

AMENDED IN SENATE AUGUST 20, 2014

SENATE BILL

No. 1008

Introduced by Senator Wyland

February 13, 2014

An act to add Section 52952 to the Education Code, relating to science education.

LEGISLATIVE COUNSEL'S DIGEST

SB 1008, as amended, Wyland. Science education: ~~science~~ *STEM* curriculum.

The California Constitution requires the Legislature to encourage by all suitable means the promotion of intellectual, scientific, moral, and agricultural improvement. Under existing law, the Legislature finds and declares that improved science education in elementary and secondary schools contributes to improvements in pupil performance. Existing law provides for the establishment by the University of California, upon approval by the regents, of the California Science Project for purposes of providing science education to public elementary, secondary, and postsecondary school personnel located in rural, urban, and suburban areas throughout the state. *requires the adopted course of study for grades 1 to 12, inclusive, to include instruction in various areas of study, including, but not limited to, mathematics and science.*

This bill would make specified findings and declarations, and would require the Superintendent of Public Instruction and the State Board of Education to consider ways to increase the number of pupils who go to college and graduate with degrees in the various scientific and engineering fields. The bill would require the Superintendent and the state board to direct the appropriate entity to revise the science teaching frameworks and standards, as specified, and to incorporate in the science

~~curriculum applied mathematics, reading comprehension, expository writing, analytical, intellectual, and creative skills, and engineering elements. strategies to introduce, and expose to pupils, a complete STEM (science, technology, engineering, and mathematics) program at age appropriate levels from kindergarten through each of grades 1 to 12, inclusive. The bill would require the STEM program to include certain elements, including the development of a STEM curriculum that includes a wide array of engineering fields, opportunities to design and perform scientific experiments that explore challenging questions developed by pupils, and training for current teachers interested in a STEM curriculum.~~

Vote: majority. Appropriation: no. Fiscal committee: yes.
 State-mandated local program: no.

The people of the State of California do enact as follows:

- 1 SECTION 1. The Legislature finds and declares ~~both~~ all of the
- 2 following:
- 3 (a) Science and technical innovation is critical for the future of
- 4 California.
- 5 (b) California is not producing enough scientists and engineers
- 6 to meet the challenges that businesses located in this state will face
- 7 in the global competition of the future.
- 8 (c) *STEM (science, technology, engineering, and mathematics)*
- 9 *subjects have been introduced into high school classrooms in the*
- 10 *form of the traditional subject areas of science and mathematics.*
- 11 *Innovative technology and engineering components, and extensive*
- 12 *exploratory experimentation in science topics, require added*
- 13 *emphasis in order to define a vision for STEM, and to achieve the*
- 14 *innovation crucial to the California economy and the personal*
- 15 *fulfillment of pupils.*
- 16 SEC. 2. Section 52952 is added to the Education Code, to read:
- 17 52952. *Notwithstanding any other law, the Superintendent and*
- 18 *the state board shall consider strategies to introduce, and expose*
- 19 *to pupils, a complete STEM (science, technology, engineering,*
- 20 *and mathematics) program at age appropriate levels from*
- 21 *kindergarten through each of grades 1 to 12, inclusive, that*
- 22 *includes, but is not limited to, all of the following:*
- 23 (a) *The development of a STEM curriculum that includes, by*
- 24 *the time a pupil reaches high school, engineering and technology*

1 *subjects with opportunities for their application, such as robotics*
2 *programs or software development.*

3 *(b) The development of a STEM curriculum that includes a wide*
4 *array of engineering fields including, but not limited to, civil,*
5 *structural, mechanical, chemical, and electrical engineering.*

6 *(c) Opportunities for the innovative design of, and, where*
7 *feasible, the production of, engineered projects.*

8 *(d) In the STEM science curriculum, the incorporation of the*
9 *analytical and creative skills necessary to pose and investigate*
10 *scientific questions.*

11 *(e) Opportunities to design and perform scientific experiments*
12 *that explore challenging questions developed by pupils.*

13 *(f) Training for current teachers interested in the STEM*
14 *curriculum.*

15 *(g) Opportunities for potential teachers from the private sector*
16 *with the appropriate skills to teach STEM subjects.*

17 *(h) Recruiting more college graduates to teach STEM subjects*
18 *through incentives and public-private partnerships.*

19 *(i) Requiring the California State University, and requesting*
20 *the University of California, to recognize STEM subjects as equal*
21 *to mathematics or science courses for purposes of admission.*

22 ~~SEC. 2. Section 52952 is added to the Education Code, to read:~~

23 ~~52952. (a) The Superintendent and the state board shall~~
24 ~~consider ways to increase the number of pupils who go to college~~
25 ~~and graduate with degrees in the various scientific and engineering~~
26 ~~fields, including either of the following:~~

27 ~~(1) Recruiting more science teachers through incentives and~~
28 ~~public-private partnerships designed to encourage pupils to go to~~
29 ~~college, major in science and related fields, and enter teaching~~
30 ~~careers.~~

31 ~~(2) Encouraging businesses in the private sector to participate~~
32 ~~in educating pupils and in offering them exposure to possible~~
33 ~~careers in the science and engineering fields.~~

34 ~~(b) To increase the number of pupils who go to college and~~
35 ~~graduate with degrees in the various scientific and engineering~~
36 ~~fields, the Superintendent and the state board shall direct the~~
37 ~~appropriate entity to do the following:~~

38 ~~(1) Revise the science teaching frameworks and standards, if~~
39 ~~necessary, to reflect the model curriculum developed by~~

- 1 organizations of outstanding scientists, such as the National
2 Academy of Sciences.
- 3 (2) Incorporate in the science curriculum applied mathematics,
4 reading comprehension, and expository writing in describing
5 observations and experiments.
- 6 (3) Incorporate in the science curriculum analytical, intellectual,
7 and creative skills required to pose and investigate scientific
8 questions.
- 9 (4) Incorporate in the science curriculum engineering elements
10 in a manner designed to engage pupils.