

Next Generation Science Standards Fact Sheet for Parents

The need for high-quality science education—beginning at the very earliest grades—is more essential now than ever before. Students need the kind of preparation that not only supports their learning now, but also gives them the tools and skills necessary to succeed in a rapidly and continuously changing world. The Next Generation Science Standards (NGSS) are a key component toward advancing high-quality teaching and learning in science.

Overview

- It has been more than 17 years since the National Research Council and the American Association for the Advancement of Science produced their reports from which most state science standards are based. Since then, there have been major advances in science and our understanding of how students learn science. Our students deserve to learn the most current science available taught using the most effective methods.
- The NGSS are a new set of K–12 science standards developed by states, for states. The NGSS identify science and engineering practices and content that all K–12 students should master in order to prepare for success in college and 21st-century careers.
- The NGSS were built upon a vision for quality science education for ALL students—not just a select few.
- The NGSS were benchmarked against countries whose students perform well in science and engineering fields, including Finland, South Korea, China, Canada, England, Hungary, Ireland, Japan, and Singapore.
- The NGSS are NOT curricula. Standards articulate what students need to know and be able to do by the end of each grade level. Districts, schools, and teachers will determine their own curriculum, including what is taught throughout the year, and how it is taught.

How will my child's learning experience be different?

- The NGSS have the potential to revolutionize science education. Not only do they incorporate the most current research and findings in science, they also include the most current research regarding how students best learn science.
- The NGSS allow students to think of science learning not as memorization of disconnected facts, but as a holistic understanding of integrated and interrelated concepts. This is one of the biggest shifts in the NGSS compared to previous sets of science standards.
- The NGSS require students to provide evidence of their learning and will equip students with the critical thinking and analytical skills they need to be successful in college and to compete for today's most rewarding jobs.
- The NGSS connect scientific principles to real-world situations, allowing for more engaging and relevant instruction that clearly covers complicated topics.
- The NGSS better support educators to make science accessible and interesting to ALL students by connecting learning over multiple years, across disciplines and grades and by applying crosscutting concepts to deepen students' understanding of core ideas.
- The NGSS introduces science at an earlier age when children are asking lots of questions about the world and how it works. Most kids love science because they are inherently curious and it is an opportunity for them to have fun and learn at the same time.

Why science education matters now more than ever

- Issues related to science and engineering are all around us in our daily lives. The solutions and innovations human beings can develop to make the world a better place through scientific and engineering knowledge and discovery are endless.
- Global issues like medical research, nutrition, waste disposal, infrastructure development, telecommunications, and cyber-security all require science-based solutions and a basic knowledge of

scientific principles. Today's students need the right foundation to tackle long-term and complex problems that face our generation and future generations.

- Students will face unprecedented competition in the workforce not only within their home state and country, but also globally.
 - By 2015, nearly 60% of the new jobs being created will require skills currently being mastered by only 20% of the population, according to a recent report from the American Society for Training and Development.¹
 - According to the same report, job skills in STEM—science, technology, engineering and math—are among the skills experiencing the greatest increase in demand. In 1991, fewer than 50% of U.S. jobs required skilled workers. But by 2015, 76% of all newly created U.S. jobs will require highly-skilled workers with some proficiency in STEM.
- Of course, science education is about more than building a strong future workforce; it affords students the means to gain resiliency, critical thinking and analytical skills, and the knowledge they need to become capable and informed citizens in a technology-driven world.

Background

The Next Generation Science Standards (NGSS) were developed through a collaborative state-led process. Twenty six states volunteered to work with the 41 members of the writing team to lead the development of the standards. The science supervisors from these state education agencies worked with the writers to provide feedback from their state broad-based committees. These state committees consisted of representatives from the K-12 education, education policy, scientific, post-secondary education, and informal science communities. In addition, a critical stakeholder team comprised of hundreds of members representing K-12 educators, administrators, higher education faculty, scientists, engineers, business leaders, policymakers, and key organizations provided confidential feedback at critical points in the development process. The draft standards also received comments from more than 10,000 individuals during two public review periods. These comments came from teachers, school and school district discussion groups, scientific societies, parents, and students. The writers used this feedback to make substantial revisions to each draft. The final standards were released in April 2013. As of December 2014, 13 states and the District of Columbia have adopted the NGSS as their state science education standards: California, Delaware, Illinois, Kansas, Kentucky, Maryland, Nevada, New Jersey, Oregon, Rhode Island, Vermont, Washington and West Virginia.

¹ "Bridging the Skills Gap," American Society for Training and Development (2010).
<http://www.astd.org/%20About/~media/Files/About%20ASTD/Public%20Policy/%20BridgingtheSkillsGap2010.pdf>