

## California's Next Generation Science Standards Fact Sheet

### Background

Our state needs people with STEM (Science, Technology, Engineering and Math) skills. STEM jobs comprise 20 percent of all US jobs and are expected to keep growing faster than overall employment. In California, STEM jobs now comprise more than a quarter of all new job openings, including many of the highest paid occupations. Our students should be prepared for the career and economic opportunity these jobs offer.

More than that, science is central to how we understand and make sense of the world around us. The explosion of digital technology, breakthroughs in understanding DNA, and improvements in our knowledge of the environment are just a few examples of how science has changed the way we live. Students who do not go into a science field still benefit from expanded knowledge of the world and from the skills of approaching problems in a logical way.

All of our students deserve a strong science education, learning the most current science concepts taught by the most effective methods. Effective science courses prepare students for productive futures, no matter what their educational and career path will be.

California's new state standards for science, called the California Next Generation Science Standards (CA-NGSS), do just that.

### What Are the CA-NGSS?

The CA-NGSS are a new set of science standards (learning goals) that are based on research on how students learn best. The CA-NGSS require science and engineering to be taught in every grade K-12 to build understanding and skills systematically year on year.

The CA-NGSS call for teachers to facilitate more student-centered learning that enables students to think on their own, problem solve, communicate, and collaborate—in addition to learning important scientific concepts.

### Why Are the CA-NGSS Important?

When students know how scientists and engineers do their work and have opportunities to carry out investigations and design solutions, they enjoy their science classes more and understand science better. The new science standards ask students to think and behave like scientists and engineers, trying different ways to solve problems and working on teams.

California's Next Generation Science Standards also hold promise to reduce the opportunity gap for girls and for Latino, African American, low-income students and others who have been historically underrepresented in science education and careers. Research tells us that students in underserved communities often believe what they are taught is irrelevant to their futures, making that a barrier to learning. By incorporating more hands-on, real life applications, CA-NGSS will help all students including girls, Latinos, African-American and low income students do well in science classes and see themselves as having the talent and ability to be scientists and engineers.

Finally, the CA-NGSS ensure early exposure to science and engineering. Young children are naturally inquisitive and much more capable of abstract reasoning than we previously thought. When we introduce elements of scientific thinking and reasoning in earlier grades through the CA-NGSS, it helps foster the deeper understanding that can lead to greater success and

persistence in science in later years. This early exposure to science is especially important for young children whose families and communities are unable to provide much access to science learning outside of school.

### What Is the Timeline?

California's Next Generation Science Standards were adopted by the State Board of Education in fall 2013. The state timeline allows for a gradual transition, with schools expected to be fully-transitioned to teaching based on the CA-NGSS for the 2018-19 school year. Between now and then, the California Department of Education (CDE) will be releasing new guidance to aid educators in developing curriculum and selecting instructional materials.

### What Can I Do to Support High-Quality Implementation at My School?

Implementing new standards takes time—especially to do it right. Patience and persistence will be required. Talk to your school and district leaders to find out what the district's plans are for implementation. See if the district's Local Control and Accountability Plan (LCAP) puts resources toward implementation of the new science standards. You can discuss with your student's teacher how they plan to implement the CA-NGSS in the classroom. Take a look at the standards by visiting the [science curriculum section](#) of the CDE website and explore some of the [introductory videos](#) available online. You can find links to more introductory information at [www.CA4NGSS.org](http://www.CA4NGSS.org).

*Prepared for the CA4NGSS by the CDE Foundation, CSTA, and Children Now. Content represents coalition member input but does not reflect each member organization's formal endorsement. Visit [CA4NGSS.org](http://CA4NGSS.org) for more information.*



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