned one credit in computer science or technology, which aligns with the high school graduation policy.

## Montana

- **K-12 CS Standards:** Montana adopted K–12 computer science standards in November 2020. Standards within each grade band address many concepts of equity, such as bias, accessible technology, and inclusivity.
- **K-12 CS Certification:** 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 Incentives:** The Montana Office of Public Instruction has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Making CS Count:** 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.

## North Carolina

- **State Plan:** The North Carolina Department of Public Instruction developed—and presented to the legislature—a state plan for expanding computer science in 2018. The plan includes strategies to engage students from marginalized racial and ethnic groups underrepresented in computer science, female students, and low-income students.
- **K-12 CS Standards:** North Carolina adopted K–12 computer science standards in August 2020, as required by HB 155 (2017). Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** SB 99 (FY 2019, continued in FY 2020) allocated \$500K annually for implementation of the Computer Science Education Plan, which focuses on increasing participation for underrepresented student groups, including female students, low-income students, and students from marginalized racial and ethnic groups. Additionally, SB 99 (FY 2019) and SB 257 (FY 2018) allocated \$400K annually for the Coding and Mobile Application Grant Program, which could be used for teacher professional development in computer science.
- **K-12 CS Certification:** In North Carolina, teachers with existing CTE licensure can obtain a 9–12 CTE computer programming endorsement through academic coursework.
- **Dedicated CS Position:** The North Carolina Department of Public Instruction has a Director of Computer Science and Technology.
- **Making CS Count:** In North Carolina, computer science can count as the fourth mathematics credit for graduation in the Future-Ready Core track.

## North Dakota

- **K-12 CS Standards:** North Dakota adopted K–12 computer science and cybersecurity standards in 2019, becoming the first state to create K–12 cybersecurity standards.
- **K-12 CS Certification:** In North Dakota, teachers with existing licensure can obtain a grade level corresponding credential through academic coursework. Teachers are eligible to teach specific computer science courses for five years after earning a Level I (200 hours), Level II (40 hours), or Level III (15 hours) Computer Science and Cybersecurity Credential (effective April 1, 2020). Teachers can renew the credential by completing 30 hours of academic work during the five year period.
- **Making CS Count:** In North Dakota, AP Computer Science A or Mathematics for Computer Science/Information Technology can count as a mathematics credit for graduation.

## Nebraska

- **State Plan:** The Nebraska Department of Education is in the process of developing a state plan for K–12 computer science.
- **Making CS Count:** Nebraska passed a permissive and encouraging policy to allow computer science to count towards CTE in the 80 core curriculum hours required for graduation, but it is a district decision.

## New Hampshire

- **State Plan:** New Hampshire developed a plan for expanding computer science in 2018.
- **K-12 CS Standards:** New Hampshire adopted K–12 computer science standards based on the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **K-12 CS Certification:** In New Hampshire, teachers with or without existing licensure can obtain certification by passing a national exam, holding a computer science teaching assignment prior to June 2019, or submitting evidence of skills, knowledge, and competencies in computer science content. Evidence could include coursework, professional experience, letters of recommendation, professional development, or other artifacts.
- **Preservice Incentives:** The New Hampshire Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The New Hampshire Department of Education has a STEM Integration and Computer Science Administrator.
- **Requiring All Secondary Schools to Offer CS:** HB 1674 (2018) required all schools to create and implement computer science programs with a target goal of 2020 for full implementation.
- **Making CS Count:** New Hampshire passed a permissive and encouraging policy to allow computer science to count as a mathematics or technology credit for graduation, but it is a district decision.

## New Jersey

- **State Plan:** The New Jersey Department of Education developed a state plan for computer science education implementation in 2019. The plan includes a section on equity and promotes equitable access in the mission and vision statements.
- **K-12 CS Standards:** New Jersey adopted revised computer science and design thinking standards in June 2020. The standards' vision statement focuses on equitable access for all students and fostering their ability to participate in an inclusive and diverse computing culture that appreciates and incorporates perspectives from people of different genders, ethnicities, and abilities. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** A4720 (FY 2021) included \$800K for the K–12 Computer Science Education Initiative. The Secondary School Computer Science Education Initiative (PL 2018, Chapter 53) allocated \$2M for FY 2019. SB 2500 renewed the \$2M appropriation for FY 2020, but was later not included in the revised FY 2020 budget by NJ A3 (20R).
- **K-12 CS Certification:** In New Jersey, teachers with existing licensure can obtain a 9–12 CTE endorsement with a combination of previous teaching experience and academic coursework.
- **Dedicated CS Position:** The New Jersey Department of Education is currently in the process of hiring a Computer Science Coordinator.
- **Requiring All Secondary Schools to Offer CS:** A2873 (2018) required all high schools to offer a course in computer science by the 2018–2019 school year.
- **Making CS Count:** In New Jersey, computer science can count as a mathematics credit for graduation.

## New Mexico

- **State Plan:** New Mexico is in the process of developing a plan for K–12 computer science that includes goals, strategies, and timelines.
- **K-12 CS Standards:** New Mexico 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:** HB 548 (FY 2020) allocated \$200K annually to develop and implement teacher professional development courses. HB1 (first special session, FY 2021) amended the FY 2021 budget to allocate \$300K for K–8 computer science, including \$166K from recurring funding and \$133.9K from the STEAM initiative. The application guidance includes professional development activities that are culturally and linguistically responsive, and awards prioritized high-need districts.
- **K-12 CS Certification:** HB 188 (2021) required the Public Education Department to create a license endorsement in secondary computer science by December 31, 2021.
- **Dedicated CS Position:** The New Mexico Public Education Department is in the process of hiring a Computer Science Specialist.
- **Making CS Count:** In New Mexico, computer science can count as a mathematics or science credit for graduation, provided that a student has demonstrated competence in mathematics or science.

## Nevada

- **State Plan:** The Nevada Department of Education developed the Computer Science Strategic Plan in 2018. The plan includes a section dedicated to diversity and strategies to



build toward more equitable outcomes.

- **K-12 CS Standards:** Nevada adopted K–12 computer science standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** SB 313 (FY 2020 and 2021) allocated \$700K and \$933K, and SB 200 (FY 2018 and 2019) allocated \$1M and \$1.4M to expand computer science education.
- **K-12 CS Certification:** In Nevada, teachers with existing licensure can obtain a secondary endorsement in advanced computer science through academic coursework or passing the Praxis CS exam. Teachers can also obtain a secondary or middle school/junior high school endorsement in computer technology-based applications and computational thinking through academic coursework. Funding is available to offset the cost of certification.
- **Preservice Incentives:** SB 313 (2019) required training all preservice teachers in computer science and computer literacy. The bill also allowed the Nevada Board of Regents to apply for a grant from the computer science education fund to develop curriculum and standards for preservice computer science educators.
- **Dedicated CS Position:** The Nevada Department of Education has a Computer Science Education Programs Professional.
- **Requiring All Secondary Schools to Offer CS:** SB 200 (2018) required all high schools to make a computer science course available to all students by July 1, 2022, and required all students to receive instruction in computer education before 6th grade. Schools must make efforts to increase enrollment of female students, students with disabilities, and students from underrepresented racial and ethnic groups. The state publishes a biennial report which includes enrollment demographics on gender, race, and students with disabilities.
- **Making CS Count:** In Nevada, all students must earn one half-credit in computer education and technology in a course with half of the instructional time dedicated to computer science and computational thinking. Allowable courses include AP, CTE, or courses offered by a community college or university. A student who takes a computer education and technology course in middle school is not required to fulfill the half-credit in high school.
- **Higher Education Admission:** A computer science course can count as a mathematics or science credit required for admission at institutions of higher education, which aligns with Nevada's high school graduation policy.

## New York

- **K-12 CS Standards:** The New York State Board of Regents approved the K–12 Learning Standards for Computer Science and Digital Literacy in December 2020. The introduction to the standards describes how to address digital equity, English language learners, and students with disabilities, and standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** A 9503/S 7503 (FY 2021), A 2003/S 1503 (FY 2020), and S 7504/A 9504 (FY 2019) allocated \$6M annually (for an eventual total of \$30M) to expand computer science education via the Smart Start program. The grantees should incorporate strategies for increasing participation in computer science by traditionally underrepresented groups, such as female students, students with differing abilities, English language learners/Multilingual learners, and/or Black/African American, Hispanic/Latino/Latina/Latinx, or Native American/Alaskan students.
- **K-12 CS Certification:** In New York, teachers with or without existing licensure can obtain a 7–12 certification by completing one of the following: approved state teacher preparation

program pathway, academic coursework, or industry experience and pedagogical coursework. Any licensed teacher who teaches computer science before September 2022 will be eligible to continue teaching computer science in the same district for ten years.

- **Preservice Incentives:** The New York State Education Department has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Making CS Count:** New York passed a permissive and encouraging policy to allow computer science to count as either a mathematics or science credit for graduation, but it is a district decision.

## Ohio

- **K-12 CS Standards:** Ohio adopted K–12 computer science standards and a model curriculum in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 166 (FY 2020) appropriated \$1.5M for teachers to become credentialed in computer science. Awards prioritized educators assigned to schools with greater than 50% of students classified as economically disadvantaged.
- **K-12 CS Certification:** In Ohio, teachers with existing licensure can obtain a K–12 supplemental teaching license through passing the state content exam; teachers can also earn an initial license in computer science. Temporary revisions to teaching requirements allow licensed 7–12 teachers who completed approved professional development to teach computer science until 2021. The state provided dedicated funding to offset the cost of computer science certification
- **Preservice Incentives:** The Ohio Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Ohio Department of Education has a Computer Science Education Program Specialist.
- **Making CS Count:** In Ohio, computer science course that addresses high school mathematics standards and focuses on algorithms for problem-solving can count as a mathematics, advanced mathematics, or advanced science credit for graduation. One credit of advanced computer science can also satisfy one unit of algebra 2/math 3 or equivalent or one unit of advanced science (excluding biology or life sciences), and a coding course can satisfy foreign (world) language credit in schools that require it for graduation.

## Oklahoma

- **State Plan:** CSforOK developed a strategic plan for expanding computer science education in 2020. The plan includes a section on equity and will monitor outcomes including increasing participation by female students, Black students, and Hispanic/Latinx students.
- **K-12 CS Standards:** Oklahoma adopted K–12 computer science standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** Although SB 593 (2019) authorized the Oklahoma State Department of Education to create a grant program for computer science professional learning and recommended \$1M subject to authorization, no funds were appropriated for the program.

- **K-12 CS Certification:** In Oklahoma, teachers with existing licensure can obtain a 9–12 certification through passing the state content exam; teachers can also earn an initial license in computer science.
- **Dedicated CS Position:** The Oklahoma State Department of Education has a Director of Education Technology and Computer Science Education.
- **Requiring All Secondary Schools to Offer CS:** Oklahoma does not yet require that all secondary schools offer computer science. However, SB 593 (2019) directed the State Department of Education to develop a rubric for computer science programs in elementary, middle, and high schools to serve as a guide to schools for implementing quality computer science programs.
- **Making CS Count:** In Oklahoma, an approved computer science course can count as a mathematics or computer technology/world language credit in the Core Curriculum Standard Track.
- **Higher Education Admission:** Two computer science credits can count towards the additional required units in required content areas for admissions at institutions of higher education, which aligns with Oklahoma's high school graduation policy.

## Oregon

- **Making CS Count:** Oregon passed a permissive and encouraging policy to allow computer science to count as a fourth science elective for graduation, but it is a district decision.

## Pennsylvania

- **K-12 CS Standards:** Pennsylvania endorsed 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:** Pennsylvania budgets (Act 1A for FY 2019, FY 2020, and the FY 2021 interim budget) each dedicated \$20M annually to PAsmart, a program established to expand STEM and computer science education, including teacher professional development. As of August 2020, \$5.705M of the FY 2020 funding was distributed in targeted grants to 163 local education agencies which had the fewest computer science offerings and had not yet received a grant. The balance of funds, intended for "Advancing Grants" to deepen STEM ecosystem work at the local and regional level, remains on hold due to the COVID-19 response. PAsmart grants prioritize proposals that boost participation in computer science education for historically underserved and underrepresented populations.
- **K-12 CS Certification:** In Pennsylvania, teachers with existing licensure can obtain a 9–12 certification through passing the state content exam; teachers can also earn an initial license in computer science.
- **Preservice Incentives:** The Pennsylvania Department of Education developed specific program guidelines for state approval of professional educator programs in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Pennsylvania Department of Education has a Consultant to the Secretary of Education on STEM/Computer Science.
- **Making CS Count:** In Pennsylvania, any computer science course aligned with the computer science standards can count as a mathematics or science credit for graduation.

## Rhode Island

- **State Plan:** CS4RI (a partnership between the Governor’s office and the Rhode Island Department of Education) created a state plan for computer science education implementation. One of the goals of the plan is to broaden participation among populations that are underrepresented in computer science.
- **K-12 CS Standards:** Rhode Island adopted K–12 computer science standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity. Additionally, standards can be met without computing devices or with limited hardware access, making implementation possible for all schools.
- **Funding:** H 5151A (FY 2020), H 7200A (FY 2019), H 5175 (FY 2018), and H 7454 (FY 2017) allocated \$210K annually for computer science professional development. Grants focus on broadening participation, and priority is given to Title I-eligible schools. The Department received a \$2.5M federal grant to support the creation of high school computer science pathways that incorporate work-based learning.
- **K-12 CS Certification:** In Rhode Island, teachers with existing licensure can obtain an endorsement through academic coursework from an approved provider.
- **Dedicated CS Position:** The Rhode Island Department of Education has a core team advancing the goals of CS4RI, including the Digital Learning Specialist, CS4RI High School Grant Project Manager, and CS4RI Work-Based Learning Specialist.
- **Requiring All Secondary Schools to Offer CS:** Rhode Island does not yet require that all secondary schools offer computer science. However, the CS4RI initiative and the Governor’s office set a goal for all students to have access to computer science courses by the end of 2017.
- **Making CS Count:** In Rhode Island, computer science can count as a mathematics or science credit for graduation.

## South Carolina

- **K-12 CS Standards:** South Carolina adopted K–8 computer science and digital literacy standards in 2017 and high school standards in 2018. Standards address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** H 4000 (FY 2020) allocated \$500K to teacher professional development. H 3720 (FY 2018) allocated \$400K to the Department of Education to implement the Computer Science Task Force's recommendations.
- **K-12 CS Certification:** In South Carolina, teachers with or without existing licensure can obtain 9–12 certification by completing an approved preparation program and passing the state content exam.
- **Dedicated CS Position:** The South Carolina Department of Education is in the process of hiring a Computer Science Specialist.
- **Requiring All Secondary Schools to Offer CS:** The South Carolina Department of Education revised the list of courses that satisfy the computer science graduation requirement, effectively requiring all high schools to offer at least one computer science course by the 2018–2019 school year (with waivers available until the 2020–2021 school year) and requiring all students to take at least one credit of computer science to graduate.
- **Making CS Count:** In South Carolina, all students must take one credit of computer science to graduate. Multiple computer science courses are approved to meet the credit.
- **Higher Education Admission:** In South Carolina, computer science can count as the fourth mathematics credit required for admission at institutions of higher education, which aligns

with the high school graduation policy. Further, students are strongly encouraged to take computer science as a high school elective.

## South Dakota

- **K-12 CS Certification:** In South Dakota, teachers with existing licensure can obtain a K–6 or 7–12 endorsement through academic coursework or passing the Praxis CS exam.
- **Making CS Count:** In South Dakota, a state-approved advanced computer science course can count as a science credit for students who earn a regular diploma.

## Tennessee

- **State Plan:** The Tennessee Department of Education presented the Tennessee Computer Science State Education Plan to the legislature in April 2020 and posted a timeline for each recommendation on the department website.
- **K-12 CS Standards:** Tennessee published a comprehensive set of K–12 computer science standards in July 2020.
- **Funding:** PC 651 (FY 2021) includes \$518K for computer science education, including professional development, within the Governor's Future Workforce Initiative.
- **K-12 CS Certification:** In Tennessee, teachers with existing licensure can obtain the Computer Science Employment Standard endorsement after completing approved professional development. An initial license in computer science requires completing academic coursework and passing the Praxis CS exam.
- **Preservice Incentives:** The Tennessee Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Making CS Count:** In Tennessee, computer science can count as a mathematics credit for graduation.

## Texas

- **State Plan:** Texas is in the process of creating a plan for K–12 computer science that includes goals, strategies, and timelines, as required by HB 2984 (2019).
- **K-12 CS Standards:** The Texas Essential Knowledge and Skills (TEKS) at the high school level contain computer science standards, and HB 2984 (2019) directed the State Board to review and modify the K–8 TEKS for Technology Applications to include coding and computational thinking by December 31, 2020.
- **Funding:** Although Texas does not yet provide dedicated state funding for computer science professional development, HB 3 and HB 963 (2019) consolidated all computer science (or technology applications) courses into CTE and allowed schools to receive weighted funding for students enrolled in those courses in grades 7–12.
- **K-12 CS Certification:** In Texas, teachers with or without existing licensure can obtain an 8–12 certification by completing a state-approved teacher preparation program and passing certification exams.
- **Preservice Incentives:** The Texas Education Agency has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Requiring All Secondary Schools to Offer CS:** The Texas State Board of Education added computer science courses to the list of required offerings at high schools (19 TAC § 74.3) in

2014.

- **Making CS Count:** In Texas, AP Computer Science A, IB Computer Science Higher Level, or discrete math can count as a required mathematics course for graduation. Computer science can also count as an advanced science credit, and multiple course options can satisfy the foreign language requirement.
- **Higher Education Admission:** Computer science can count as the fourth mathematics credit required for admission at institutions of higher education in Texas.

## Utah

- **State Plan:** Utah adopted the Utah Computer Science Education Master Plan in 2019. The plan includes a section on diversity with goals and recommendations to expand access to rural, low-income, and female students. The Community Foundation of Utah and the Silicon Slopes community created the Silicon Slopes Computer Science Fund to invest in computer science education initiatives outlined in the state plan.
- **K-12 CS Standards:** Utah adopted K–5 computer science standards in September 2019 and 6–12 standards in May 2020. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 2 (FY 2022) allocated \$5M for Computer Science Initiatives. HB 227 (FY 2020) allocated \$3.15M for the Computer Science for Utah Grant Program. Applicants must describe how they will increase the number of female and traditionally underserved students, ensure content is accessible to all students, and strategies for increasing diversity in K–12 computer science. SB 190 (FY 2018 and 2019) allocated \$1.2M annually for the Computing Partnerships Grants program. SB 93 (FY 2017) allocated \$400K for computer science.
- **K-12 CS Certification:** In Utah, teachers with existing secondary or CTE licensure can obtain up to six course-specific 6–12 endorsements. Each endorsement requires a combination of experience or coursework, exams, professional development, and more.
- **Preservice Incentives:** The Utah State Board of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Utah State Board of Education has a Computer Science State Specialist.
- **Making CS Count:** In Utah, a computer programming course can replace the third mathematics credit (Secondary III) by request from a parent, or it can count as a science credit. AP Computer Science, Computer Science Principles, and Computer Programming II are approved to count as a science graduation credit.

## Virginia

- **K-12 CS Standards:** Virginia added mandatory K–12 computer science standards to the state Standards of Learning in 2017, effectively requiring all K–12 schools to offer instruction in computer science. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 30 (FY 2021 and 2022) allocated \$1.35M annually to support computer science education and implementation of the standards, including professional development. HB 30 (FY 2021 and 2022), HB 1700 (FY 2019 and 2020), and HB 1500 (FY 2017 and 2018) also allocated \$550K annually for K–12 computer science professional development with CodeVA.

- **K-12 CS Certification:** In Virginia, teachers with existing licensure can obtain an endorsement through academic coursework or passing the Praxis CS exam. An initial license in computer science requires completing a state-approved program or academic coursework. The Department of Education convened a workgroup on micro-credentials for certification in subjects including computer science and is now developing recommendations as authorized by HB 836 (2020).
- **Preservice Incentives:** The Virginia Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Virginia Department of Education has a Computer Science Coordinator.
- **Requiring All Secondary Schools to Offer CS:** HB 831 (2016) added computer science into the Virginia K–12 Standards of Learning, which all schools must implement.
- **Making CS Count:** In Virginia, a variety of computer science courses can count as a credit for graduation in lab science, career and technical education, or mathematics at or above the level of Algebra II. Students in English as a Second Language programs can add a computer science elective for graduation credit if they test out of their foreign language requirement.

## Vermont

- **K-12 CS Certification:** In Vermont, teachers with existing licensure can obtain a 7–12 endorsement by demonstrating knowledge standards, performance standards, and completing academic coursework.
- **Preservice Incentives:** The Vermont Agency of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Making CS Count:** Vermont passed a permissive and encouraging policy to allow computer science to count towards a core graduation requirement, but it is a district decision.

## Washington

- **K-12 CS Standards:** Washington adopted updated K–12 computer science standards based on the CSTA standards in 2018. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **Funding:** HB 1109 (FY 2020 and 2021), SB 5883 (FY 2018 and 2019), and SB 6052 (FY 2016 and 2017) appropriated \$1M annually for the computer science education grant program with a one-to-one private match requirement. HB 1109 exempted the match requirement for districts with greater than 50% of students eligible for free and reduced-price meals. Grants are intended to support innovative ways to engage students from historically underrepresented groups, including female students, low-income students, and students in underrepresented racial and ethnic groups.
- **K-12 CS Certification:** In Washington, teachers with existing licensure can obtain a K–12 endorsement through passing the state content exam. State funding for computer science can support credentialing for teachers.
- **Preservice Incentives:** The Washington Office of Superintendent of Public Instruction has approved teacher preparation programs leading to certification in computer science. The Washington State Opportunity Scholarship also provided funding for Central Washington

University and Western Washington University to develop a computer science endorsement program.

- **Dedicated CS Position:** The Washington Office of the Superintendent of Public Instruction has a Computer Science Program Specialist.
- **Requiring All Secondary Schools to Offer CS:** SB 5088 (2019) required that each school district that operates a high school must provide access to an elective computer science course by the 2022–2023 school year. HB 1577 (2019) required each school district to report the number of computer science course offerings and demographics of the students enrolled in the courses, starting in June 2020.
- **Making CS Count:** In Washington, computer science can count as the third required mathematics credit or a science credit for graduation.
- **Higher Education Admission:** AP Computer Science A can count as a mathematics credit required for admission at institutions of higher education in Washington.

## Wisconsin

- **K-12 CS Standards:** Wisconsin adopted K–12 computer science standards in 2017. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **K-12 CS Certification:** In Wisconsin, teachers with existing licensure can obtain a 4–12 supplementary license by passing the Praxis CS exam. An initial license in computer science requires completing a state-approved preparation program.
- **Preservice Incentives:** The Wisconsin Department of Public Instruction has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Requiring All Secondary Schools to Offer CS:** Although Wisconsin does not yet require that all secondary schools offer computer science, state statute 118.01(2)(a)5 requires each school board to provide an instructional program designed to give students knowledge in computer science, including problem-solving, computer applications, and the social impact of computers.
- **Making CS Count:** In Wisconsin, computer science courses that meet the department's definition of computer science can count as a mathematics credit for graduation.

## West Virginia

- **State Plan:** The West Virginia Department of Education approved a state plan for expanding Computer Science in October 2019.
- **K-12 CS Standards:** West Virginia adopted K–12 computer science standards in 2019.
- **Funding:** With the publication of the West Virginia Computer Science Plan in October 2019, the state also allocated yearly funding for professional development for teachers as recommended by SB 267 (2019).
- **K-12 CS Certification:** In West Virginia, teachers with existing licensure can obtain course-specific authorizations for Introduction to Computer Science, Computer Science Discoveries, and/or Computer Science Fundamentals by completing specified professional development.
- **Dedicated CS Position:** The West Virginia Department of Education has a Computer Science Supervisor.
- **Requiring All Secondary Schools to Offer CS:** SB 267/HB 2415 (2019) required the West Virginia State Board of Education to adopt a policy detailing the appropriate level of



computer science instruction that shall be available to students at each programmatic level prior to the 2020–2021 school year. Policy 2510, revised in 2015, required all high schools to offer a computer science course.

- **Making CS Count:** In West Virginia, an AP computer science course can count as the fourth mathematics credit or a science credit for graduation.

## Wyoming

- **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 CS 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 2018–2020.
- **K-12 CS 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 receive authorization to teach some computer science courses through a state and district-approved professional development plan and passing the Praxis CS exam.
- **Dedicated CS Position:** The Wyoming Department of Education has a Math and Computer Science Consultant.
- **Requiring All Secondary Schools to Offer CS:** SF 29 (2018) required all schools to include computer science and computational thinking by the 2022–2023 school year.
- **Making CS Count:** In Wyoming, computer science courses aligned with the standards can count as a math or science credit for graduation.
- **Higher Education Admission:** In Wyoming, computer science can count as one year of science, fourth year mathematics, or career credits required for admission at institutions of higher education, which aligns with the high school graduation policy.

See a comparison chart of the 9 policies by state at [www.bit.ly/9policies](http://www.bit.ly/9policies)