

EXECUTIVE SUMMARY

Next Generation Science Standards in Practice

Tools and Processes Used by the Early Implementers of the NGSS



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 special report features techniques and methods used by early implementers of the NGSS. It accompanies the set of evaluation reports being generated through the Early Implementers initiative. Access the complete series and learn more at K12alliance.org.

This report describes a number of resources, protocols, strategies, and practices that NGSS Early Implementers are using to conduct Next Generation Science Standards instruction.

It presents items that other districts and schools can learn from, draw on, and adapt to support NGSS implementation in their contexts. Topics include:

NGSS lesson planning

- › Teacher Learning Collaborative (an approach that includes planning instruction, teaching, and analyzing student work)
- › Phenomena-Based, Three-Dimensional Conceptual Flow
- › Choosing Phenomena
- › "5E" Lesson Planning (based on the instructional model used by Early Implementers: engage, explore, explain, elaborate, evaluate)
- › Learning Sequences

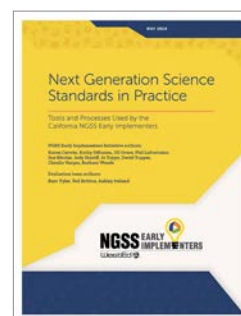
NGSS instruction

- › Looking at Student Work
- › Questioning Strategies that Promote Student Discourse
- › Sense-Making Student Notebooks

Administrator support for NGSS implementation

- › Principal Academy
- › Walk-Through Protocol
- › Evidence of Learning Protocol

Some tools and processes were developed specifically by and for Early Implementers. Others were adapted from existing resources used by the K–12 Alliance for many years as vehicles for empowering the kinds of effective science teaching and learning that are recommended by research. In some instances, the K–12 Alliance adapted well-regarded materials or methods from other sources.



This report was compiled by initiative evaluators and staff of the K–12 Alliance. Review the complete document, access evaluation reports, and learn from NGSS Early Implementers at K12alliance.org.