

Next Generation Science Standards

Introductions

The Next Generation Science Standards (NGSS) are designed to provide foundational knowledge and skills for all students to develop proficiency in science. The *Project 2061's Benchmarks for Science Literacy* and the follow up work, *A Framework for K-12 Science Education* were used as the core of the standards to determine appropriate content and process skills for students. The integration of rigorous content and application reflects how science and engineering are practiced in the real world.

Science and engineering practices (SEPs) and crosscutting concepts (CCs) are designed to be taught in context, not in a vacuum. The Next Generation Science Standards encourage integration with multiple core concepts throughout each year.

Science concepts build coherently across K-12. The emphasis of the NGSS is a focused and coherent progression of knowledge from grade band to grade band, allowing for a dynamic process of building knowledge throughout a student's entire K-12 science education.

The NGSS focus on a smaller set of DCIs that students should know by the time they graduate from high school, focusing on deeper understanding and application of content.

Science and engineering are integrated into science education by raising engineering design to the same level as scientific inquiry in science classroom instruction at all levels and by emphasizing the core ideas of engineering design and technology applications.

The NGSS content is focused on preparing students for college and careers. The NGSS are aligned by grade level and cognitive demand with the English Language Arts and Mathematics Common Core State Standards. This allows an opportunity both for science to be a part of a child's comprehensive education and for an aligned sequence of learning in all content areas. The three sets of standards overlap and are reinforcing in meaningful and substantive ways.

The NGSS drive instruction. Hands-on, student centered, and phenomenal based approaches should be the emphasis of instruction. The standards are a required minimum set of expectations that show proficiency in science. However, instruction can extend beyond these minimum expectations to meet student needs. At the same time, these standards set a maximum expectation on what will be assessed by the Delaware Assessment System.

The middle and high school standards are recommended at the following grade levels based on research, assessment concerns, and feedback from the following groups of leaders: NextGen Teacher Leaders, secondary science teachers from LEAs, Department of Education, Delaware Science Coalition, Delaware Math Coalition, Federal Agencies, Delaware PTA, higher education and informal educators.

The Delaware Next Generation Science Standards Review Committee Members

The Delaware NGSS Review Committee provided input on multiple drafts versions of the grade level standards. The committee met both face-to-face and virtually. Members of the committee volunteered their time to assure that the NGSS reflect the needs and desires of Delaware. The committee chairs thank members of the Delaware Next Generation Science Standards Review Committee for their efforts during this process.

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Dagher	Zoubeida	University of Delaware
Densler	Sharon	Capital School District
Hodges	Terri	Delaware PTA
Kleinstuber	Kimberlee	Indian River School District
Kutch	Michelle	Brandywine School District
McCrae	April	Delaware Department of Education
McGrath	Edward	Red Clay School District
Mead	Tonyea	Delaware Department of Education
Montano	Eugene	Capital School District
Moyer	John	Delaware Department of Education
Mulvena	Kim	Colonial School District
Napoli	Frank	NOAA
Pragoff	David	Delaware Nature Society
Revels	William	Indian River School District
Riser	Jamila	Delaware Mathematics Coalition
Trauth-Nare	Amy	University of Delaware
Vasta	Rita	New Castle Vo-tech School District
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