

Strengthening Science Education and Environmental Literacy in California's New Era Of Local Control: The Toolkit

September 2016

For School Districts:

ASSESSING THE NEED TO BUILD DISTRICT CAPACITY TO SUPPORT SCIENCE AND IMPLEMENTATION OF THE NEXT GENERATION SCIENCE STANDARDS (NGSS)

This document provides a set of questions to ask of districts and schools to better understand their capacity to support science and Next Generation Science Standards (NGSS) implementation through their Local Control and Accountability Plan (LCAP) in a systematic way. These questions can be used by district leaders and teachers to assess and identify key district science program capacities and provide a means to engage administrators, staff and teachers in dialogue about efforts and resources needed to support strong implementation of the NGSS.

Key Capacity 1: Vision and Reality

- Does the district have a widely shared common vision for good science teaching and learning?
- Does the district have a widely shared programmatic vision for its K-12 science program?
- Does the district have a plan for the implementation process of science/NGSS?
- Does the district know what kind of science instruction is happening in classrooms?
- Does the district currently have science programs that use the environment as a context for teaching science?
- Does the district have a system in place for gathering and using data to assess the quantity and quality of science teaching and learning? If so, how is it being used?
- What resources and strategies is your district using to ensure the shifts envisioned by NGSS will occur in every classroom?
- What prior experiences is the district drawing upon to help ensure successful implementation of NGSS? What gaps are being anticipated in the district's ability to reach implementation goals?
- What is the district timeline to roll out NGSS, what are the milestones and how will progress be monitored towards those milestones?

Key Capacity 2: Leadership

- Does the district have a science "point person" at the district office – someone with the time, knowledge and energy to ensure science is being addressed across the district?
- Does the district have a Science Leadership Team that is responsible for furthering improvement of science in the district? Does this include teacher leaders from elementary, middle, and secondary?
- Does the district have science classroom and/or science school "exemplars" that can serve as visible examples of high-quality science and science expertise for other teachers and schools?
- Does the district have support and active involvement to improve science from different administrative levels of the district, including the superintendent, assistant superintendent, director of curriculum and instruction, school board members and principals?



- In what ways is the district building partnerships with and accessing support from science experts and community leaders, such as scientists, museums, community based providers of science and environmental education, higher education institutions, and business and civic leadership in the community that can advocate for science?
- How is the district determining the needs and roles of key players (e.g., district administrators, teacher leaders, site administrators, parents, afterschool educators, etc.) in NGSS implementation?
- How are parents and key stakeholders in the community being engaged to support science and build momentum for a shift that is truly best for students?

Key Capacity 3: Instructional Improvement

- What is the level of knowledge and understanding regarding NGSS in the district at this point?
- Curriculum and instructional materials
 - Does the district have well-established curricular expectations for science and environmental literacy (what is to be taught, how it is to be taught, and how much is to be taught)? Does every school site know these expectations? Is every school site meeting these expectations?
 - Does the district have instructional materials that provide students with a wide range of experiences that support science and environmental literacy? Do teachers use these materials regularly? If not, why?
 - How will the district ensure existing and new instructional materials and resources are aligned to NGSS?
- Professional learning
 - Does the district offer ongoing support to all K-12 teachers that help them to improve their science instruction? More specifically, support that helps teachers use science instruction as a context for language development and enhanced literacy skills (reading, writing, speaking and listening)?
 - Does the district offer ongoing support to all school site leaders that help them to identify what high-quality science teaching looks like, in order to further support teachers to get better?
 - How will the district build the capacity of school leaders and district office leaders to better understand what is high-quality NGSS teaching and learning?
- Environmental literacy
 - Is the district using environmental education strategies to support science learning and engagement? Are there environmental learning opportunities available on campus (e.g., school gardens) and is there access to outdoor spaces and off-campus facilities (e.g., residential outdoor science schools and nature centers) to support and reinforce science learning for all students? How are these strategies being developed to ensure teaching and learning aligns to the NGSS?
- What role will technology play in the teaching and learning of science/NGSS? (e.g., what is available, what is adequate, what is missing?)
- What additional supports will teachers, schools, and district administrators need to implement NGSS?

Key Capacity 4: District Policies and Priorities

- Has the district made the improvement of science learning a priority and expressed that priority clearly with policies, finances, and support?
- Has the district reviewed and addressed its own formal testing practices to better support high-quality science and the instructional shifts inherent in NGSS?
- How is the district integrating science with other existing district plans, programs and initiatives that focus on ensuring students are prepared for college and careers upon high school graduation (e.g., Common Core, English Language Learner support program, environmental education)? What mechanisms already exist that will help NGSS to be fully integrated into the existing plans of the district?
- In what ways is the district allocating the financial resources necessary to implement science/NGSS? What modifications need to be made to the district's budget?
- In what ways will the district identify and resolve barriers that may stand in the way of providing access to high-quality science and environmental learning opportunities to all students?