

Shifts in Science Instruction		
Shift 1	Interconnected Nature of Science and the Real World	Given the importance of science and engineering in the 21st century, students require a sense of contextual understanding with regard to scientific knowledge, how it is acquired and applied, and how science is connected through a series of concepts that help further our understanding of the world around us. Student performance expectations have to include a student's ability to apply a practice to content knowledge. Performance expectations thereby focus on understanding and application as opposed to memorization of facts devoid of context.
Shift 2	Focus and Coherence	The same ideas or details are not covered each year. Rather, a progression of knowledge occurs from grade band to grade band that gives students the opportunity to learn more complex material, leading to an overall understanding of science by the end of high school. Historically, science education was taught as a set of disjointed and isolated facts. The Framework and the NGSS provide a more coherent progression aimed at overall scientific literacy with instruction focused on a smaller set of ideas and an eye on what the student should have already learned and what they will learn at the next level.
Shift 3	Deeper Understanding	It is important that teachers and curriculum/assessment developers understand that the focus is on the core ideas—not necessarily the facts that are associated with them. The facts and details are important evidence, but not the sole focus of instruction.
Shift 4	Science and Understanding	Engineering and technology are integrated into the structure of science education. This integration is achieved by raising engineering design to the same level as scientific inquiry in classroom instruction when teaching science disciplines at all levels and by giving the core ideas of engineering and technology the same status as those in other major science disciplines.
Shift 5	College Career and Citizenship Readiness	There is no doubt that science and science education are central to the lives of all Americans. Never before has our world been so complex and science knowledge so critical to making sense of it all. When comprehending current events, choosing and using technology, or making informed decisions about one's healthcare, understanding science is key. Science is also at the heart of the United States' ability to continue to innovate, lead, and create the jobs of the future. All students, no matter what their future education and career path, must have a solid K–12 science education in order to be prepared for college, careers, and citizenship.
Shift 6	Alignment to Common Core	The science standards and the Common Core Standards (math and ELA/Literacy) overlap in meaningful and substantive ways and offer an opportunity to give all students equitable access to learning standards.