# SENATE COMMITTEE ON EDUCATION

Senator Sasha Renée Pérez, Chair 2025 - 2026 Regular

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**Urgency:** No **Fiscal:** Yes

Consultant: Therresa Austin

Subject: Pupil instruction: high schools: computer science courses: California

Computer Science Demonstration Project: reporting.

### **SUMMARY**

This bill establishes a voluntary California Computer Science Demonstration Project and a corresponding California Computer Science Demonstration Project Working Group (Working Group) for the purposes of expanding computer science course access to eligible public high schools and collect data on computer science course enrollment.

### **BACKGROUND**

### Existing law:

- 1) Establishes requirements for graduation from high school, including three courses in English, two courses in mathematics, two courses in science, three courses in social studies, one course in visual or performing arts or world languages or career technical education (CTE), two courses in physical education, and, commencing with the class of students graduating in the 2029-30 academic year, a one-semester course in ethnic studies. (Education Code (EC) § 51225.3)
- 2) Requires that, of the three courses in social studies, two must be year-long courses in United States history and geography, and in world history, culture, and geography, and that the remaining two are a one-semester course in American government and civics, and a one-semester course in economics. (EC § 51225.3)
- 3) Authorizes the governing board of a school district to require a student to complete additional coursework, beyond the courses required at the state level, in order to receive a diploma of graduation from high school. (EC § 51225.3)
- 4) Requires the Superintendent of Public Instruction (SPI) to convene a computer science strategic implementation advisory panel to develop recommendations for a Computer Science Strategic Implementation Plan (CSSIP), and requires the panel to submit recommendations for a strategic plan to the State Board of Education (SBE) by January 15, 2019.
- 5) Requires the plan to include, at a minimum, recommendations on all of the following:

- a) Broadening the pool of teachers to teach computer science;
- b) Defining computer science education principles that meet the needs of students in all grades; and
- c) Ensuring that all students have access to quality computer science courses.
- Requires the Instructional Quality Commission (IQC) to consider developing and recommending to the SBE, on or before July 31, 2019, computer science content standards for kindergarten and grades 1 to 12 pursuant to recommendations developed by a group of computer science experts. (EC § 60605.4)
- 7) States that if a school district requires more than two courses in mathematics for graduation from high school, the district may award a student up to one mathematics course credit for successfully completing a "category C" approved computer science course. (EC § 51225.35)
- 8) Requires the California State University (CSU), and requests the University of California (UC), to develop guidelines for high school computer science courses that may be approved for the purposes of recognition for admission. (EC § 66205.5)
- 9) Through regulation, authorizes holders of credentials in mathematics, business, and Industrial and Technology Education, as well as holders of supplementary authorizations in computer science, to teach computer science. (California Code of Regulations, Title 5, Section 80005)
- 10) Establishes the Computer Science Supplementary Authorization Incentive Grant Program for the purpose of providing one-time grants to local educational agencies (LEAs) to support the preparation of credentialed teachers to earn a supplementary authorization in computer science and provide instruction in computer science coursework. Authorizes LEAs to use grant funding to pay teachers' costs of coursework, books, fees, and tuition, as applicable. Requires applicants for the program to provide a 100% match of grant funding, which may be in the form of release time or substitute teacher costs. (AB 130 (Committee on Budget, Chapter 44, Statutes of 2021)

### **ANALYSIS**

### This bill:

- 1) Makes several findings and declarations related to computer science education.
- 2) States that it is the Legislature's intent to establish a pilot program to increase student access to computer science courses.

AB 887 (Berman) Page 3 of 11

3) Establishes the California Computer Science Demonstration Project as a pilot program for the following purposes:

- a) Increasing the number of public high schools offering a computer science course to increase student access to computer science education.
- b) Increasing the computer science course access of pupils eligible for free or reduced-price meals, as specified, and pupils that are underrepresented in the field of computer science.
- c) Reporting disaggregated data on the number of students who enroll in each new computer science course that results from the pilot program and submitting an interim report and a final report to the Legislature.
- 4) Establishes the California Computer Science Demonstration Project Working Group (Working Group) which shall include non-profit organizations and private industry stakeholders with relevant expertise and experience in computer science education.
- 5) Authorizes the California Computer Science Coordinator to engage with the Working Group, on the condition that any voluntary engagement aligns with the existing duties and responsibilities of the California Computer Science Coordinator and would result in no additional state costs.
- 6) Specified that the pilot program shall be administered by a funding entity or entities.
- 7) Requires the following if there are multiple funding entities:
  - Requires each funding entity to determine how funds that it contributes to the pilot program will be spent, provided that the expenditure completely aligns with the purposes of the pilot program.
  - b) Requires each funding entity to coordinate with each other to implement the purpose of the pilot program.
  - Requires each funding entity to coordinate with each other to submit one interim report and one final report to the Legislature.
- 8) Authorizes public high schools that do not offer any computer science course to voluntarily participate in the pilot program.
- 9) Requires the funding entity or funding entities, in coordination with the Working Group, to select public high schools to participate in the pilot program from the eligible high schools that apply to participate.
  - Requires the Working Group, when selecting public high schools to participate in the pilot program, to consider geographic diversity and prioritize selecting participants with the goal of increasing the computer science

**AB 887 (Berman)** Page **4** of **11** 

course access of pupils eligible for free or reduced meals, as specified, and pupils that are underrepresented in the field of computer science.

- 10) Authorizes the allowable expenses to include the following:
  - a) Educator recruitment.
  - b) Professional development training.
  - c) Examinations and industry certifications.
  - d) Incentives for school districts to increase access to computer science courses.
  - e) Incentives for educators who successfully complete professional development and teach computer science courses.
  - f) Administrative costs.
- 11) Requires the funding entity or funding entities, in coordination with the Working Group, to evaluate the effectiveness of the pilot program.
- Requires the funding entity or funding entities, in coordination with the working group, to submit an interim report on or before July 1, 2027, and a final report on or before April 1, 2028, to the respective Senate and Assembly Committees of Education and any other relevant policy and fiscal committees of the Legislature.
- 13) Establishes the intent of the interim and final report described in #12 above to include, but not be limited to, the following:
  - a) Pupil enrollment data, disaggregated by gender, race and ethnicity, special education status, English learner status, socioeconomically disadvantaged status, and grade level.
  - b) Equity and access data.
  - c) Educator support data.
  - d) Curriculum data.
  - e) Implementation data, including case studies from participating public high schools.
  - f) Recommendations for expansion of the pilot program, including funding considerations.
- 14) Establishes that the pilot program shall be funded through contributions, gifts, grants, in-kind donations, and donations from the funding entity or entities.
- 15) Defines the following terms:

 a) "Computer science" means the study of computers and algorithmic processes, including their principles, hardware and software designs, implementation, and impact on society, as described in the computer science academic content standards adopted by SBE.

- b) "Computer science course" means a computer science course that is aligned to the computer science content standards adopted by the SBE and in which the pupils do not merely use technology as passive consumers, but understand why and how computing technologies work, and then build upon that conceptual knowledge by creating computational artifacts.
- c) "Funding entity" means a nonprofit organization or private entity that contributes, gifts, grants, or donates funding to implement the pilot program.
- d) "Pilot program" means the California Computer Science Demonstration Project, as specified.
- 16) Requires California Department of Education (CDE), on or before June 30, 2028, and annually thereafter, to publicly post the following course-related data for grades 9 to 12, inclusive on its internet website, disaggregated at the state, county, school district, and school levels, for computer science courses that are submitted and certified by LEAs as part of the annual Fall 2 submission to California Longitudinal Pupil Achievement Data System (CALPADS):
  - The names and course codes of computer science courses that pupils are enrolled in at each school.
  - b) The number and percentage of pupils who enrolled in each computer science course, disaggregated as specified.

### **STAFF COMMENTS**

1) **Need for the bill.** According to the author, "Thirty-two states already require every high school to offer a computer science course. Alabama, Arkansas, Indiana, Louisiana, Nebraska, Nevada, North Carolina, North Dakota, Rhode Island, South Carolina, and Tennessee go even further requiring a computer science course for high school graduation. California has fallen behind these other states when it comes to prioritizing access to computer science education, exacerbating educational inequities and diversity gaps.

"According to the California Department of Education, nearly half of high schools in California do not offer any computer science courses. Schools serving low-income communities are three times less likely to offer core computer science courses than schools serving high-income communities. Rural schools are two times less likely to offer computer science courses than urban schools. While 52% of high schools serving a greater proportion of White or Asian students offered computer science courses, only 34% of high schools serving high proportions of Black, Indigenous, Latinx, and Pacific Islander students, offered

**AB 887 (Berman)** Page **6** of **11** 

computer science courses. While young women comprise 49% of the high school population, they comprise only 30% of students taking computer science.

"From Silicon Valley to Biotech Beach, California is the undisputed cradle of innovation, with over 45,000 high paying computing jobs open and unfilled here in California. Too many students grow up in the shadows of tech companies that are creating world-changing technology and offering good-paying careers, but they are not even getting the opportunity to learn the skills they need to one day work there. However, the reality is that computer science is about so much more than just Silicon Valley tech jobs. Computers and technology are an integral part of our everyday life and are relied upon in every industry, in every corner of California.

"In response to state cost considerations, AB 887 would be a creative step toward increasing access to computer science for all, by allowing public high schools, who would otherwise have no access to computer science, to participate in a pilot program. The purpose of the pilot program would be to increase the number of public high schools offering computer science and increase access to computer science education for socioeconomically disadvantaged students and students that are underrepresented in the field of computer science. It is time to restore California as a leader and take action to increase access to computer science education, and begin closing the current gender and diversity gaps."

2) Computer Science Standards and Strategic Plan. In September 2018, the SBE adopted the California Computer Science Standards (Standards). The Standards are based on computer science core concepts and core practices from the revised International Computer Science Teachers Association standards, which align with the national K–12 Computer Science Framework. The Standards outline the knowledge, concepts, and skills that students should acquire in each grade band--encouraging school districts to provide opportunities for computer science education for all students.

As the Standards were developed, the creation of the Computer Science Strategic Implementation Plan (CSSIP) was also underway. The development of the CSSIP was a multi-step process that involved 23 panel members, comprising teachers, administrators, faculty from institutions of higher education (IHEs), a public school student, representatives from private industry, a parent organization, the California Commission on Teacher Credentialing (CTC), and the IQC. Members were selected based on their expertise and leadership in computer science education, experience in standards-based interdisciplinary and differentiated instruction for diverse student populations, and previous committee experience. The final CSSIP includes activities and recommendations organized into three sections: Equity and Access, Supporting Educators to Teach Computer Science, and Expanding Computer Science Course Offerings. Each section provides the following:

- a) A brief overview of the topic, its current status, and why it is important;
- b) A description of state activities, both those that the state plans to implement right away and those that should be considered pending funding; and

**AB 887 (Berman)** Page **7** of **11** 

c) Expert suggestions and guidance for schools, districts, county offices of education (COEs), community and business partners, and other entities to consider as they work to improve computer science education for the students in their local schools and communities.

- 3) More Than Half of High Schools Do Not Offer Computer Science. In February 2024, the SPI issued a press statement, noting that 55% of high schools in California do not offer a single computer science course. Only 5% of California's 1,930,000 high school students are taking a computer science course. Schools in low-income communities are three times less likely to offer core computer science courses and over two times less likely to offer Advanced Placement courses than schools in high-income communities. Additionally, rural schools are two times less likely to offer computer science courses than urban schools.
- 4) **Schools face computer science workforce constraints.** The CSSIP emphasizes the need to increase the number of teachers qualified to teach computer science to expand the state's K–12 computer science education. This involves a multi-faceted approach to credentialing, new teacher recruitment, and providing professional learning for educators, administrators, and counselors. California offers three single-subject teaching credentials (in mathematics, business, and industrial and technology education) that authorize teachers to instruct in computer science. Additionally, the CTC grants supplementary computer science authorizations to teachers with other credentials.

In 2016, the CTC updated its Computer Concepts and Applications authorization to focus more on computer science education, changing the authorization's name to "Computer Science." To obtain supplementary authorization in computer science, teachers must complete 20 semester units of non-remedial coursework in computer science or hold a collegiate major in a related subject from a regionally accredited college or university. The required coursework covers areas such as computer programming, data structures and algorithms, digital devices and networks, software design, computing impacts, and additional courses within the relevant academic department.

AB 130 (Committee on Budget, Chapter 44, Statutes of 2021), which appropriated \$15 million for CTC's Computer Science Supplementary Authorization Incentive Grant Program. This grant program provides one-time grant awards of up to \$2,500 per participant, with a required 100% match of grant funding, to support credentialed teachers to obtain supplementary authorization in computer science and provide instruction in computer science coursework in settings authorized by the underlying credential. Any LEA that successfully applies to the competitive grant may use these funds to support tuition, fees, books, and release time. Priority is given to eligible grant applicants for teachers who provide instruction at either of the following: (a) a school operating within a rural district, and (b) a school with a higher share of unduplicated pupils than other applicants. This funding is available for encumbrance until June 30, 2026.

AB 887 (Berman) Page 8 of 11

As of March 2025, seven competitive rounds of Request for Applications have been awarded, and a total of 17 LEAs have been awarded a total of \$2,563,700, with roughly \$12 million remaining in the grant program.

This bill would create a framework for private funding to support the growth of the computer science educator workforce.

6) Why codify? This bill establishes the California Computer Science Demonstration Project (a pilot program) and a corresponding Working Group to increase the number of computer science courses available to students who are historically underrepresented in the field of computer science. A funding entity or entities would administer the pilot program, and the Working Group would be comprised of nonprofit organizations and private industry stakeholders with relevant expertise and experience in computer science education. The funding entities would determine how their specific contributions to the pilot program shall be spent, provided that the expenditures align with the purposes of the pilot program. The funding entities, in coordination with the Working Group, would select eligible schools that apply for the pilot program and presumably provide grant funding to selected schools to support efforts such as educator recruitment, professional development, examinations and industry certifications, and incentives. CDE's existing Computer Science Coordinator may engage with the Working Group, so long as their engagement does not result in any additional state costs; however, their participation is not required. If private non-state entities conduct all of these functions, it begs the question: why does this need to be codified?

Based on information provided by the author's office, the unique framework employed by this bill is the result of conversations with stakeholders across the state that voiced concerns about the cost pressures associated with a statewide requirement for public high schools to offer computer science courses. These cost pressures range from workforce shortages and administrative needs to infrastructure and equipment inequities. By connecting eligible schools with private dollars, this bill seeks to help address those cost pressures and bring a statewide vision of computer science course offerings closer to reality. By codifying the pilot program and the Working Group, the author intends for the work to serve as a proof of concept. However, in the interest of zeroing out the cost and resource impacts to the state, the Committee may wish to consider whether the resulting framework removes much of the hallmarks of accountability, oversight, and transparency that are expected of codified pilot programs.

To be clear, there is nothing in existing law that prohibits a private entity from establishing a philanthropic pilot program, convening a working group, or submitting a report to the Legislature. Simply put, they do not need the Legislature's permission. Conversely, the codification of the non-state framework proposed by this bill would likely set a precedent in the Education Code.

The Committee may wish to consider the following:

**AB 887 (Berman)** Page **9** of **11** 

 Student data privacy is of the utmost importance, particularly in a time when information can be used against students and their families. How can students and families be sure that student information is being handled responsibly when they provide data to the Working Group and potentially multiple private funding entities?

- This bill establishes the Working Group and specifies the qualities of its members. However, it does not specify who or what entity would be responsible for selecting members to be part of the Working Group. If a state entity is not selecting the membership or convening the group, who or what is?
- Much of the allowable expenses outlined in the bill work to address the workforce shortage issue that LEAs face in expanding computer science course offerings. If this is due, in part, to an issue of credentialing, shouldn't the CTC have a role in the Working Group?
- How can the public be assured that a conflict of interest will not arise when a
  privately funded effort assumes the legitimacy that accompanies codification,
  without the hallmarks of transparency or oversight that are fundamental to
  state programs?
- What information would be made available to the LEAs, the state, or the public about the source of the funds contributed by the funding entities?

# 7) Author amendments to be taken as Committee amendments.

- Adjust the days by which the interim and final report must be submitted to the Legislature, from July 1, 2027, and April 1, 2028, to August 1, 2027, and July 1, 2028, respectively.
- b) Clarify that only public high schools that currently do not offer any computer science courses may be eligible to participate in the voluntary pilot program.
- c) Specify that the pilot program shall operate as a grant program, providing grant funds to selected LEAs to advance the goals of the pilot program.

### 8) **Committee amendments.**

- a) Strike the authorization for the California Computer Science Coordinator to engage with the Working Group and instead require that the Coordinator serve on the Working Group.
- b) Require LEAs participating in the pilot program to ensure that any sharing of student data complies with all applicable federal and state laws to protect individual privacy, including but not limited to the federal Family Educational Rights and Privacy Act and Section 1798.24 of the Civil Code.

**AB 887 (Berman)** Page **10** of **11** 

c) Require the Working Group and funding entities, as part of the interim and final report, to provide information about the membership of the Working Group and funding entities, as well as source information and descriptions about the dollar amounts of contributions, gifts, grants, in-kind donations, and other donations provided by the funding entity and/or respective funding entities.

- d) Clarify that the Working Group shall not be funded by the state.
- e) Sunset the Working Group and the pilot program on January 1, 2029.

## Related legislation.

AB 2097 (Berman, 2024) would have required the governing board of an LEA and a charter school maintaining any of grades 9 to 12, to adopt a plan to offer at least one course in computer science education beginning the 2026-27 school year and across all high schools by the 2028-29 school year, as specified, and required the CDE, under the direction of the California Computer Science Coordinator, as specified, to develop a computer science implementation guide, which shall include specified information regarding computer science standards-aligned courses. AB 2097 was substantively similar to AB 887 as introduced. *AB 2097 was held in the Senate Appropriations Committee*.

AB 1054 (Berman, 2023) was substantially similar to AB 2097 and was held in the Senate Appropriations Committee.

AB 1251 (Luz Rivas, Chapter 834, Statutes of 2023) establishes a workgroup to determine which single subject credentials should authorize the teaching of computer science, and to report recommendations to the Legislature. AB 1251's operation was subject to an appropriation, and to date, no allocation has been made in the State Budget for its purpose.

AB 1853 (Berman, 2022) would have established the Computer Science Preservice Teacher Grant Program, administered by the CTC to award competitive grants to IHEs to develop or expand K–12 computer science and computational thinking coursework for individuals seeking specified teaching credentials. *AB 1853 was held in the Assembly Appropriations Committee*.

AB 130 (Committee on Budget, Chapter 44, Statutes of 2021) established the Computer Science Supplementary Authorization Incentive Grant Program for the purpose of providing one-time grants to LEAs to support the preparation of credentialed teachers to earn a supplementary authorization in computer science and provide instruction in computer science coursework.

AB 128 (Ting, Chapter 21, Statutes of 2021) appropriated \$5 million on a one-time basis to establish the Educator Workforce Investment Grant: Computer Science, and required the CDE to select an institution of higher education or nonprofit organizations to provide professional learning for teachers and paraprofessionals statewide in strategies for

**AB 887 (Berman)** Page **11** of **11** 

providing high-quality instruction and computer science learning experiences aligned to the computer science content standards.

AB 2274 (Berman, 2020) would have required the CDE to annually compile and post on its website a report on computer science courses, course enrollment, and teachers of computer science courses, for the 2019-20 school year and each subsequent school year. AB 2274 was held in the Assembly Education Committee.

AB 20 (Berman, 2020) would have established a Computer Science Coordinator position at the CDE. AB 20 was held in the Assembly Appropriations Committee.

AB 52 (Berman, 2019) would have required the CSSIP to be regularly updated. AB 52 was held in the Assembly Appropriations Committee.

AB 2329 (Bonilla, Chapter 693, Statutes of 2016) requires the SPI to convene a computer science strategic implementation advisory panel to develop recommendations for a CSSIP.

### **SUPPORT**

College Board CSforCA Kapor Center Advocacy Microsoft Corporation Salesforce TechNet

### **OPPOSITION**

None received

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