

# Iowa Science Standards

## Overview

In order to ensure our current K-12 students are scientifically-literate, global citizens who are prepared for college or career success, Iowa adopted new Science Standards that reflect what students in grades K-12 should know and be able to do as a result of instruction. The new science standards reflect our state’s emphasis on giving all students the real-world knowledge and skills needed to be ready for success in college and in the workforce, regardless of the career paths they choose. These real-world connections will involve students engaging with scientific phenomena and design solutions to problems. In addition, the standards focus on deeper understanding of content and build coherently from kindergarten through grade 12 and the standards provide clear opportunities for clear connection to literacy and mathematics.

Recognizing science is not just a body of knowledge that reflects current understanding of the world; it is also a set of practices used to establish, extend, and refine that knowledge, Iowa’s Science Standards are written as three-dimensional performance expectations that include three-equally important, distinct dimensions to learning science – science and engineering practices, crosscutting concepts, and disciplinary core ideas. Science and engineering practices and crosscutting concepts are used to teach core ideas all year. This is often referred to as three-dimensional (or 3D) learning.

Science & Engineering Practices (SEP)	Disciplinary Core Ideas (DCI)	Crosscutting Concepts (CCC)
Asking questions and defining problems	Physical Science	Patterns
Developing and using models	Life Science	Cause and Effect
Planning and carrying out investigations	Earth and Space Science	Scale, proportion, and quantity
Analyzing and interpreting data	Engineering, Technology, and Application of science	Systems and system models
Using mathematics and computational thinking		Energy and Matter (flows, cycles, and conservation)
Constructing explanations and designing solutions		Structure and Function
Engaging in argument from evidence		Stability and Change
Obtaining, evaluating, and communicating information		



## Additional Considerations:

- The science standards are grade-level specific and use an integrated science approach K-8.
- All standards are intended for all students.
- Educators have the flexibility to arrange the standards in any order within a grade level (and within high school course offerings) to suit the needs of students and science programs.
- Each performance expectation includes a practice, a cross-cutting concept and a disciplinary core idea. The partnering of a Science and Engineering Practice with a particular Disciplinary Core Idea and Crosscutting Concept does not predetermine how the three are linked in curriculum, instruction, or classroom assessment. However, all three dimensions of the standard are equally important; therefore, to be considered aligned, units of instruction should provide opportunities for students to develop a deep understanding of science content by engaging in multiple science and engineering practices throughout units of instruction and by using various crosscutting concepts as lenses through which to consider scientific phenomena.
- Educators will need to use both the Iowa Science Standards and their foundational boxes to make curricular and instructional decisions.
  - [How to Read the Science Standards](#)

