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# SENATE COMMITTEE ON EDUCATION

Senator Benjamin Allen, Chair

2017 - 2018 Regular

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**Bill No:** SB 720 **Hearing Date:** August 31, 2018  
**Author:** Allen  
**Version:** August 6, 2018  
**Urgency:** No **Fiscal:** Yes  
**Consultant:** Brandon Darnell

**Subject:** Environmental education: environmental principles and concepts

NOTE: This bill was amended in the Assembly to replace its contents and this is the first time the bill is being heard by this Committee in its current form.

## SUMMARY

This bill revises provisions relating to the education principles for the environment by, among other things, (1) renaming them the environmental principles and concepts; (2) revising the process for, and entities involved in, updating the environmental principles and concepts; and (3) requiring the Instructional Quality Commission to ensure that the environmental principles and concepts are integrated into content standards and curriculum frameworks whenever those standards and frameworks are revised.

## BACKGROUND

Existing law:

- 1) Establishes the Office of Education and the Environment (OEE) in the California Department of Resources Recycling and Recovery (CalRecycle) and requires the OEE to implement a statewide environmental education program. (Public Resources Code § 71300)
- 2) Requires the OEE, under the direction of CalRecycle and in cooperation with the California Department of Education (CDE) and the State Board of Education (SBE), to develop and implement a unified education strategy of the environment for elementary and secondary schools that does all of the following:
  - a) Coordinate instructional resources and strategies for providing active pupil participation in onsite conservation efforts.
  - b) Promote service-learning opportunities between schools and local communities.
  - c) Assess the impact of the unified education strategy on the achievement and resource conservation of participating pupils. (PRC § 71300)
- 3) Requires the CDE and SBE, in cooperation with CalRecycle, to develop and implement, to the extent feasible, a teacher training and implementation plan that guides the phased implementation of the unified education strategy in elementary, middle, and high school programs, for the education of pupils,

faculty, and administrators on the importance of integrating environmental concepts and programs in schools. (PRC § 71300)

- 4) Requires the Office of Education and Environment (OEE) to coordinate with other agencies and groups with expertise in education and the environment to implement the statewide educational program. (PRC § 71300)
- 5) Requires the OEE, as part of the unified education strategy, to develop education principles for the environment for elementary and secondary school pupils, in cooperation with the Secretary for Environmental Protection, the Natural Resources Agency, the California Department of Education, and the State Board of Education. (PRC § 71301)
- 6) Authorizes the principles to be updated every four years, starting in 2008. (PRC § 71301)
- 7) Requires the principles to be aligned to the academic content standards adopted by the SBE for English language arts, mathematics, history-social science, and science. (PRC § 71301)
- 8) Requires the education principles be used to do both of the following:
  - a) To direct state agencies that include environmental education components for elementary and secondary education in regulatory decisions or enforcement actions.
  - b) To align state agency environmental education programs and materials that are developed for elementary and secondary education. (PRC § 71301)
- 9) Requires the education principles for the environment include, but not be limited to, concepts relating to the following topics:
  - a) Environmental sustainability.
  - b) Water.
  - c) Air.
  - d) Energy.
  - e) Forestry.
  - f) Fish and wildlife resources.
  - g) Oceans.
  - h) Toxics and hazardous waste.
  - i) Integrated waste management.

- j) Integrated pest management.
  - k) Public health and the environment.
  - l) Pollution prevention.
  - m) Resource conservation and recycling.
  - n) Environmental justice. (PRC § 71301)
- 10) Requires the principles to be aligned to the applicable academic content standards adopted by the State Board of Education (SBE) and to not duplicate or conflict with any academic content standards. (PRC § 71301)
- 11) Requires the principles to be incorporated, as the SBE determines to be appropriate, into criteria developed for textbook adoption in science, mathematics, English/language arts, and history-social sciences. (PRC § 71301)
- 12) Requires, if the SBE determines that the principles are not appropriate for inclusion in textbook adoption criteria, the SBE to collaborate with the Office to modify the principles as needed to ensure that they are included in the textbook adoption criteria in science, mathematics, English/language arts, and history-social sciences. (PRC § 71301)
- 13) Requires the principles to be considered for inclusion in the academic content standards if the standards in science, mathematics, English/language arts, or history-social sciences are revised. (PRC § 71301)
- 14) Requires the Office of Education and the Environment, in cooperation with the Secretary for Environmental Protection, the Natural Resources Agency, the California Department of Education, and the SBE, to use the education principles for the environment to develop a model environmental curriculum that incorporates the education principles for the environment and is aligned with applicable SBE- adopted academic content standards in science, mathematics, English/language arts, and history/social sciences, to the extent that any of those content areas are addressed in the model curriculum. (PRC § 71302)

## ANALYSIS

This bill revises provisions relating to the education principles for the environment by, among other things, (1) renaming them the environmental principles and concepts; (2) revising the process for, and entities involved in, updating the environmental principles and concepts; and (3) requiring the Instructional Quality Commission (IQC) to ensure that the environmental principles and concepts are integrated into content standards and curriculum frameworks whenever those standards and frameworks are revised. Specifically, this bill:

- 1) Requires the IQC to ensure that the environmental principles and concepts are integrated into the content standards and curriculum frameworks in the subjects

of English language arts, science, history-social science, health, and, to the extent practicable, mathematics whenever those standards and frameworks are revised.

- 2) Retains the requirement for the environmental principles and concepts to be incorporated, as the State Board of Education (SBE) determines to be appropriate, into the criteria developed for textbook adoption, but deletes the requirement that the SBE, if it determines that they are not appropriate for inclusion in the textbook adoption, collaborate with the Office of Education and the Environment (OEE) to make the changes necessary to ensure that they are included in the textbook adoption criteria in science, mathematics, English/language arts, and history/social sciences.
- 3) Renames the “education principles for the environment” as the “environmental principles and concepts.”
- 4) Combine the topics of “integrated waste management” and “resource conservation and recycling” into “resource conservation, waste reduction, and recycling.”
- 5) Authorizes the OEE, in cooperation with the Superintendent of Public Instruction (SPI), the SBE, the California Environmental Protection Agency, and the Natural Resources Agency, to update the environmental principles and concepts every four years (as measured from July 1, 2008).
- 6) Requires the OEE, when updating or amending the environmental principles and concepts, to do all of the following:
  - a) Ensure that the environmental principles and concepts are based on current scientific and technical knowledge.
  - b) Solicit and coordinate input from the SBE, the SPI, and other executive branch agencies and departments, nongovernmental science and education consultants and organizations with the relevant scientific and technical knowledge, and currently employed, credentialed, public school classroom teachers with experience in education related to the environment.
  - c) Hold a minimum of two public meetings in order for the public to provide input on the modifications. The public meetings required by this subdivision shall be held pursuant to the Bagley-Keene Open Meeting Act.
- 7) Requires a majority of the individuals consulted to review proposed updates or amendments to the environmental principles and concepts to be credentialed, current public school elementary or secondary classroom teachers with experience in education related to the environment.
- 8) Requires environmental principles and concepts to be aligned to the academic content standards adopted by the SBE in the subjects of English language arts, science, history-social science, health, and, to the extent practicable,

- mathematics, and prohibits them from conflicting with any academic content standards.
- 9) States Legislative findings and declarations relating to the importance of the environmental principles and concepts and environment literacy.
  - 10) States the intent of the Legislature that the Superintendent of Public Instruction (SPI) use the resources at his or her disposal to provide leadership to further the goals of environmental literacy, as specified.
  - 11) Encourages the governing boards of school districts to do all of the following with respect to the course of study in grades 1 to 6, inclusive, and in grades 7 to 12, inclusive:
    - a) Embed environmental literacy in local control and accountability plans, including, but not necessarily limited to, embedding environmental literacy elements in local priorities and goals.
    - b) Provide professional development for educators in environmental literacy, in the integration of environmental principles and concepts and other environmental content with state-adopted standards and curriculum frameworks, and in the development and implementation of curriculum and activities inside and outside of the classroom that promote environmental literacy.
    - c) Build partnerships with other local educational agencies and with community-based organizations, informal education providers with expertise in science, history-social science, public health, social and environmental justice, and other environmental content providers in all aspects of environmental literacy programs.
    - d) Ensure that environmental literacy curriculum and learning experiences are made available on an equitable basis to all pupils and that the environmental literacy curriculum and learning experiences reflect the linguistic, ethnic, and socioeconomic diversity of California.
  - 12) Further encourages the governing boards of school districts to do all of the following with respect to the course of study in grades 7 to 12, inclusive, to also provide professional development for educators in linking environmental literacy content and principles to career pathways and to career technical education curriculum and activities.

## STAFF COMMENTS

- 1) ***Need for the bill.*** According to the author, “SB 720 takes a step-wise approach to ensuring that the environmental principles and concepts are being integrated into future planning for the school districts. The bill seeks to strengthen access to environmental literacy and encourage partnerships with other educational agencies and community-based and nonprofit organizations. Research has shown that garden-based learning and environmental service-learning fosters

critical thinking and collective problem-solving skills, addressing students' need for experiences that prepare them for higher education, the workplace, and civic engagement. The bill also directs the SPI to use available resources to further the goals of environmental literacy and justice. Lastly, the bill ensures that the appropriate scientific and educational agencies cooperate to update or amend the environmental principles. The bill encourages cooperation between the State Board of Education (SBE), SPI, CalEPA, CalRecycle, and the Natural Resources Agency to ensure that the environmental principles and concepts are based on the most current scientific and technical knowledge. SB 720 reinforces the state's commitment to environmental education and ensures continuity during administration changes.”

- 2) ***The Environmental Principles and Concepts.*** According to CalRecycle, “The environmental principles and concepts examine the interactions and interdependence of human societies and natural systems. They are the foundation of the environmental content taught in the Education and the Environment Initiative (EEI) Curriculum. As the concepts are mastered, environmental literacy is developed in California’s students. In the EEI Curriculum, students’ knowledge of the environmental principles and concepts builds and spirals through their educational years, leading to deeper and more complex understanding as the student advances. To further ensure that all California students become environmentally literate, the law requires the California Department of Education to only approve new K-12 Science and History/Social Science textbooks that incorporate and address the environmental principles and concepts. This is remarkable.”
- 3) ***The EEI Curriculum.*** According to OEE, The EEI Curriculum integrates California's existing Science and History/Social Science academic content standards and the Environmental Principles & Concepts. These two elements combined are the basis for EEI's custom Learning Objectives. Developed by the EEI Planning team, the Learning Objectives define the essential knowledge and skills needed to teach each academic content standard through the context of an environmental principle and concept. The result is that when the Learning Objectives are taught, the academic content standard has also been taught to a breadth and depth for student mastery.

Each set of custom Learning Objectives is specific to the academic standard(s) taught in the corresponding EEI Curriculum unit and are presented sequentially, beginning with knowledge and comprehension, and where appropriate, moving toward application, analysis, synthesis, and ultimately, evaluation. These Learning Objectives ultimately guided the content that writing teams delivered, and ensured students are provided with opportunities to master the content standards while building environmental literacy. This tri-integrated design presents the environmental content knowledge in the environmental principles and concepts as an integral part of standards-based instruction, not as a time-consuming "add-on," or supplemental curriculum.

- 4) ***California Environmental Literacy Task Force.*** In 2014, the Superintendent of Public Instruction assembled the California Environmental Literacy Task Force (ELTF) to create a blueprint for achieving environmental literacy for all California

students. The Blueprint, entitled *A Blueprint for Environmental Literacy: Educating Every Student In, About, and For the Environment*, was published in 2015. The Blueprint highlights the need for expanded environmental literacy education by referencing a recent survey of 520 California school principals. This survey showed that 13 percent of schools have integrated environmental education into their curricula, and 77 percent spend less than \$5,000 on field trips, professional development, and curricular materials for environmental education. In addition, the Blueprint states, "A false perception persists from the No Child Left Behind accountability era that environmental and outdoor programs are non-academic and not connected to the core curriculum. Research shows, however, that in schools where environmental content is integrated as a primary part of instruction, student achievement has improved."

To improve environmental literacy among California's students, the Blueprint identified the following six strategies:

- a) Systematically integrate environmental literacy concepts into statewide educational priorities.
- b) Strengthen collaboration across the state between key stakeholders.
- c) Leverage the Superintendent's influence and create a public awareness campaign to build broad support for the importance of environmental literacy, and encourage and support increased allocation of state and locally controlled funding to environmental literacy programs.
- d) Implement changes to relevant state law and policy and ensure that relevant existing laws are funded and effectively implemented.
- e) Create an Environmental Literacy Steering Committee (ELSC) to oversee the implementation of the recommendations of the Blueprint.
- f) Develop a coherent strategy for funding environmental literacy across the state.

In 2016, Superintendent of Public Instruction appointed the ELSC to create an implementation plan for environmental literacy. The ELSC is comprised of 30 educational leaders and nonprofit stakeholders, and includes representatives from the California Department of Education, CalRecycle, University of California, and the state Board of Education.

- 5) ***Environmental literacy has been voluntarily integrated into science, history-social science, and health.*** As noted in the Assembly Education Committee's analysis, although the EP&Cs and environmental topics have been incorporated into standards and frameworks for several subjects, this has occurred on a voluntary basis. Specifically, the SBE incorporated the environmental principles and concepts into the Health Education Framework, and environmental literacy concepts have been integrated into the history-social science standards and throughout California's Next Generation Science Standards.

*HEALTH:* In April 2018, the California Department of Education released on its website a draft of the Health Education Framework. The introduction to the framework lists the educational principles and concepts and describes their integration into the framework as follows:

“Educating students about environmental health, from both a personal and community health perspective, is a strand in the standards that continues from kindergarten through high school where students are expected to learn, among other issues, about the impacts of air and water pollution on health. These topics tie directly to California’s educational principles and concepts, adopted by the State Board of Education (SBE) in 2004. The educational principles and concepts are an important piece of the curricular expectations for all California students that teachers can incorporate through their many connections with the health education standards, specifically by focusing instruction on the personal and community effects of environmental issues.”

*SCIENCE:* In 2013, the SBE adopted the California Next Generation Science Standards (NGSS) as the state’s content standards in science, with some modifications of the national model. In contrast to California’s previous science standards, NGSS shifts focus from having students memorize scientific information to teaching students how to think critically about core scientific ideas, how to connect key concepts across disciplines, and how to implement processes used by practicing scientists. The NGSS details performance expectations for grades K-12 and includes a focus on key aspects of environmental literacy. The Blueprint provides the following examples:

- a) Kindergarten: Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
- b) Grade 5: Obtain and combine information about ways individual communities use science ideas to protect Earth’s resources and environment.
- c) Middle School: Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.
- d) High School: Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

*HISTORY-SOCIAL SCIENCE:* The history-social science standards also address environmental topics, although the standards were last revised in 1998. The Blueprint provides the following examples of environmental topics within the history-social science standards:

- a) Grade 4: Analyze the effects of the Gold Rush on settlements, daily life, politics, and the physical environment.

- b) Grade 6: Discuss the climatic changes and human modifications of the physical environment that gave rise to the domestication of plants and animals and new sources of clothing and shelter.
  - c) Grade 11: Discuss the diverse environmental regions of North America, their relationship to local economies, and the origins and prospects of environmental problems in those regions.
- 6) ***State educational frameworks, but not standards, are developed on a standardized timeline.*** During the standards movement in the 1990s, when the state began adopting content standards in a number of subject areas, no process was established in state law to allow for regular revisions to these standards. As a result, revision of content standards must currently be initiated by legislative action. In contrast, curriculum frameworks—which are built upon, and provide guidance on how to implement, those standards—are updated on an eight-year cycle. This bill requires the EP&Cs to be incorporated into revisions of the standards and frameworks; however, the EP&Cs, as well as subsequent changes to the EP&Cs, will not be reflected in the standards unless legislative action requires revision of the standards.

## SUPPORT

5 Gyres Institute  
 7th Generation Advisors  
 Adventure Risk Challenge  
 Alameda Unified School District  
 Alliance for Climate Education  
 AltaSea at the Port of Los Angeles  
 Association for Environmental and Outdoor Education  
 Association of Zoos and Aquariums  
 Azul  
 Biomimicry  
 Bioneers  
 California Academy of Sciences  
 California Association of Zoos and Aquariums  
 California County Superintendents Educational Services Association  
 California League of Conservation Voters  
 California Native Plant Society  
 California Science Teachers Association  
 Californians Against Waste  
 Center for Oceanic Awareness, Research, and Education  
 ChangeScale  
 Children & Nature Network  
 Cleantech San Diego  
 Clean Water Action  
 Climate Cents  
 Common Sense Kids Action  
 Conservation Corps of Long Beach  
 Cupertino Educational Endowment Foundation  
 David Brower Center

Earth Day Network  
Education Outside  
Environmental Charter Schools  
Environmental Working Group  
Environment California  
Exploratorium  
First Republic  
Friends of the LA River  
Golden Gate National Parks Conservancy  
Grades of Green  
Greenpeace  
Green Schoolyards America  
Heal the Bay  
Inside the Outdoors Foundation  
InterpretPlants Studies  
Latino Outdoors  
Literacy for Environmental Justice  
Marine Science Institute  
Monterey Bay Aquarium  
Natural Resources Defense Council  
NatureBridge  
North American Association for Environmental Education  
Oak Park Unified School District  
Occidental Arts & Ecology Center  
Outdoor Afro  
Outward Bound  
Pathfinder Ranch  
Plastic Pollution Coalition  
Rialto Unified School District  
San Francisco Botanical Garden  
San Francisco Unified School District Science Department  
San Francisco Zoo  
San Joaquin County Office of Education  
San Mateo County Office of Education  
Santa Cruz County Office of Education  
State Education and Environment Roundtable  
Surfrider Foundation  
Ten Strands  
TreePeople  
Trust for Public Land  
Upstream  
West Contra Costa Public Education Fund  
Wishtoyo Chumash Foundation  
YMCA San Francisco  
Youth Outside  
Zero Waste USA  
Several individuals

**OPPOSITION**

None received

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