Iowa Science Standards

Fact Sheet for Parents and Community Members

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. Iowa's new science standards are a key part of advancing high-quality teaching and learning in science.

Overview

- Iowa recently adopted new science standards that set expectations for what all students in kindergarten through 12th grade should know and be able to do. The new standards will be phased in beginning with the 2016-17 school year.
- The new science standards 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 standards are not a curriculum. Standards articulate what students need to know and be able to do. 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?

- Iowa's science standards 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 science standards 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 new science standards compared to previous sets of science standards.
- The science standards 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 science standards connect scientific principles to real-world situations, allowing for more engaging and relevant instruction that clearly covers complicated topics.
- The science standards 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 science standards introduce science at an earlier age when children are asking a lot 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 Iowa and nationally, 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 mathematics) 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.
- 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

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.

Iowa's new science standards were adopted by the State Board of Education in August 2015 based on a recommendation from an Iowa review team that incorporated scientific expertise and broad public input into a transparent process.

The Iowa review team recommended using the Next Generation Science Standards as the basis for Iowa's science standards. Twenty-six states, including Iowa, led the development of the Next Generation Science Standards, which all states can consider adopting and adapting to meet their needs. The standards were built upon a vision for quality science education for all students, not just a select few. They 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.

In Iowa, the Next Generation Science Standards are known as Iowa's science standards because they have been reviewed, vetted and modified by Iowans. The review of science standards was prompted by Governor Branstad's Executive Order 83, which called for an ongoing review of the state's academic standards. The goal of the review is to continually improve Iowa's standards and to ensure they are the right fit for the state.

[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