Foreword

2016 Science Framework

FOR CALIFORNIA PUBLIC SCHOOLS
Kindergarten Through Grade Twelve

Adopted by the California State Board of Education
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To view the remaining sections of the 2016 California Science Framework on the CDE website, go to:
https://www.cde.ca.gov/ci/sc/cf/cascienceframework2016.asp

Items in this document that relate to crosscutting concepts are highlighted in green and followed by the abbreviation CCC in brackets, **[CCC]**, with a number corresponding to the concept. The same items that correspond to the science and engineering practices are highlighted in blue and followed by the abbreviation SEP in brackets, **[SEP]**, with a number corresponding to the practice.

The Web links in this document have been replaced with links that redirect the reader to a California Department of Education (CDE) Web page containing the actual Web addresses and short descriptions. Here the reader can access the Web page referenced in the text. This approach allows CDE to ensure the links remain current.

Foreword

This new *Science Framework for California Public Schools: Kindergarten Through Grade Twelve* supports the goals of the California Next Generation Science Standards (CA NGSS). Much like recent curriculum frameworks in other subject areas, this framework includes an emphasis on student inquiry. The classroom teacher serves as a facilitator to help students investigate scientific phenomena and principles of engineering through experiments and other activities that foster critical thinking. The framework provides guidance to educators on how to address the standards through the use of classroom snapshots, descriptive lesson vignettes, and examples of engineering-based projects.

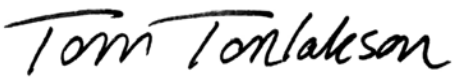
Building upon the CA NGSS presents a new approach to the teaching of science in California public schools. The new standards seek to actively engage students through a number of instructional shifts. The CA NGSS are organized around performance expectations for students, each of which reflects three dimensions of science learning: Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts. The content and skills within the standards build on students' existing experiences and interests to help them investigate and solve real-world problems.

California's science framework includes multiple options for the implementation of the CA NGSS in middle and high school. In middle school, the framework presents two models: a preferred integrated model that interweaves the various science disciplines, and a discipline-specific model that focuses on a particular discipline of science at each grade level. Both models cover the same performance expectations for middle school, differing only in how grade-level sequence of content is presented. The framework outlines a three-course model and a four-course model for high school science. Here, too, both models cover all of the performance expectations in the CA NGSS for high school, but the different models give districts flexibility in the implementation of their instructional programs.

This framework also includes strategies to help teachers ensure that their students become proficient in the content and skills outlined in the CA NGSS. It is designed to meet the needs of California's diverse student

population, and it provides extensive support for English learners, students with disabilities, and students with special needs. The framework emphasizes the importance of supporting girls' interest in science, technology, engineering, and mathematics fields. Other chapters cover guidelines for professional learning that support high-quality instruction, examples on how to use formative assessment to guide instruction, and instructional strategies for implementing the CA NGSS and twenty-first-century skills in California classrooms.

California's latest science framework will help students to become the leaders in science and technology that our globalized economy and pluralistic society demand. So many of the challenges we face today—from the changing global climate and strains upon our environment to the social implications of rapid technological change—are intertwined with science. By enabling students to become scientifically literate and technologically proficient learners, this framework will prepare students for their role as engaged citizens in our twenty-first-century democracy.



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