



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). 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.
- **Dedicated CS Position:** The Alaska Department of Education & Early Development is currently in the process of hiring a Statewide Coding and Computer Science Coordinator.
- **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 in 2019 and created a corresponding timeline in 2021. The council was charged with building equity in computer science education for groups underrepresented in computing. The plan includes specific strategies to advance educational equity in computer science.
- **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 135 (FY 2023) appropriated \$5.657M for CS education: \$3M for CS4AL, \$2.375M for the Technology in Motion Program, and \$300K for CS educator training. SB 189 (FY 2022) and HB 187 (FY 2021) appropriated \$3.771M and SB 199 (FY 2020) appropriated \$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 and regularly updates 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 Task Force released a new set of recommendations.
- **K-12 CS Standards:** Arkansas adopted revised K–12 computer science standards including multiple high school pathways in 2020. All students learn the K–8 standards and take a coding block in 7th or 8th grade.
- **Funding:** Act 217 (FY 2023) and Act 1006 (FY 2022) allocated \$3.5M for the Computer Science Initiative; 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 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. 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, and each preservice program will incorporate computer science as their educator competencies come up for revision. 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, Lead Statewide Computer Science Specialist, Computer Science Program Policy Advisor, and a Computer Science Program Coordinator. There are also nine statewide computer science specialists. In 2021, the department created a new position, the Director of STEM and Computer Science Continuum, to focus on postsecondary, including college and careers.
- **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. The Middle School Introduction to Coding standards are required to be taught to all students in at least one of grades 5, 6, 7, or 8.
- **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, science, or career focus 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:** HB 2862 (FY 2023), SB 1823 (FY 2022), 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.
- **Dedicated CS Position:** The Arizona Department of Education has a Computer Science and Educational Technology Specialist.
- **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:** AB 181 (FY 2023) allocated \$15M for competitive grants for professional learning to K-12 teachers to provide high-quality instruction in computer science. AB 128 (FY 2022) allocated \$5M to establish the Educator Workforce Investment Grant to provide professional development in computer science for K-12 teachers and AB 130 (FY 2022) allocated an additional \$15M for the Computer Science Supplementary Authorization Incentive Grant Program. SB 75 (FY 2019) appropriated \$22.1M to the Educator Workforce Investment Grant Program, including \$5M to support professional learning for computer science teachers, though 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. The state provided dedicated funding in FY 2022 to offset the cost of computer science certification.
- **Dedicated CS Position:** The California Department of Education has a Computer Science Coordinator.
- **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 22-1329, SB 21-205 (FY 2022), HB 20-1360 (FY 2021), and SB 19-207 (FY 2020) appropriated \$801,681, \$801,658, \$801,675, 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 passed a permissive and encouraging policy for local boards of education to allow computer science courses aligned to the state computer science standards to count towards the nine STEM credits required for graduation (beginning with the class of 2023).

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.
- **Dedicated CS Position:** Although the Delaware Department of Education does not have a position dedicated to computer science education, the STEM Education Associate oversees computer science education.
- **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 2023), SB 2500 (FY 2022), 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, and an alignment document with the high school CTE standards is in progress.
- **Funding:** HB 911 (FY 2023) and SB 81 (FY 2022) appropriated \$1M, HB 793 (FY 2021)/HB 80 (in 2021 for the current fiscal year) appropriated \$717,275, and HB 31 (FY 2020) appropriated \$750K for the grant program established by SB 108 (FY 2019). HB 911 (FY 2023) also appropriated \$600K to provide professional development and student support for a computer science pilot program in rural Georgia. SB 81 (FY 2022) appropriated \$250K for a pilot program for AP CS Principles. 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 schools must offer instruction in exploratory computer science by the 2022–2023 school year, and it is recommended for all elementary schools.
- **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.
- **Higher Education Admission:** Computer science can count as a science or foreign language credit required for admission at institutions of higher education, which aligns with Georgia's high school graduation policy.

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:** Although Hawaii does not currently provide dedicated state 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, and Act 158 (2021) required all middle, elementary, and charter schools to offer computer science by the

2024–2025 school year. Beginning with the 2022–2023 school year, at least one public elementary school and one public middle/intermediate school in each Complex Area shall offer computer science courses or content. The state set incremental requirements for each year to phase in the requirements. Act 158 also required the department to submit an annual report on the computer science offerings and enrollment, disaggregated by student demographics.

- **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:** The Iowa Department of Education developed a state plan for expanding access to computer science in 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 2575 (FY 2023), HF 868 (FY 2022), 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 Consultant.
- **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:** H0743 (FY 2023) and H0331 (FY 2021) allocated \$500K (which was renewed for FY 2022), 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 completing a state-approved program and passing the Praxis CS exam. An initial license in computer science also 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 STEM and 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:** Illinois adopted K–12 computer science standards based on the CSTA standards in 2022. Standards within each grade band address concepts of equity, such as bias, accessible technology, and inclusivity.
- **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.
- **Dedicated CS Position:** The Illinois State Board of Education has a Computer Science Principal Consultant.
- **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 2023, 2022, 2021, and 2020) 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. The educator standards for the new elementary STEM license addition include computer science.
- **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–6 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 or science 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.
- **Funding:** HB 2567 (FY 2023) allocated \$1M to provide grants to high-quality professional learning providers to develop and implement computer science teacher professional development programs.
- **K-12 CS Certification:** The Kansas State Department of Education has developed proposed licensure standards for preK-12 computer science educators.

- **Preservice Incentives:** HB 2466 (2022) established the computer science educator program to promote the advancement of computer science licensed and preservice teacher preparation in Kansas. The state board of regents may award scholarships up to \$1,000 to licensed and preservice teachers who are enrolled in a course of instruction offered by a postsecondary educational institution for additional postsecondary credit or leading to licensure as a teacher, and have completed one course in computer science. Scholarships prioritize applicants who are from underrepresented socioeconomic demographic groups; or agree to teach computer science in rural schools and schools with higher percentages of students from underrepresented socioeconomic demographic groups.
- **Dedicated CS Position:** The Kansas Department of Education has a Computer Science Education Program Consultant.
- **Requiring All Secondary Schools to Offer CS:** HB 2466 (2022) required all secondary schools to offer at least one computer science course beginning in the 2023-24 school year or requires a school district to submit a plan to the state board of education describing how the district intends to offer a computer science course and the school year that course will first be offered.
- **Making CS Count:** In Kansas, locally-approved computer science courses can count as a credit for graduation, but it is a district decision.

Kentucky

- **State Plan:** The Kentucky Department of Education developed a state plan for K–12 computer science in 2022 as required by SB 193 (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

- **State Plan:** SB 190(2022) establishes the Computer Science Education Advisory Commission to provide recommendations to the State Board of Elementary and Secondary Education through the state Department of Education for the development and implementation of a state action plan for the delivery of education in computer science in all public schools. The organizational meeting of the advisory committee will be called by August 15, 2022.

- **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:** 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. Maryland is currently developing standards' annotations, which assist teachers as they implement lessons aligned to the standards.
- **Funding:** HB 281 (FY 2020 and 2021) allocated \$1M annually, an additional \$1M was allocated in HB 588 (FY 2022), 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. MCCE provides funding for public or private teacher preparation institutions to establish computer science education programs or integrated computer science into existing 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. Each local school system has also designated a central office administrator who is the point of contact for computer science.
- **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, all middle schools are required to teach computational thinking, and all school boards are asked to incorporate computer science in each elementary school and to increase the enrollment of female students, students with disabilities, and students of underrepresented ethnic or racial groups. The Maryland Computing Education dashboards provide, among other data points, school system and high school data.
- **Making CS Count:** In Maryland, Foundations of Computer Science, Computer Science Principles, AP Computer Science A, and other computer science courses can fulfill the credit requirement in Computer Science, Engineering, or Technology Education. AP Computer Science A can also 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.

- **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.
- **Funding:** LD 127 (FY 2022 and 2023) allocated \$50K annually to establish a pilot program to provide professional development grants for computer science instruction. The grants prioritize applicants that serve socioeconomically disadvantaged school districts or prioritize student populations traditionally underrepresented in computer science.
- **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.
- **Funding:** The MiSTEM council uses \$450K in funds allocated from SB 845 (FY 2023), HB 4411 (FY 2022), SB 927 (FY 2021) to offer professional development for educators in computer science, as approved by the MiSTEM council.
- **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

- **State Plan:** Missouri SB 718 establishes the "Computer Science Education Task Force" to develop a strategic plan for expanding a statewide computer science education program.

- **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 3002 (FY 2023) and HB 2 (FY 2020, 2021, 2022) 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.
- **Dedicated CS Position:** SB 718 (2022) directs the Missouri Department of Elementary and Secondary Education to appoint a computer science advisor to implement the bill's requirement for all elementary, middle, and high schools to offer computer science.
- **Requiring All Secondary Schools to Offer CS:** SB 718 (2022) required each public high school and charter school to offer at least one computer science course in an in-person setting or as a virtual or distance course option by the 2023-34 school year.
- **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.
- **Higher Education Admission:** Beginning July 1, 2023, computer science courses counted toward state graduation requirements shall be equivalent to one science or practical arts credit for the purpose of satisfying admission requirements at any public institution of higher education in the state.

Mississippi

- **State Plan:** The Mississippi Department of Education developed a 10-year strategic plan for statewide computer science education. The plan addresses efforts to increase enrollment in computer science courses for female students and students from marginalized racial and ethnic groups underrepresented in computer science.
- **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 1600 (FY 2023) and HB 1837 (FY 2022) allocated \$1M to develop computer science courses and professional development. 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.
- **Funding:** HB 644 (FY 2022-23) allocated \$32K to support the development of computer programming courses at high schools on Indian reservations across Montana and support professional development for high school teachers.
- **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:** SL 2021-180 (FY 2022 and FY 2023) allocated \$3.6M (FY 2022) and \$1.1M (FY 2023) to support regional computer science consultants and to provide training for K-12 computer science teachers. SL 2018-5 (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, SL 2017-57 allocated \$400K for FY 2018 and \$800K for the following years (FY 2019, FY 2020) 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

- **State Plan:** The North Dakota Department of Public Instruction developed a plan for K–12 computer science education.
- **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.
- **K-12 CS Standards:** The Nebraska Senate passed a bill requiring the Board of Education to adopt measurable academic content standards for computer science and technology education under the mathematics, science, or career and technical education standards.
- **Requiring All Secondary Schools to Offer CS:** LB 1112 (2022) required each school district to include computer science and technology education in the instructional program of its elementary and middle schools, as appropriate, and beginning in school year 2026-27, require each student attending a public school to complete at least one five credit high school course/one-semester high school course in computer science and technology prior to graduation.
- **Making CS Count:** In Nebraska, all students must take a five credit course or a one semester course of computer science to graduate (LB 1112, 2022).

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:** SB 2023 (FY 2023) and SB 2022 (FY 2022) allocated \$2M and 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 has 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. S990 (2020) required the department to report on computer science course enrollment disaggregated by gender, race and ethnicity, special education status, English language learner status, eligibility for the free and reduced price lunch program, and grade level.
- **Making CS Count:** In New Jersey, computer science can count as a mathematics credit for graduation.

New Mexico

- **State Plan:** The New Mexico Public Education Department developed a state strategic plan for K–12 computer science in 2021.
- **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:** The NM Public Education Department used funds from HB 2 (FY 2022) to offer \$500K in competitive grants for K–8 computer science, including teacher professional development. 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. HB 548 (FY 2020) allocated \$200K annually to develop and implement teacher professional development courses. The application guidance includes professional development activities that are culturally and linguistically responsive, and awards prioritized high-need districts.
- **K-12 CS Certification:** In New Mexico, teachers with existing licensure in secondary education can obtain a computer science endorsement through one of six pathways: completing academic coursework, passing a licensure exam, work experience, professional development, industry certification, or subject-specific teaching experience.
- **Dedicated CS Position:** The New Mexico Public Education Department has a K–8 Computer Science Specialist and an Education Administrator in the Office of College and Career Readiness focused on high school computer science.
- **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 K–12 Introductory Computer Science endorsement 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 for graduation with at least half of the instructional time dedicated to computer science and computational thinking. A student may take this half-credit in middle school but the course must include the high school standards in order to satisfy this graduation requirement. Students may count a full-year credit computer science course towards their fourth-year math or third-year science credit graduation requirement. Allowable courses include AP, CTE, or courses offered by a community college or university.
- **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 3003/S 2503 (FY 2022), 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, 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

- **State Plan:** The Ohio Department of Education and Department of Higher Education are in the process of developing a state plan for K–12 computer science.
- **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. These standards will be updated by September 2022, as required by HB 110 (2021).

- **Funding:** Although Ohio does not currently provide dedicated state 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 2023. The state provided dedicated funding in FY 2020–2021 to offset the cost of computer science certification.
- **Preservice Incentives:** The Ohio Department of Higher Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly. HB 110 (2021) required each educator preparation program and each educator licensure candidate to receive instruction in computer science and computational thinking.
- **Dedicated CS Position:** The Ohio Department of Education has a Computer Science Education Program Specialist.
- **Making CS Count:** In Ohio, a computer science course that addresses high school mathematics standards and focuses on algorithms for problem-solving can count as a mathematics credit for graduation. One credit of advanced computer science can also satisfy the requirement for 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.
- **Higher Education Admission:** An advanced computer science course can count towards the mathematics, science, or elective admission requirements, and a unit of computer coding can count towards foreign language requirements at state universities if the student applied the course towards their high school graduation requirements.

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/Latino/Latina 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.
- **Preservice Incentives:** Oklahoma has competencies for licensure and certification in computer science, but no universities currently meet them.
- **Dedicated CS Position:** The Oklahoma State Department of Education has a Director of Education Technology and Computer Science Education, and will soon hire a full-time Director of Computer Science Education.

- **Requiring All Secondary Schools to Offer CS:** SB 252 (2021) required all schools (elementary, middle, and high) to offer computer science by the 2024–2025 school year. Further, 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 Diploma Pathway.
- **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

- **State Plan:** The Oregon Governor sent a letter to the Oregon Department of Education and Higher Education Coordinating Commission to begin the development of a statewide implementation plan for computer science education.
- **Funding:** Although Oregon does not yet provide dedicated state funding towards professional development for computer science, the governor announced the use of \$5M in federal funds (Governor's Emergency Education Relief) to ensure students across Oregon have access to computer science by the 2027-28 school year.
- **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, the FY 2021 interim budget, and FY 2022) each dedicated \$20M annually to PAsmart, a program established to expand STEM and computer science education, including teacher professional development. 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.
- **Preservice Incentives:** The Rhode Island Department of Education has approved teacher preparation programs leading to the endorsement in computer science and lists those programs publicly.
- **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 4100 (FY 2022) allocated \$1.768M to teacher professional development, certification, and regional computer science specialists. H 4000 (FY 2020) allocated \$500K to teacher professional development; that funding continued in FY 2021 through a continuing resolution. 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. The state provided dedicated funding in FY 2022 to offset the cost of computer science certification.
- **Preservice Incentives:** There are program approval standards (CS teacher standards) but no universities currently meet them.
- **Dedicated CS Position:** The South Carolina Department of Education has 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:** Computer science can count as the fourth mathematics credit required for admission at institutions of higher education. 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:** HB 2153 (FY 2023-24) includes \$1,266,300 for computer science education, including professional development and the implementation of a graduation requirement in computer science. This funding will continue in future years. 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. In 2022, the legislature passed a bill requiring approval of a new endorsement in computer science.
- **Preservice Incentives:** The Tennessee Department of Education has approved teacher preparation programs leading to certification in computer science and lists these programs publicly.
- **Dedicated CS Position:** The Tennessee Department of Education has a Director of STEAM and Computer Science.
- **Requiring All Secondary Schools to Offer CS:** HB 2153 (2022) requires that by the 2024-2025 school year, high school students receive one full school year of computer science education to satisfy graduation requirements, middle school students receive one course in computer science education, and elementary school students receive grade-appropriate computer science education.
- **Making CS Count:** In Tennessee, all high school students must receive one full school year of computer science education to satisfy graduation requirements. Previously, computer science could count as a mathematics credit for graduation.

Texas

- **State Plan:** Although HB 2984 (2019) required the development of a state plan for computer science, Texas has not made progress towards a state plan.
- **K-12 CS Standards:** Texas adopted the Texas Essential Knowledge and Skills (TEKS) Fundamentals of Computer Science for K-8 in June 2022 and TEKS at the high school level contain computer science standards.
- **Funding:** SB 1 (FY 2022 and 2023) allocated \$2.585M to make an AP Computer Science Principles course available in every high school and 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:** SB 2 (FY 2023) allocated \$8M for Computer Science Initiatives. 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. All students must take a course in Digital Studies, and four of the six courses that can fulfill the requirement are computer science.

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.

- **Dedicated CS Position:** Although the Vermont Agency of Education does not have a position dedicated to computer science education, the Education Technology Coordinator oversees computer science education.
- **Making CS Count:** Vermont passed a permissive and encouraging policy to allow computer science to count towards a core graduation requirement at the district level.

Washington

- **State Plan:** The Washington State Office of Superintendent of Public Instruction adopted a plan for K–12 computer science education in 2022. The plan includes a section on diversity, equity, and inclusion.
- **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:** SB 5092 (FY 2022 and 2023), 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. Legislation was passed in 2021 to create two new specialty endorsements in computer science and allocated \$63,000 to start this process. 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. SB 5657 (2022) requires each school district operating an institutional education program for youth in state long-term juvenile institutions to provide an opportunity to access an elective computer science course.
- **Making CS Count:** In Washington, a computer science course that aligns to the state computer science learning standards can count as the third required mathematics credit or 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.
- **Dedicated CS Position:** The Wisconsin Department of Public Instruction is currently in the process of hiring a Computer Science and Digital Learning Innovation Consultant.
- **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 2018–2021.
- **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 teach out of field for up to two years and can earn the CS endorsement by passing the Praxis CS exam within those two years.
- **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 science credit for graduation.
- **Higher Education Admission:** Computer science can count as one year of science, fourth year mathematics (for state scholarship), 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