



## Science Education for a New Generation

### *Why the Framework and Next Generation Science Standards are Needed: A Logical Argument*

#### **What is the Framework?**

The Framework is a document that outlines a broad set of expectations for science and engineering education in grades K-12. It is the first of a two-stage process to produce Next Generation Science Standards (NGSS) for voluntary adoption by states. The Framework describes a vision for science education that goes beyond a simple listing of content which students are expected to learn. The Framework establishes a vision that integrates practices of science and engineering and broad crosscutting ideas, not limited to one area of science, with a number of truly important core ideas in science.

#### **Need for a Framework**

The Framework is designed to help realize a vision for science and engineering education in which students, over multiple years, actively engage in science and engineering practices and apply crosscutting concepts to deepen their understanding of the core ideas in scientific disciplines. This vision applies to ALL students, not just those who pursue careers in science, engineering, or technology, or those who continue on to higher education.

#### **Impact on Science Education**

- Prepare students for their roles as citizens in a technology rich and scientifically complex world.
- Engage students in scientific practices to develop explanations and models.
- Provide the foundation for the Next Generation Science Standards.
- Lead to the development of related professional development materials, assessments, and curriculum/instructional programs.
- Promote uniformity of science standards across multiple states.

#### **Impact on Students**

- Knowledge of science and engineering is required to make informed everyday decisions, whether it involves making choices among medical treatment options, the purchase of energy-efficient appliances, or simply engaging in major public policy discussions.
- By the time students graduate from high school, they should have sufficient knowledge of science and engineering to be critical consumers of scientific information related to their everyday lives, and to be able to continue to learn about science throughout their lives.
- This goal applies to all students, not just those who pursue higher education or careers in science, engineering, or technology.
- The NGSS are being developed to equip students with the ability to apply central ideas and skills in science, including the 21<sup>st</sup> Century skills of critical thinking, communication, collaboration, and creativity, across science disciplines to understand problems, generate theories, and reach conclusions.

#### **Opportunity for Broad-based Collaboration**

The NGSS represents an unprecedented opportunity for the states to come together around a voluntarily adopted set of science education standards. The state efforts are broad-based and include partners beyond state education department employees: teachers, higher education faculty, and the business community. Previously, each state acted as an individual, both in terms of standards and assessments. The NGSS provides the opportunity to share the load and move forward together.

#### **Public Support for Science Education**

Science is central to the life of every American. It is imperative that students in our public schools get the science education they need to prepare them to make informed decisions in their everyday lives.

- 66% of voters nationwide would prefer common science standards.
- 45% of voters identified taking care of the nation's financial health as the nation's top priority for improving America's competitiveness. 37% of voters identified a world-class education in Math and Science as the next most important priority for achieving America's competitiveness.
- 87% of respondents were in favor of the implementation of common internationally benchmarked Science Standards, with 54% strongly supporting implementation.

This provides VERY strong support for the adoption of NGSS. Nationally Science Education/STEM is seen as a pathway to global competitiveness and a component of a rigorous college and career readiness curriculum.

#### **Where Can I Find the Framework?**

[www.nap.edu/catalog.php?record\\_id=13165](http://www.nap.edu/catalog.php?record_id=13165)

Produced by the Council of State Science Supervisors [www.csss-science.org](http://www.csss-science.org)