

RIDE Readiness-Based Graduation Requirements:
Science Graduation Requirements
Guidance for Implementation & Resources
Revised January 2024

RIDE Readiness-Based Graduation Requirements: Science Graduation Requirement Guidance and Resources

Introduction:

The Rhode Island Department of Education (RIDE) is committed to ensuring all students have access to high-quality curriculum and instruction as essential components of a rigorous education that prepares every student for success in college and their career. On November 15, 2022, the R.I. Council on Elementary and Secondary Education approved for all R.I. students. RIDE’s adoption of Readiness-Based Graduation requirements presents an opportunity for reimagining science education in Rhode Island K-12 schools. Specifically, this has presented the opportunity to implement high-quality science pathways in middle and high schools to ensure all students graduate high school ready to create their own futures and to pursue their postsecondary goals.

A fundamental understanding of science is needed by all. By the end of high school, students should have gained sufficient knowledge to engage in public discussions on science-related issues, to be critical consumers of scientific information related to their everyday lives, and to continue to learn about science throughout their lives (NRC, [2011](#)). Rhode Island uses the Next Generation Science Standards (NGSS) to guide instruction in science. These standards outline the minimum science understanding for all students. Students who have aspirations to pursue competitive college programs and enter the STEM workforce will benefit from coursework that goes beyond the NGSS.

Students planning to enter the workforce after high school do not need a different nor a less rigorous curriculum than those planning to go to college ([Achieve, 2004](#)). The adoption of Readiness-Based Graduation Requirements set the default expectation that all students will complete 3 credits of science during their high school experience and that these 3 credits must include completion of at least 2 lab science credits.

Purpose of this document:

This document aims to provide guidance and resources for schools and districts implementing the new Readiness-Based lab science graduation requirement. This is supplemental to the [Science Curriculum Frameworks RIDE](#) released in Fall 2021 which is designed to provide consistent guidance around how to use standards to support the selection and use of High-Quality Curriculum Materials, evidence-based instructional practices, as well as valid and reliable assessments — all in an integrated effort to equitably maximize learning for all students.

Science Graduation Requirement Overview:

The adoption of Readiness-Based Graduation Requirements set the default expectation that all students will complete 3 credits of science that are aligned to the Next Generation Science Standards during their high school experience and that these 3 credits must include completion of at least 2 lab science credits.

Science Requirements for Graduation:

Table 1

Students entering 9th Grade in 2024-25 and subsequent school years must complete:

Must complete 3 credits during their high school experience. Students must complete:

- Three credits in science, two of these credits in lab science, that provide instruction that is aligned to the Next Generation Science Standards.
- Supplemental classes may be taken in addition to the three credits.

Approved Lab Science Credits

All students must complete at least 2 lab science credits to ensure students graduate college and career ready. Additionally, RIDE recommends students select courses in Biology, Chemistry, and Physics to ensure learning aligns with the Next Generation Science Standards. Lab science credits are earned in any science offering that includes hands-on experiences in the laboratory, classroom, or field. It provides students with ample and consistent opportunities to directly interact with natural phenomena or with data collected by utilizing tools, materials, and models. These experiences engage students in science and engineering practices such as planning investigations, analyzing and interpreting data, constructing explanations, and/or engaging in argument from evidence.

If you have a question regarding whether a locally offered science credit is aligned with the above definition of lab science, please reach out to ReimaginingHS@RIDE.RI.GOV for support.

FAQs and Resources

1. [Linked here is RIDE's Science webpage.](#) On this webpage you will find:
 - [R.I. Science Frameworks](#)
 - NGSS information and resources including
 - Next Generation Science Standards
 - NGSS Basics
 - Implementation
 - Professional Development
 - Curriculum Development
 - Assessment
 - Common Core Connections
 - Diversity and Equity
 - Instructional Resources
2. [How do the new high school graduation requirements impact the science credits students need to complete in their high school careers?](#)
 - Students will still be expected to complete 3 credits of science during their high school experience. The 3 credits *must now include* completion of two lab science credits. For example, a student could complete the following course sequence:
 - Biology (Lab) -> Chemistry (Lab) -> Physics (Lab)
 - The three credits that are earned should provide students comprehensive opportunity to engage in learning that meets (or exceeds) all of the NGSS Performance Expectations



(PE) for high school.

3. Which graduating class will be the first expected to meet these requirements?
 - The Class of 2028 will be the first graduating class expected to meet these requirements.
4. Why should students be required to complete two lab science credits?
 - Rhode Island’s public colleges and universities require students to have completed two lab sciences for general admission.
 - For students who wish to pursue specific majors in college/university, there may be additional admissions requirements in science.
 - For example: For URI Engineering majors students are required to complete 3 units of lab science, including 1 unit of physics.
5. What is the definition of “lab science”?
 - Lab science coursework includes hands-on experiences in the laboratory, classroom, or the field. It provides students with ample and consistent opportunities to directly interact with natural phenomena or with data collected by utilizing tools, materials, and models. These experiences engage students in science and engineering practices such as planning investigations, analyzing and interpreting data, constructing explanations, and/or engaging in argument from evidence.
 - Lab science credits must include “Lab” in the credit title reflected on students’ high school transcripts.
6. Is there a prescribed sequence or order in which students need to complete science coursework requirement?
 - No, but schools should develop coherent course sequences that address all high school NGSS performance expectations and provide at least three credits in science, with at least two credits that fulfill the lab science requirement.
7. Can science courses completed through the [All Course Network](#) (ACN) count toward students’ graduation requirements?
 - Yes, if the design and rigor of these courses are the same as those experienced by other students in high school. Science courses should use high-quality instructional materials (HQIM) that are aligned to the NGSS. These courses should be evaluated to ensure that they provide students with a coherent sequence of classes. Each student should be provided access to instruction in all of the high school NGSS performance expectations.
8. How does this requirement relate to the RI High-Quality Curriculum Legislation?
 - RIDE is committed to ensuring all students have access to consistent and high-quality instructional materials. Science credit offerings must be in line with the requirements set forth by [RIGL§ 16.22.30-33](#).



- Schools will be required to adopt and implement HQIM in their foundational science courses by June 30, 2025.
 - Learn more about the RI HQIM Legislation as it relates to science [here](#).
9. What are the minimum science transcript requirements for general admission at URI and RIC?
- URI requires student transcripts reflect a completion of, at minimum, **2** credits in a physical or natural science *including at least one laboratory science*.
 - RIC requires student transcripts to reflect the completion of, at minimum, *2 credits of laboratory science*.

Resources for supporting all students in High School Science

- [RIDE's Science Curriculum Frameworks](#) include resources on the following:
- High quality instruction for Differently Abled Students;
 - High quality instruction for Multilingual Learners;
 - Evidence-based practices for supporting culturally responsive-sustaining education; and
 - Professional learning.

If you have additional questions, or need for additional information or resources, please contact
ReimaginingHS@RIDE.RI.GOV.