

RIDE Readiness-Based Graduation Requirements:
Math Requirement Guidance for Implementation &
Resources

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RIDE Readiness-Based Graduation Requirements: Guidance, FAQs, and Resources Related to Math Graduation Requirements

Introduction:

The Rhode Island Department of Education (RIDE) is committed to ensuring all students have access to course offerings with 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 [Readiness-Based Graduation Requirements](#) for all R.I. students beginning with the graduating Class of 2028. RIDE’s adoption of Readiness-Based Graduation Requirements presents an opportunity for reimagining mathematics education in Rhode Island K-12 schools. Specifically, this has presented the opportunity to implement modern math 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.

Students planning to enter the workforce after high school do not need a different nor a less rigorous mathematics 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 4 credits of mathematics during their high school experience and that these 4 credits must include completion of Algebra I, Geometry, and Algebra II credits based on the [Rhode Island Core Standards for Mathematics](#).

This shift in graduation requirements requires R.I. to reinvent how math course sequences are offered and taught to all students, and middle school involvement in supporting these shifts is crucial. We now have an end-goal in sight for our students’ math education, and it is not solely on the shoulders of our high schools to prepare students to successfully meet this requirement. Our whole system needs to support it. Schools and districts should work with multiple levels of stakeholders including students, parents, teachers, support staff, and administrators, to ensure that a wide range of considerations related to the implementation of these modern math pathways is heard so that schools may effectively respond to the needs of R.I. students and families. Decisions about middle and high school students’ course-taking sequences should be aligned to students’ postsecondary goals determined through their [Individual Learning Plan](#) (ILP). All students should be encouraged to meet the full expectations of the pre-K to high school standards.

Purpose of this document:

This document aims to provide guidance and resources for schools and districts implementing the new Readiness-Based Graduation Requirement specifically as it relates to math education. This is supplemental to the [Mathematics Curriculum Framework](#) that RIDE released in Fall 2021 which is designed to provide consistent guidance around how 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.

Math Requirements for Graduation - Overview:

The adoption of Readiness-Based Graduation Requirements set the default expectation that all students will complete 4 credits of mathematics during their high school experience and that these 4 credits must include completion of Algebra I, Geometry, and Algebra II (AGA) credits based on the Rhode Island Core Standards for Mathematics.

One or more of the AGA credits can be earned in middle school, but the design and rigor of course(s) must be based on the Rhode Island Core Standards for High School Mathematics.

If one or more of the AGA credits is earned in middle school, the student is still required to complete 4 years of mathematics in high school in order to obtain the necessary number of college preparatory credits required for admission at the University of Rhode Island (URI), Rhode Island College (RIC) and a majority of the regional colleges and universities.

All students have the opportunity, with the informed consent of their parent/guardian, to enroll in a [RIDE-Approved Readiness Pathway](#) that is aligned to their college/career goals in place of one or more credits required for graduation. While all students are encouraged to complete the AGA course sequence in order to graduate eligible to attend R.I. 2- and 4-year colleges and universities without the need for remediation, this flexibility allows parents/guardians to enroll their student in math coursework aligned to the goals and aspirations they have identified in their Individual Learning Plan.

Math Requirements for Graduation – Summary Chart

Below is a table that outlines the Rhode Island statewide high school graduation requirements as it relates to math education:

Table 1

Students entering 9 th Grade in 2024-25 and subsequent school years must complete:
Must complete 4 credits of math for graduation. Students must complete:
<ul style="list-style-type: none"> • One credit in Algebra I or the equivalent integrated course sequence • One credit in Geometry or the equivalent integrated course sequence • One credit in Algebra II or the equivalent integrated course sequence • One credit of Advanced Math - Advanced math credits must be chosen from the list of RIDE-approved credits (See Table 4 below) • Support/intervention courses shall be designated as elective credits
Flexibility for students includes:
<ul style="list-style-type: none"> • Students may earn one or more of the AGA credits in middle school. The student is still required to earn 4 credits of mathematics in high school in order to obtain the necessary number of college preparatory credits required for admission at the University of Rhode Island (URI), Rhode Island College (RIC) and majority of the regional colleges and universities. • All students have the opportunity, with the informed consent of their parent/guardian, to enroll in a RIDE-Approved Readiness Pathway in place of one or more credits for graduation.

RIDE-Approved Math Credit Sequences

Table 2

	Grade 9	Grade 10	Grade 11	Grade 12	Total Math Credits
These math credit sequences do not require students to enroll in a RIDE-Approved Readiness Pathway.	Algebra I	Geometry	Algebra II	Advanced Math	4
	Integrated Math I	Integrated Math II	Integrated Math III	Advanced Math	4
	Geometry <i>(Algebra I completed in Middle School)</i>	Algebra II	Advanced Math	Advanced Math	4
	Algebra I	Geometry	Algebra II	N/A – Student is enrolled in and on track to complete a full time CTE or Dual Enrollment Program	3
	Geometry <i>(Algebra I completed in Middle School)</i>	Algebra II	Advanced Math	N/A – Student is enrolled in and on track to complete a full time CTE or Dual Enrollment Program	3
	Algebra II <i>(Algebra I and Geometry completed in Middle School)</i>	Advanced math	Advanced Math	Advanced math	4
	Algebra II <i>(Algebra I and Geometry completed in Middle School)</i>	Advanced math	Advanced Math	N/A – Student is enrolled in and on track to complete a full time CTE or Dual Enrollment Program	3

The following math credit sequence requires that a student enroll in a RIDE-Approved Readiness Pathway	Algebra I	Geometry	Selection from RIDE-Approved Readiness Math Menu	Selection from RIDE-Approved Readiness Math Menu / Advanced Math	4
	Algebra I	Geometry	Selection from RIDE-Approved Readiness Math Menu / Advanced Math	Algebra II	4
	Integrated Math I	Integrated Math II	Selection from RIDE-Approved Readiness Math Menu / Advanced Math	Selection from RIDE-Approved Readiness Math Menu / Advanced Math	4
	Algebra I	Geometry	Selection from RIDE-Approved Readiness Math Menu / Advanced Math	N/A – Student is enrolled in and on track to complete a full time CTE or Dual Enrollment Program	3
	Algebra I (A)	Algebra I (B)	Geometry	Algebra II	3 A student would need to seek at least one additional mathematics credit to fulfil the 4-credit statewide graduation requirement.

Approved Math Credits

RIDE has developed the following lists of approved math credits. Approved math credits fall into one of three categories; AGA, Advanced, or Readiness-Pathway. If a credit offering is not included in the approved lists of AGA, Advanced, or Readiness-Pathway math credits, it shall be designated as elective credit. If there is a math credit that you believe should be included in the list of approved AGA and/or advanced math credits, please reach out to ReimaginingHS@RIDE.RI.GOV.

Approved AGA Credits:

Table 3

Credit Name
Algebra I
Geometry
Algebra II
Integrated Math I
Integrated Math II
Integrated Math III
Algebra I (Part One) (.5 credit)
Algebra I (Part Two) (.5 credit)
Algebra II (Part One) (.5 credit)
Algebra II (Part Two) (.5 credit)
IB Algebra I
IB Geometry
IB Algebra II

Approved Advanced Math Credits:

Table 4

Once a student has completed the AGA math credit sequence, they may choose from the below list of approved advanced math credits which will ensure students graduate college and career ready.

Credit Name
Statistics
Probability and Statistics
Pre-Calculus
Calculus
Differential Equations
Advanced Topics in Math
Mathematical Modeling
Data Science

Discrete/Finite Math
AP Calculus
AP Pre-Calculus
AP Calculus AB
AP Calculus BC
AP Statistics
Dual and Concurrent Coursework

RIDE-Approved Readiness-Pathway Math Credits:

Table 5

All students have the opportunity, with the informed consent of their parent/guardian, to enroll in a [RIDE-Approved Readiness Pathway](#) in place of one or more credits for graduation. Below is a list of RIDE-Approved Readiness Pathway credits students may enroll in in place of Algebra II. If there is a credit that you believe should be added to the RIDE-approved list of readiness-pathway credits in place of students taking algebra II, please complete [this form](#).

Credit Name
Statistics
Probability and Statistics
Mathematical Modeling
Data Science
Discrete/Finite Math

FAQs and Resources

1. [Linked here is RIDE’s Math webpage](#). On this webpage you will find:
 - R.I. Core Mathematics Standards
 - R.I. Mathematics Curriculum Frameworks
 - R.I.’s list of approved high-quality curricula in mathematics
 - R.I.’s model high school course standards distribution for Algebra 1, Geometry, and Algebra 2
 - Rhode Island Math Teachers Association (RIMTA) Elementary Math Professional Development Materials
 - Information on RICAS Assessments
2. How do the new high school graduation requirements impact the mathematics credits students need to complete in their high school careers?
 - Students will still be expected to complete 4 credits of mathematics during their high school experience.
 - The 4 credits *must include* completion of Algebra I, Geometry, and Algebra II (AGA) credits based on the [Rhode Island Core Standards for Mathematics](#).

- One or more of the AGA credits may be earned in middle school, but the design and rigor of credit(s) must be based on the Rhode Island Core Standards for High School Mathematics.
 - If one or more of the AGA credits is earned in middle school, the student is still required to complete 4 credits of mathematics in 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.
 - Schools and districts are encouraged to begin implementing these changes earlier than for the graduating class of 2028 to ensure the greatest number of students graduate from Rhode Island high schools prepared for college and career.
4. Why should students be required to complete the AGA course sequence?
- Rhode Island’s public colleges and universities require students to have completed Algebra I, Geometry, and Algebra II for general admission. Completing the AGA course sequence will also support students attending CCRI without having to take non-credit-bearing remedial coursework.
 - For students who wish to pursue specific majors in college/university, there may be additional admissions requirements in math. For example:
 - For URI Engineering majors students are required to complete pre-calculus or calculus in addition to the AGA sequence.
 - URI recommends applicants to Business, Chemistry, Computer Science, Physics, and Pharmacy, to complete pre-calculus or trigonometry in addition to the AGA sequence.
5. If a student completes Algebra 1 or Geometry in middle school, will that course(s) be credited toward their high school mathematics requirement?
- Yes, if the design and rigor of these credits are the same as those experienced by other students in high school and address the appropriate rigor of the Rhode Island Core Standards for High School Mathematics.
 - A student should experience the complete array of standards for grades 6 through 8 while they are in middle school. A student taking Algebra I or Geometry in the 8th grade will necessitate the creation of an accelerated pathway.
 - If a student completes Algebra I in middle school this must be reflected on a student's high school transcript.
6. What metrics should a school use in determining if a student should complete Algebra I or Geometry in middle school?
- The decision should be made utilizing a **combination** of data inclusive of classroom data, formative assessments and universal math screening data, state assessment, student input and parental consent.

- The decision should not be made based upon interest inventories alone. No student or student group should categorically be excluded from the opportunity if accessible math assessments demonstrate readiness.
 - The school and/or district should communicate broadly with students and families about course taking opportunities in math beginning in 6th grade.
 - This communication should entail discussion with the student about their future aspirations as identified through their Individual Learning Plan.
 - For example, if a student has identified aspirations related to STEM it must be communicated to that student and their family the importance of participating in advanced math coursework in high school.
7. Is there a prescribed sequence or order in which students need to complete the AGA course sequence requirement? For example, could a student take Algebra 1, Algebra 2, and then Geometry?
- There is not a prescribed sequence in which students are required to complete the AGA sequence. However, the most common sequence is in the order of Algebra 1, Geometry, Algebra 2. This is recommended as each course builds upon the content and skills that are necessary for the next course.
 - The decision to offer the math course sequence in an order other than AGA (for example GAA, or AAG) must be grounded in evidence-based research.
 - To further discuss a change in the sequence, please email Reimagining@RIDE.RI.GOV
8. Does RIDE recommend offering Algebra 1 (or any of the AGA credit sequence) spread over the span of two years?
- While it is allowed, RIDE cautions against offering any of the AGA classes over the course of two years for the following reasons:
 - More time alone would not be sufficient, and evidence-based interventions and scaffolds must be maximized to ensure ambitious growth. The use of formative assessment data from intensive interventions showing student rate of progress in response to data-based individualized (DBI) interventions should be used to accelerate student learning.
 - The district must plan for just-in-time accelerated learning support within the context of the core content.
 - Taking one or more of the AGA credits over the course of two years would limit the time in which a student is able to complete the required college and career readiness coursework.
 - If a school determines that offering Algebra I (or any of the AGA course sequence) spread over the span of two years is the most effective opportunity to offer a student/students, then a student may (with the informed consent of their parent/guardian) enroll in a RIDE-approved readiness pathway in order to complete this course spread over the span of two years.

- A student completing Algebra I (or any of the AGA course sequence) over two years (which counts as 1 credit), will still need to complete 4 credits of math during high school.
 - In place of offering Algebra I (or any of the AGA credit sequence) spread over the span of two years, it is recommended to explore alternate strategies such as:
 - Utilizing classroom data for just-in-time accelerated learning support,
 - Intervention credit offerings, and
 - Summer and afterschool offerings.
- 9.** Is it possible for a student to take two core mathematics credits concurrently, for example, Geometry and Algebra 2 in the same year?
- Yes. While not recommended due to the potential difficulty this can cause, if the option and potential challenges presented by taking two credits concurrently have been thoroughly discussed with all parties involved, then it is possible.
- 10.** My district is considering moving from a traditional AGA sequence to an integrated sequence. Is this permissible under the new high school regulations? Will the admissions departments of colleges and universities recognize these credits?
- Yes. An integrated sequence is permissible under the new high school regulations and is recognized by RIC and URI if the design and rigor of course(s) are based on the Rhode Island Core Standards for High School Mathematics.
 - It is important to note that if following an integrated sequence, Algebra 2 is noted on the transcript within the integrated sequence.
- 11.** With the intent of accelerating students who did not take Algebra 1 in middle school to be calculus-ready during high school, is a school allowed to compress the content from Algebra 2 with that of pre-calculus into one course?
- Yes. A school is allowed to combine multiple credits into one condensed course if the content contains appropriate rigor of the Rhode Island Core Standards for High School Mathematics. If the potential challenges presented by taking one condensed course have been thoroughly discussed with all parties involved, then it is possible.
 - RIDE recommends that a student take two core mathematics credits concurrently rather than condensing courses.
- 12.** Can mathematics credits earned 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 and must address the appropriate rigor of the [Rhode Island Core Standards for High School Mathematics](#).

13. What does it mean if a student, through the informed consent of their parent/guardian, chooses to pursue a RIDE-Approved Readiness Pathway in place of Algebra II?

- If a student, with the informed consent of their parent/guardian, chooses to enroll in a RIDE-Approved Readiness Pathway in place of Algebra II, then the student will not graduate with the necessary credits for general eligibility at the University of Rhode Island, Rhode Island College, and most regional colleges and universities.
 - Students are still required to complete 4 math credits in their high school career (or 3 if they are in a RIDE-Approved CTE or Full-Time Dual Enrollment Program).
 - Students will be enrolled in a mathematics course more closely aligned to their postsecondary plans as determined through the students Individualized Learning Plan.
 - RIDE will collect and disaggregate data related to students' use of the RIDE-approved readiness pathway. No student should be categorically excluded from the opportunity to participate and be effectively supported in the AGA math course sequence.

14. 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 curriculum materials. Math credit offerings must be in line with the requirements set forth by [RIGLS 16.22.30-33](#). Full details of how schools are expected to meet this requirement can be found on the [Curriculum](#) webpage.
 - To see curriculum used in each school, use [the curriculum visualization tool](#).

15. What are the minimum math transcript requirements for general admission at URI and RIC?

- URI and RIC both require that students have earned 3 credits of standard college preparatory mathematics including Algebra 1, Geometry and Algebra 2 in order to be eligible for general admission.
 - Credits such as “Algebra 2 with Financial Applications,” or “Algebra 2 with Personal Finance” **do not** satisfy the minimum math requirement at URI and RIC.
- If a student received one or more of these credits in middle school this should also be reflected on their high school transcript.

16. What is RIDE’s guidance for awarding credit for math intervention courses?

- If aligned to high school math standards, RIDE recommends students receive elective credit for each intervention course a student takes.
- The intervention should be based on evidence-based research practices showing effectiveness.
- Intervention courses may not replace any of the AGA math course sequence.

17. There is movement in other states to implement modern math pathways. What is RIDE doing in partnership with Rhode Island’s colleges and universities to examine the current math requirements for all students, and implement modern math pathways?
- Mathematics has historically been a major barrier for students in the completion of a degree, which in turn, can limit future opportunities. RIDE, along with representatives from K-12 and higher education have joined together to participate in the Dana Center’s Launch Year’s Initiative which is focused on reimagining math education. The formation of Rhode Island’s State Launch Years Working Group is intended to catalyze meaningful change, to ensure that all students have the opportunity to participate in high-quality, modern math pathways, that prepare them for their individual futures.

Resources for supporting all students in AGA

According to the statewide [Educational Opportunity Audit](#) (April 2020), access to college and career-ready coursework, including access to the full AGA math course sequence, varies across student subgroups. It is imperative that schools and districts consider the implementation of necessary supports for Differently Abled Students (DAS), Multilingual Learners (MLLs), students of color, and any student who is in need of additional support in the AGA course sequence.

Below is a list of links to resources, both informational and practical, for supporting various student subgroups and any students in need of additional support in the AGA course sequence:

- **The importance of college and career-ready coursework expectations for DAS:**
Linked below is a report discussing the importance of ensuring meaningful diplomas with expectations aligned to college and career readiness for all students, and specifically for DAS. In the report you will read that “Research finds about 85 to 90 percent of students with disabilities can meet the graduation standards targeted for all other students, as long as they receive specially designed instruction and appropriate access, supports and accommodations” [Graduation Requirements for Students with Disabilities: Ensuring Meaningful Diplomas for All Students \(Achieve 2013\)](#)
- **The importance of college and career ready coursework expectations for MLLs:** “One important factor that influences high school graduation and postsecondary readiness is course access. Just like any student, students classified as English Learners need to participate in rigorous courses that cover a wide range of content and provide the appropriate credit needed for graduation and postsecondary access” [How State, District, and School Levers Can Improve the Course Access of Students Classified as English Learners in Secondary Schools \(region7comprehensivecenter.org\)](#)
- Section 3 of [Rhode Island Department of Education > Instruction & Assessment > Curriculum > Curriculum Frameworks > Mathematics Curriculum Frameworks](#) contains resources for implementing High-Quality Instruction in Math to support a variety of student needs

- MTSS math topics through middle school level at [Tier 1 and Tier 2](#) in BRIDGE-RI. Visit [Home: Getting Acquainted with BRIDGE-RI \(mtssri.org\)](#) to create a free account.
 - [Supporting Learners in Math \(mtssri.org\)](#) UDL, Differentiation, and Scaffolding
 - [Math - Supporting Language Development in Mathematics](#)
 - [Math - Word Problem Intervention: Additive and Multiplicative Schemas](#) for students grades 4-8
 - [Team Foundations \(mtssri.org\)](#) to develop a strong team and hold effective meeting
 - [Math - Word Problem Intervention: Advanced Multiplicative Schema](#)
 - [Math - Word-Problem Intervention Introduction](#)
 - [Math - Word-Problem Intervention: Additive Schemas](#)

- A series of asynchronous learning modules focused on using acceleration to close achievement gaps in mathematics:
 - Accelerated Learning Series [RI Math Project - Learning Modules \(google.com\)](#) Module 1 and 2 and [Mathematical Understanding \(mtssri.org\)](#)

- IES Practice Guide: Teaching Strategies for Improving Algebra Knowledge in Middle and High School This practice guide provides three recommendations for teaching algebra to students in middle school and high school. Each recommendation includes implementation steps and solutions for common roadblocks. The recommendations also summarize and rate supporting evidence:
<https://ies.ed.gov/ncee/wwc/PracticeGuide/20>

- Six evidence-based, high-leverage practices that research has shown support implementation of high-quality instructional programming for students with and at risk for disabilities regardless of their identified disability category or grade span: [Six Key Instructional Practices for Accelerating Learning and Promoting Progress for Students with Disabilities | Progress Center](#)

- Instructional practice briefs use a three-phase cycle for planning, delivering, reviewing and intensifying individual, small-group, and whole-group instruction. They are designed to be used as a quick reference guide or tip sheet: [Instructional Practice Briefs | Progress Center \(promotingprogress.org\)](#)

- Educators may need to think flexibly about how they plan and schedule instruction, both within existing intervention time and across the school day, to maximize efficiency and create more opportunities for students to respond to instruction and receive feedback. The following strategies are intended to help educators think about how to find the time for this intensification within the constraints of busy school schedules. [Strategies for Scheduling: How to Find Time to Intensify and Individualize Intervention \(intensiveintervention.org\)](#)

- This brief was developed by the National Center on Response to Intervention through discussions with middle schools representing 28 states and addresses frequently asked questions (FAQs) about creating a workable schedule for faculty, staff, and students when establishing interventions: <https://mtss4success.org/resource/rti-scheduling-processes-middle-school>
- One dozen brief tip sheets on setting up infrastructure and supports for effective implementation of MTSS [MTSS Infrastructure and Support Mechanisms | Center on Multi-Tiered Systems of Support \(mtss4success.org\)](#)

Below is a list of links to resources, both informational and practical, for supporting students' participation in Algebra I in middle school:

- [A Leak in the STEM Pipeline](#): “Algebra is the foundation for students' future success in science, technology, engineering, and math. Do they have the opportunity to take it early? Using national data, we look at students' access to and enrollment in Algebra I in the 8th grade.”
- [Keys to College Readiness](#): “Middle school students who successfully complete Algebra 1 are less likely to need remediation upon entry to college and more likely to enroll in college, remain in college, and earn a bachelor's degree”
- [College Bound in Middle School & High School? How Math Course Sequence Matters](#): When students take algebra 1 (that is, in which grade) is less important than whether students are ready to take it.

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