



Understanding the Revised Science Graduation Requirements

On October 8, 2025, the State Board of Education readopted [New Jersey Administrative Code 6A:8: Standards and Assessment](#) with revisions. To fulfill the revised graduation requirements, students must complete a minimum of 15 credits in evidence-based science courses. These courses must ensure proficiency with the full range of the NJSLS-S for grades nine through 12 and be taught by appropriately certified educators. This document identifies the revisions and provides insights into their potential impact on high school science curriculum.

Clarifications and Key Changes of the Revised Graduation Requirements

Minimum Credit Requirements

The revision of the administrative code emphasizes the requirement of “**at least 15 credits** in evidence-based science courses that develop proficiency with the full range of grades nine through 12 NJSLS for science.”

Evidence-Based Science Courses

The literature is clear; science should be taught as it is practiced—interconnected and applied in real-world contexts. In **evidence-based science courses**, students use science and engineering practices, disciplinary core ideas, and crosscutting concepts to deepen their understanding of phenomena and to address design challenges.

For a State-endorsed diploma, district boards of education are required to develop, adopt, and implement local graduation requirements that **prepare students for success in postsecondary degree programs, careers, and civic life**. It is essential for today’s students to learn about science and engineering in order to make sense of the world around them and participate as informed members of a democratic society. The skills and ways of thinking that are developed and honed through engaging in scientific and engineering endeavors can be used to engage with evidence in making personal decisions, to participate responsibly in civic life, and to improve and maintain the health of the environment, as well as to prepare for careers that use science and technology.

Teachers provide guidance in many ways as students learn via science investigation and engineering design. They select and present interesting phenomena and challenges; facilitate connections between relevant core ideas and crosscutting concepts; communicate clear expectations for student use of data and evidence; provide opportunities for students to communicate their reasoning and learn from formative assessment; set the tone for respectful, welcoming, and inclusive classrooms; and provide coherence and linkages between topics, units, and courses.

Engaging students in science investigation and engineering design is a strategy that can link student interest to academic learning, and this interest can increase motivation. New standards alone do very little to improve student learning, but they offer an opportunity to make significant and lasting changes to the structure and goals of instruction. Improving student science learning requires shifting instruction to focus on students' reasoning about the causes of phenomena and using evidence to support their reasoning. Investigation and design can drive this shift.

The shift comes in five parts:

1. Engaging students in science performances and engineering design challenges during which they use each of the three dimensions to make sense of phenomena
2. Teachers valuing and cultivating students' curiosity about science phenomena and interest in addressing unmet needs
3. Developing student-centered culturally relevant learning environments
4. Students valuing and using science as a process of obtaining knowledge supported by empirical evidence
5. Students valuing and using engineering as a process of using empirical evidence to create designs that address societal and environmental needs.

The Framework-inspired standards are consistent with each of these shifts for science teaching and learning (NGSS Lead States, 2013 and NASEM, 2019).

Proficiency across the Full Range of NJSLS-S

The requirement in 6A:8-5.1(a)1.iii for every student to **develop proficiency with the full range of grades nine through 12 NJSLS for science** reiterates New Jersey Administrative Code 6A:8-3.1(a). This section of Administrative Code requires district boards of education to ensure that curriculum and instruction are designed and delivered in such a way that all students are able to demonstrate the knowledge and skills specified by the NJSLS.

Districts may need to evaluate their science programs of study to determine if all of the grades nine through 12 science performance expectations are taught in a coherent sequence of three or four evidence-based science courses. It is important to understand that the NJSLS-S specify the minimum benchmarks for scientific literacy in K-12 public schools. Districts may choose, based on local priorities, to add additional knowledge and skills in response to local priorities.

The [Grades 9–12 Model Curriculum Framework](#) provides an example of a coherent sequence of high school units and courses.

Districts may choose to create their own science curriculum. These [bundles](#) of performance expectations illustrate two additional ways to organize courses:

Conceptual Progressions Model

- [Course 1: Conceptual Progressions Model](#)
- [Course 2: Conceptual Progressions Model](#)
- [Course 3: Conceptual Progressions Model](#)

Modified Domains Model

- [Course 1: Modified Domains Model: Chemistry w/Earth and Space Science](#)
- [Course 2: Modified Domains Model: Physics w/Earth and Space Science](#)
- [Course 3: Modified Domains Model: Biology w/Earth and Space Science](#)

The removal of required courses provides districts with **greater flexibility** to design curriculum that better meets the needs of their students. Rather than focusing on topics included in traditional science courses, curriculum can be anchored in phenomena or design challenges that are authentic and relevant to students. For example, students could use the science and engineering practices, disciplinary core ideas, and crosscutting concepts to make sense of coastal erosion, urban heat islands, loss of oysters in the Barnegat Bay, or designing solutions to reduce the impacts of Delaware River flooding. In authentic ways, students would deepen their understanding of the Roles of Water in Earth’s Surface Processes (ESS2.C); Conservation of Energy and Energy Transfer (PS3.B); Structure and Properties of Matter (P1.A); Chemical Reactions (PS1.B); Energy in Chemical Processes (PS3.D); and Engineering, Technology, and Applications of Science (ETS).

This flexibility provides opportunities to leverage the expertise and passions of their educators. The flexibility also alleviates the pressure to fill hard-to-staff courses such as chemistry or physics. Educators who hold a science certification can teach a wide variety of courses, including interdisciplinary courses.

The removal of the course titles is also consistent with the blueprints for the Grade 11 NJSLSA-S, which is designed to assess student proficiency with the full range of the NJSLS-Science—including equal proportion of physical, life, and Earth and space sciences. ETS is integrated across the other three disciplines.

Certification Requirements for Educators

The learning experiences must be delivered by **educators who are appropriately certified** in the content area. This language makes it explicit that all students—including those with disabilities, students with a 504 plan, multilingual learners, and gifted and talented students—need science educators who are highly trained and highly skilled in teaching science. This eliminates, for example, the practice of pulling multilingual learners out of science classes for science instruction provided by a certified ESL/bilingual teacher, unless that educator also holds an appropriate science endorsement.

Conclusion

The revised graduation requirements represent a significant opportunity for New Jersey districts to reimagine high school science education. By removing prescriptive course titles and emphasizing evidence-based learning experiences across the full range of NJSLS-S, the revisions empower districts to design coherent science programs that are responsive to student interests and community contexts. This flexibility does not diminish expectations but rather elevates them, requiring all students to develop deep scientific literacy through authentic investigation and engineering design delivered by appropriately certified educators. As districts evaluate and redesign their programs, they can move beyond traditional disciplinary silos to create learning experiences that reflect how science is actually practiced—interconnected, applied, and driven by real-world phenomena—ultimately preparing students for postsecondary success and informed citizenship in an increasingly complex world.

Bibliography and Recommended Readings

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