



September 15, 2025

DC State Board of Education
Marion S. Barry, Jr. Building
441 4th St., NW, Suite 530S
Washington, DC 20001

President Patterson, Vice President Williams, and esteemed members of the State Board of Education:

Thank you for the invitation to provide insight into best practices in high school math graduation requirements. My name is Andrea McChristian, and I am a Ward 1 resident, former Head Start teacher, and Just Equations' national policy director. [Just Equations](#) is a policy institute that works across educational segments to ensure that math policies give all students—regardless of race, class, or ethnicity—the equitable quantitative foundation they need to succeed in college and beyond. Our goal is for math education to no longer serve as a gatekeeper to opportunity, especially for historically marginalized students. We are proud to serve as a member of OSSE's DC Math Advisory Circle and commend the important work OSSE and the board are undertaking to reimagine Washington's high school graduation requirements.

Meeting the Moment

Our nation is at an inflection point for transforming high school math education. Twelfth-grade NAEP math scores recently dropped to their [lowest level in two decades](#). Employers across the nation are lamenting a [lack of needed math skills](#)—including foundational math and data science. Around half of middle and high school students [report losing interest](#) in their math lessons about half or more of the time.

In many ways, this student disenchantment makes sense. In our everchanging digital world, students are being exposed to math in novel ways every day. As the National Council of Teachers of Mathematics (NCTM) [notes](#):

Mathematics underlies much of the fabric of society, from polling and data mining in politics, to algorithms targeting advertisements to groups of people on social

media, to complex mathematical models of financial instruments and policies that affect the lives of millions of people.

Despite this new landscape, however, high school students continue to be funneled into a math sequence (starting with Algebra I, Geometry, and Algebra II in an effort to prepare students for Calculus) that has been largely unchanged for generations. As a result, leading math experts and state leaders nationwide have called for [meaningful transformation](#) of high school math education. The moment is therefore ripe for the district to reevaluate how math education is preparing students for future success.

So what does this moment require? At Just Equations, we support high school math redesigns that provide students with the skills they need to succeed in the college major of their choice and their chosen career field. This means providing students with a strong math foundation in the first few years of high school math—with a focus on skill development and meaningful content rather than a rigid allegiance to specific course names. And, in the last year or two of high school math, we advocate for multiple course options that are relevant to students' contexts and interests. Such an approach aligns the high school mathematics curriculum with students' college and career interests, enhances students' engagement in mathematics, and addresses the changing needs of the 21st century.

Content over Course Name

By revising its math graduation requirements, the district joins a growing number of jurisdictions reevaluating the traditional course sequence of Algebra I–Geometry–Algebra II. Math experts have called out how this pathway, seen as setting students up to take Calculus and become STEM majors, may lead to frustration and disengagement for many students. While some students, including students with no plans to major in STEM fields, may successfully navigate this pathway, others are increasingly getting [“stuck in detours, repeats, or watered-down versions of STEM pathway courses.”](#)

Some advocates argue that these traditional courses are not actually teaching students the math skills they need to succeed: Indeed, [an analysis](#) of national tests as well as studies of high school transcripts show a growing divide between the titles of courses and their content. Alan Schoenfeld and Phil Daro, leading math experts, summarized the issue recently in [Science](#) magazine: “The typical math course sequence . . . is much the same as it was more than a half century ago, both in name and in content. This rigid structure makes conflicts almost inevitable. One major criticism has been that the curriculum is ‘a mile wide and an inch deep.’”

In response to these challenges, math education leaders have called for a focus on content over course name and making sure that the math courses offered to students provide them with the basic foundation—or “essential concepts” according to NCTM—to succeed in college and beyond. The first two or three years of high school math should provide an understanding of [essential concepts](#) across four content domains: number, algebra and functions, statistics and probability, and geometry and measurement. Two leading strategies for making this shift to content over course name are adopting integrated math sequences and rethinking Algebra II.

Integrated Math Sequences

The district’s [proposed math graduation requirements](#) of “Algebra I, Geometry, and Algebra II or an equivalent integrated math course at a minimum” could be interpreted in several ways in the context of efforts other jurisdictions have taken.

One of these is to adopt an integrated math sequence. Recently, the district’s neighbor, Maryland, developed a [new PreK-12 mathematics policy](#) that moves the state from an Algebra I–Geometry–Algebra II sequence to a two-year integrated sequence that combines algebra, geometry, and statistics standards into Integrated Algebra I and 2. The stated purpose of this change was to ensure students are “mathematically college and career ready” by the end of 10th grade. Similarly, [Oregon](#) has implemented a two-year sequence that includes algebra, geometry, data science, and statistics. States using a three-year integrated sequence include [Utah and North Carolina](#).

If the district moves ahead with its proposal for an equivalent integrated math course, we urge OSSE to further clarify whether it intends to integrate the entire Algebra I–Geometry–Algebra II sequence, modernize its Algebra II course, or offer multiple course options starting in the third year.

Rethinking Algebra II

States are also rethinking the role of Algebra II. This is [a complicated issue](#). On the one hand, Algebra II is a key stepping stone to STEM careers and is often a requirement for university admission. On the other hand, it is a challenging course with few direct benefits for students who aren’t pursuing STEM majors and careers.

As an organization, Just Equations advocates for all students to have access to the math courses that are required for admission to public universities in their state—which may include Algebra II. This decision requires open dialogue between K-12 and higher education systems. This is particularly true for the district’s students; while the University of the District of Columbia (UDC) does not appear to have an Algebra II

[admissions requirement](#), about 75% of the district's class of 2022 who went to postsecondary did so [out of state](#).

Some states have added options in addition to Algebra II for their third math requirement. When education systems such as Ohio's and [Oregon's](#) did so, they worked in collaboration with their public universities to ensure that the new courses met admissions requirements, as we outline in our 2024 report [Beyond Algebra: High School Math for a New Generation](#). [Oregon's 2+1 model](#), adopted in 2021, sets a two-year core curriculum for all students. After that, students have the option to take either Algebra II or a variety of other course options that may be relevant to their interests during their third year of math. [Ohio](#) requires four years of high school math, including Algebra II or an equivalent, for graduation. School districts are asked to offer Algebra II and encouraged to offer at least [one equivalent course](#)—such as Quantitative Reasoning, Data Science Foundations, Statistics & Probability, and Discrete Math & Computer Science.

When Algebra II is required for all students, Just Equations calls for modernizing the course to prioritize critical content and ensure students are exposed to a strong quantitative foundation. States including Georgia and [Washington](#) have already made this move, with the support of the Charles A. Dana Center at the University of Texas at Austin, which has published a [modern Algebra II framework](#).

Through their Launch Years Initiative, our colleagues at the Dana Center have worked with a number of states to develop math pathways aligned to students' goals and aspirations. We commend this powerful work, which Dr. Katey Arrington highlights in her testimony today.

Multiple Course Options

In addition to reassessing foundational math coursework, including the role of Algebra II, we urge the district to consider offering distinct math pathways after the first two or three years of high school math. Doing so would allow students to explore their interests, prepare for their future majors, and pursue a path for career success. Importantly, pathways should provide students interested in STEM majors and careers a route to calculus while also providing options for students interested in careers outside the traditional STEM path (such as psychology, nursing, and political science) to take math courses that will prepare them for these jobs. Importantly, during its [August 20, 2025 panel](#) on needed high school graduate skills and qualifications, the board flagged the importance of ensuring students are “building the foundational knowledge necessary for high-demand careers, such as chemistry and math for health care careers.”

Math course options for the third or fourth year of high school should be flexible and allow students, who may not yet know their future majors and careers, to move across pathways—including between those with a STEM and non-STEM focus. They should also include dual-enrollment, Advanced Placement, and/or International Baccalaureate course options for students who demonstrate interest and readiness.

Even in states where only three years of math are required, expanding the range of options [has shown promise](#) for increasing the proportion of students who take math all four years of high school. Here are additional examples of how states are doing this:

- Starting no later than 11th grade, after students complete their two-year integrated sequence, Maryland now offers pathways in four areas: Quantitative Reasoning, Data & Data Analytics, Algebraic Foundations of Calculus, and Statistics & Probability.
- Oregon, under its 2+1 model, offers an Algebra II course for the third year of math in addition to options such as data science and quantitative math. Though only three years of math are required, additional courses are available in the fourth year. Students who completed data science, for example, can move on to AP Statistics, while students who completed an advanced Algebra II course can proceed to calculus.
- Students in Utah who complete their integrated math sequence can choose from several fourth-year courses that provide college credit through dual enrollment, including Quantitative Reasoning, Statistics, and College Algebra and Trigonometry. With parental permission, students can also opt out of Math III in order to take courses such as modern math, personal finance, and computer programming—but those options don't prepare them for dual enrollment in their senior year.
- New Mexico [recently approved](#) its reenvisioned high school math pathways, creating several new courses: Modernized Algebra II (designed to support students pursuing any major or career), Advanced Algebraic Concepts, Introduction to Data Science and Statistics, Quantitative Reasoning, and Geo-Stats.

Cross-System Alignment

As mentioned earlier, cross-system alignment is critical to any reevaluation of high school math graduation requirements. This means that the district's K-12 system must be in conversation with UDC and other universities students attend to ensure that math graduation requirement revisions do not cut off admission opportunities. It is heartening to know that OSSE has started this analysis by reviewing the admissions requirements at the top schools attended by the district's DCTAG recipients, as Superintendent

Mitchell shared during OSSE's May 28, 2025 [Reimagining High School Graduation Requirements public feedback session](#).

Conclusion

I hope that this feedback on best practices in high school math graduation requirements has been helpful. Just Equations stands ready to assist your consideration process—including providing any feedback concerning the integrated math equivalent definition. If you have any further questions, please feel free to email me at andrea@justequations.org. Thank you for your time and all you do to support the district's students.

Best regards,

Andrea McChristian
National Policy Director, Just Equations