

EXECUTIVE SUMMARY

The Needle Is Moving in California K–8 Science

Integration with English Language Arts, Integration of the Sciences, and Returning Science as a K–8 Core Subject



NGSS Early Implementers Initiative: Bringing science to life as a core subject in K–8 classrooms

A diverse group of eight California school districts and two charter management organizations is actively implementing Next Generation Science Standards in grades K–8. These NGSS Early Implementers are supported by the K–12 Alliance at WestEd, and work in partnership with the California Department of Education, the California State Board of Education, and Achieve. The S. D. Bechtel, Jr. Foundation commissions WestEd’s STEM Evaluation Unit independently of the K–12 Alliance to evaluate the initiative in the eight public school districts. This document summarizes the content and findings of the first evaluation report in the initiative series, published in October 2016. The second evaluation report, published in October of 2017 and titled *The Synergy of Science and ELA*, more deeply examined the positive relationship between science and English Language Arts; a report slated for release fall 2018/winter 2019 will feature an update and lessons from implementation of the integrated model for middle school instruction. Access the complete series and learn more at K12alliance.org.

Three High-Leverage Implementation Strategies

This first Early Implementers Initiative evaluation publication discusses one of the major shifts required by the Next Generation Science Standards (NGSS), namely the shift to integrated instruction. The integration of science and English language arts (ELA) is the focus of the first main section, and the integration of the science disciplines (i.e., earth and space, life, and physical) inherent in the middle school integrated model is the focus of the second. Also discussed in the third and final section, as well as throughout this publication, is another fundamental shift: the need to teach science in the first place. In order for any of the targeted shifts of the NGSS to take place, K–8 teachers must devote time to teaching science on a regular basis.

Main findings in the three sections of this report are briefly described below.

Science as a Vehicle for Teaching Common Core ELA

Based on summer 2016 data collection, this section describes how the Early Implementers Initiative is empowering elementary school teachers in the eight districts to teach

science in relation to Common Core State Standards (CCSS) subjects, particularly ELA. The section also describes how teachers are reacting to and implementing the tools and strategies offered by the Early Implementers Initiative:

- › NGSS-aligned science is so engaging for students that teachers are willing, and often eager, to invest the time and effort required to plan and carry out new lessons, even as they deal with added responsibilities related to the CCSS.
- › Teacher Leaders report improved understanding of how the NGSS relate to the CCSS after only one year of participation with the Initiative.
- › The two Early Implementers Initiative tools and strategies used most by teachers in their own classrooms (i.e., beyond the Initiative activities) are science notebooks and questioning strategies that facilitate student discourse and sense-making.
- › Teachers reported spending more time on science integrated with ELA in Year 2 of the Initiative than Year 1.

Update on the Middle School Integrated Model

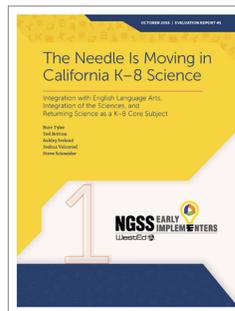
The California State Board of Education (SBE) has adopted the integrated model as the “preferred model” for California middle schools. This section outlines the reasons for this decision, highlights changes that will need to be made whether a district chooses the integrated or discipline-specific model, and shares considerations for making the transition to the new model, such as:

- › Developing a detailed plan to ensure that no student will be short changed during the transition period.
- › Providing professional learning on integrated science for teachers and administrators.
- › Using a “coordinated model” as a bridge from discipline-specific to integrated science.

Returning Science as a K–8 Core Subject

One explicit goal for each participating district of the Early Implementers Initiative is to make science a core subject. This section discusses what it means for science to be a core subject and ways that districts have made progress on making science a core subject, including:

- › At the elementary level, the worst-case scenario of little or no science has nearly been eliminated among the Initiative’s hundreds of Teacher Leaders; and there are some increases underway in science instruction minutes.
- › Project Directors and Core Leadership Teams both report that science instruction now has a higher priority in their districts.
- › Core Leadership Teams report that increases in science instruction time also are beginning among district science teachers at large, not just among the Initiative’s Teacher Leaders.
- › Not surprisingly, the most common factor cited as prompting increases in science instruction is the training and support of the Early Implementers Initiative.
- › Early Implementers Initiative districts have begun to make schools science-centered beyond the formal science instruction by reaching out to parents and informal science education partners.



Read the full report, access other evaluation reports and resources, and learn from NGSS Early Implementers at [K12alliance.org](https://www.k12alliance.org).

