
SENATE COMMITTEE ON EDUCATION

Senator Connie Leyva, Chair

2019 - 2020 Regular

Bill No: AB 28 **Hearing Date:** June 19, 2019
Author: Obernolte
Version: December 3, 2018
Urgency: No **Fiscal:** Yes
Consultant: Brandon Darnell

Subject: High school diplomas: State Seal of STEM.

SUMMARY

This bill establishes the State Seal of Science, Technology, Engineering and Mathematics (STEM) to be voluntarily affixed to the diploma or transcript of a high school graduate who has attained proficiency in science, technology, engineering, and mathematics fields.

BACKGROUND

Existing law:

- 1) Establishes the State Seal of Biliteracy (SSB), which provides recognition to high school students who have demonstrated proficiency in speaking, reading, and writing in one or more languages in addition to English. (Education Code § 51460)
- 2) Requires each school district, county office of education, or direct-funded charter school that confers the SSB to maintain appropriate records in order to identify students who have met the established criteria for the award and to affix the SSB insignia to the diploma or transcript of each qualifying student. (EC § 51464)
- 3) Requires high school graduates to meet all of the following criteria to be eligible for the SSB:
 - a) Complete all English language arts requirements for graduation with an overall grade point average of 2.0 or above in those classes.
 - b) Pass the California Standards Test in English language arts administered in grade 11 at the proficient level or above.
 - c) Demonstrate proficiency in one or more languages in addition to English, through one of four methods. (EC § 51461)
- 4) Establishes the Golden State Seal Merit Diploma (GSSMD), which provides recognition to public high school graduates who have demonstrated mastery of high school curriculum in six designated subject areas, four of which must be mathematics, English language arts, science, and United States history. Eligibility requirements for the GSSMD include a combination of course grades,

results from assessments produced by private providers or local education agencies (LEAs), and/or qualifying Smarter Balanced Summative Assessment of California Standards test scores for use by LEAs to award the Golden State Seal Merit Diploma (GSSMD) to graduating students. (EC § 51450 et seq.)

- 5) This bill establishes a State Seal of Civic Engagement, to be affixed to the diploma of qualifying high school graduates, based on a demonstration of excellence in civics education and participation in community service or extracurricular activities. (EC§ 51471)

ANALYSIS

This bill establishes the State Seal of Science, Technology, Engineering and Mathematics (STEM) to be voluntarily affixed to the diploma or transcript of a high school graduate who has attained proficiency in science, technology, engineering, and mathematics fields. Specifically, this bill:

- 1) Establishes a State Seal of STEM to recognize high school graduates who have attained proficiency in fields of study within the subjects of science, technology, engineering, and mathematics.
- 2) Requires the Superintendent of Public Instruction to award the State Seal of STEM.
- 3) Specifies that school district participation in this program is voluntary.
- 4) Specifies that the purpose of the State Seal of STEM is to:
 - a) Encourage students to study science, technology, engineering, and mathematics.
 - b) Certify achievement with the STEM fields.
 - c) Provide students with the tools to demonstrate STEM competency to employers.
 - d) Provide universities with a method to recognize and give academic credit to applicants seeking admission.
 - e) Prepare students for with 21st century skills.
 - f) Engage students in STEM learning at an early age.
 - g) Prepare students for a job market increasingly in need of individuals with STEM skills.
- 5) Requires that high school students meet all of the following criteria to be eligible for the State Seal of STEM:
 - a) Attained a 3.0 grade point average on a 4.0 scale for all STEM classes

taken in high school.

- b) Successfully completed four yearlong classes or equivalent in mathematics and science while enrolled in high school as specified.
- c) Has met one of the following criteria in the area of science:
 - i) A score of 3 or higher on a science Advanced Placement (AP) examination.
 - ii) A score of 600 or higher on a science Scholastic Assessment Test (SAT) subject test.
 - iii) A score of 4 or higher on an International Baccalaureate (IB) examination.
 - iv) A grade of B or higher in a college-level science course taken through concurrent enrollment.
 - v) A score indicating that the pupil has met or exceeded standards on a state-standards-aligned assessment in science.
- d) Has met one of the following criteria in the area of mathematics:
 - i) A score of 3 or higher on a mathematics AP examination.
 - ii) A score of 600 or higher on a mathematics SAT subject test.
 - iii) A score of 4 or higher on a mathematics IB examination.
 - iv) A grade of B or higher in a college-level mathematics course taken through concurrent enrollment.
 - v) A score indicating that the student has met or exceeded standards on a state-standards-aligned assessment in mathematics.
- 6) Requires the Superintendent of Public Instruction (SPI) to:
 - a) Prepare and deliver to school districts an appropriate insignia to be affixed to the diploma or transcript of the student indicating that the student has been awarded a State Seal of Science, Technology, Engineering and Mathematics (STEM) awarded by the SPI.
 - b) Provide other necessary information for school district's to successfully participate in the program.
- 7) Requires participating school districts to:
 - a) Maintain records in order to identify students a State Seal of STEM

- b) Affix the insignia to the diploma or transcript for each student that has earned a State Seal of Science, Technology, Engineering and Mathematics (STEM).
- 8) Prohibits a fee from being charged to students to receive a State Seal of STEM.
 - 9) Specifies that the article shall not become operative until and unless state board, in a public meeting, makes a declaration of all of the following:
 - a) Data from the statewide administration of state science assessments aligned to the California Next Generation Science Standards (NGSS) are available. Data from a field test of a state science assessment would not satisfy this requirement.
 - b) All California pupils have a reasonably equal opportunity to engage in the coursework and other requirements that would be necessary to earn the State Seal of STEM.
 - c) The State Seal of STEM would confer value to the pupil through recognition by postsecondary educational institutions or employers.
 - d) The State Seal of STEM would be earned through recognized excellence or outstanding achievement in the field of study.
 - e) The State Seal of STEM would not be based primarily on achievement that is already recognized through other means, such as grades, assessment results, other measures of academic achievement, or industry certifications.
 - 10) Sunsets the program on July 31, 2026.

STAFF COMMENTS

- 1) ***Need for the bill.*** “According to the author, California has a quickly growing STEM field, while at the same time lacking a skilled workforce qualified to fill the open positions in this field. In fact, in the most recent year for which data is available, the California Employment Development Department reported that the number of online job postings for STEM-related jobs outstripped the number of unemployed STEM workers by a ratio of 2:1. Additionally, of the more than one million STEM jobs California will need over the next decade, around 75 percent will require a bachelor’s degree or higher. When you stack this against the fact that only 33 percent of California’s working-age population currently have degrees that serve as a prerequisite for the vast majority of these STEM and health jobs, it becomes very clear that California must take action. California must find a way to motivate students to show interest in these fields early on. Additionally, schools in California should be supported in their efforts to offer as many comprehensive STEM classes as possible to our students.”
- 2) ***Student access to STEM Education.*** The Superintendent of Public Instruction’s Science, Technology, Engineering and Mathematics (STEM) Education Task

Force, in a 2014 report on Science, Technology, Engineering and Mathematics (STEM) education titled INNOVATE: A Blueprint for Science, Technology, Engineering and Mathematics in California Public Education, found that many of California's students lack consistent access to high-quality STEM education. The report attributes the problem to a lack of access to "materials and instruction; insufficient opportunities for students to engage in hands-on, inquiry based learning; and insufficient professional preparation by teachers at all levels".

The gaps in access are reflected in many measures of student course-taking and achievement, including Advanced Placement (AP), International Baccalaureate (IB), SAT II subject tests, and out-of-school STEM educational opportunities. Advanced Placement data published by the College Board, for example, indicate that a very small percentage of California high school students took AP examinations. The College Board also notes that "in many cases, schools serving large numbers of traditionally underrepresented minority students do not yet provide AP course work in STEM disciplines."

To be eligible, State Seal of STEM students are required to enroll in four years of math and science and attain at least a 3.0 grade point average and demonstrate proficiency by scoring at the specified levels on one of the following AP exams, SAT, IB exam or take a college level course through concurrent enrollment. To address some of the concerns relating to access to STEM education, this bill was amended to include the state-standards-aligned assessments in mathematics as one of the criteria for eligibility. These exams are administered statewide. However, concerns still remain whether students have sufficient access to STEM education in school.

- 3) ***Proliferation of diploma seals.*** Since 2011 this Committee has reviewed three bills proposing diploma seal, in biliteracy, STEM, and civic engagement. It is likely that this Committee will see similar measures to establish diploma seals in other subjects. ***The committee may wish to consider*** the policy implications of establishing numerous diploma seal options, including the effect multiple seals would have on students and families, and whether authorizing additional diploma seals could result in diminishing returns on the already limited benefits they might provide.
- 4) ***What about county office of education and charter school students?*** As drafted, this bill would only grant school district students the ability to earn a state seal in STEM. ***Staff recommends that the bill be amended*** to apply to county offices of education and charter school students as well.
- 5) ***Previous legislation.*** AB 24 (Eggman, Chapter 24, Statutes of 2018) Establishes a State Seal of Civic Engagement, to be affixed to the diploma of qualifying high school graduates, based on a demonstration of excellence in civics education and participation.

AB 1142 (Medina, Chapter 95, Statutes of 2018) updates the criteria used to determine eligibility for the State Seal of Biliteracy (SSB) to reflect new state assessments in English language development and English language arts, and to authorize the SSB for pupils who seek to qualify through a language that is not

characterized by listening, speaking, or reading, or for which there is no written system.

AB 2072 (Chang) of the 2015-16 Session would have established the State Seal of Science, Technology, Engineering and Mathematics (STEM) to recognize high school graduates who have attained proficiency in STEM content. AB 2072 was held in the Senate Appropriations Committee.

AB 815 (Brownley), Chapter 618, Statutes of 2011 established the State Seal of Biliteracy to recognize high school graduates who attained a high level of proficiency in speaking, reading, and writing in one or more languages in addition to English.

SB 253 (Wyland) of the 2009-10 Session would have authorized school districts and county offices of education to offer pupils a career technical education certificate upon meeting specified requirements. This bill was held in the Assembly Appropriations Committee.

SUPPORT

California School Boards Association
California State PTA

OPPOSITION

None received

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