
TO: Members of the Education Policy Committee

FROM: Carey M. Wright, Ed.D., State Superintendent of Schools

DATE: August 13, 2026

SUBJECT: Revised Maryland Mathematics Policy & Secondary Mathematics Program
Request to Adopt

STRATEGIC PLAN ALIGNMENT:

Pillar 3: College and Career Readiness

Goal: Every student graduates high school college and career ready.

Outcome:

3.H Increase the percentage of students demonstrating growth on statewide assessments at each grade level and in each student group.

3.I Increase the percentage of students who meet the CCR standard by the end of 10th grade in each student group.

3.K Increase the percentage of students in each student group who complete at least one component of a Post-CCR Pathway, such as earning postsecondary credit, AP/IB exam with qualifying score, a career-connected learning experience, or an industry-recognized credential.

Purpose

The Maryland State Board of Education unanimously adopted the PreK- 12 Mathematics Policy in March 2025. This policy represents the first statewide policy in Maryland focused specifically on mathematics and is intended to outline expectations of research-based strategies and structures to meet the collective goal of improving student mathematics outcomes in Maryland.

In June 2026, MSDE's Mathematics Branch provided updates on mathematics policy initiatives and requested some implementation timeline revisions, accounting for prioritization, sustainability, and educator feedback. Additionally, following the completion of the Secondary Math Standards Framework & Validation Committee, an overview of the proposed Secondary Mathematics Program was presented. These revisions underwent a public comment period in July 2026. At this time, MSDE's Mathematics Branch will present an overview of the public comments received and request adoption of the revised Math Policy with the timeline and Secondary Math Program updates.

Background

The PreK-12 Maryland Mathematics Policy is a strategic initiative designed to transform mathematics teaching, learning, and achievement from early childhood through secondary education. This policy supports the foundational goals of [The Blueprint for Maryland's Future](#) by ensuring that all students, regardless of background, have equitable access to a coherent and high-quality mathematics education. The policy includes recommendations to implement a structured mathematics program that develops students' conceptual understanding and fluency in mathematical concepts, skills, and strategies. By aligning teaching and learning practices with these goals, the policy aims to prepare students to apply mathematical knowledge in real-world contexts, enhancing their readiness for daily life, higher education, and future careers.

Executive Summary

Provide an overview of the public comments received on the revised Math Policy with timeline and Secondary Math Program updates.

Action

The Maryland State Department of Education requests the State Board of Education's adoption of the revised Maryland Mathematics Policy and Secondary Mathematics Program.

Attachments

MSDE Revised Math Policy_EPC 8.13.26.ppt

ProposedRevisions_MarylandMathPolicyAug2026.docx

Revised Math Policy Public Comment Report_Aug2026.docx

Maryland Secondary Math Program Folder:

- Post_Integrated_Alg_Program_Overview DRAFT 6_2026.docx
- Post-Integrated Algebra Expectations.docx
- SampleFramework1_Advanced Quantitative Reasoning Framework DRAFT 6_2026.docx
- Partners in Secondary Math Program Development.docx



Revised Mathematics Policy

DIVISION OF INSTRUCTIONAL PROGRAMS

Presented By | Lyndsey Brightful, Executive Director of Mathematics

August 13, 2026



MSDE Strategic Plan Goals

1

Every child has access to a high-quality early childhood program.

PILLAR 1: EARLY CHILDHOOD EDUCATION



Every student is matched with the resources they need to ensure their success.

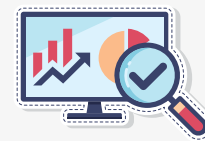
PILLAR 4: MORE RESOURCES FOR STUDENT SUCCESS

4

2

Every school has high-quality and diverse teachers and leaders.

PILLAR 2: HIGH-QUALITY & DIVERSE TEACHERS AND LEADERS



Every school and district receives a rating of ____ or higher.

PILLAR 5: GOVERNANCE AND ACCOUNTABILITY

5

3

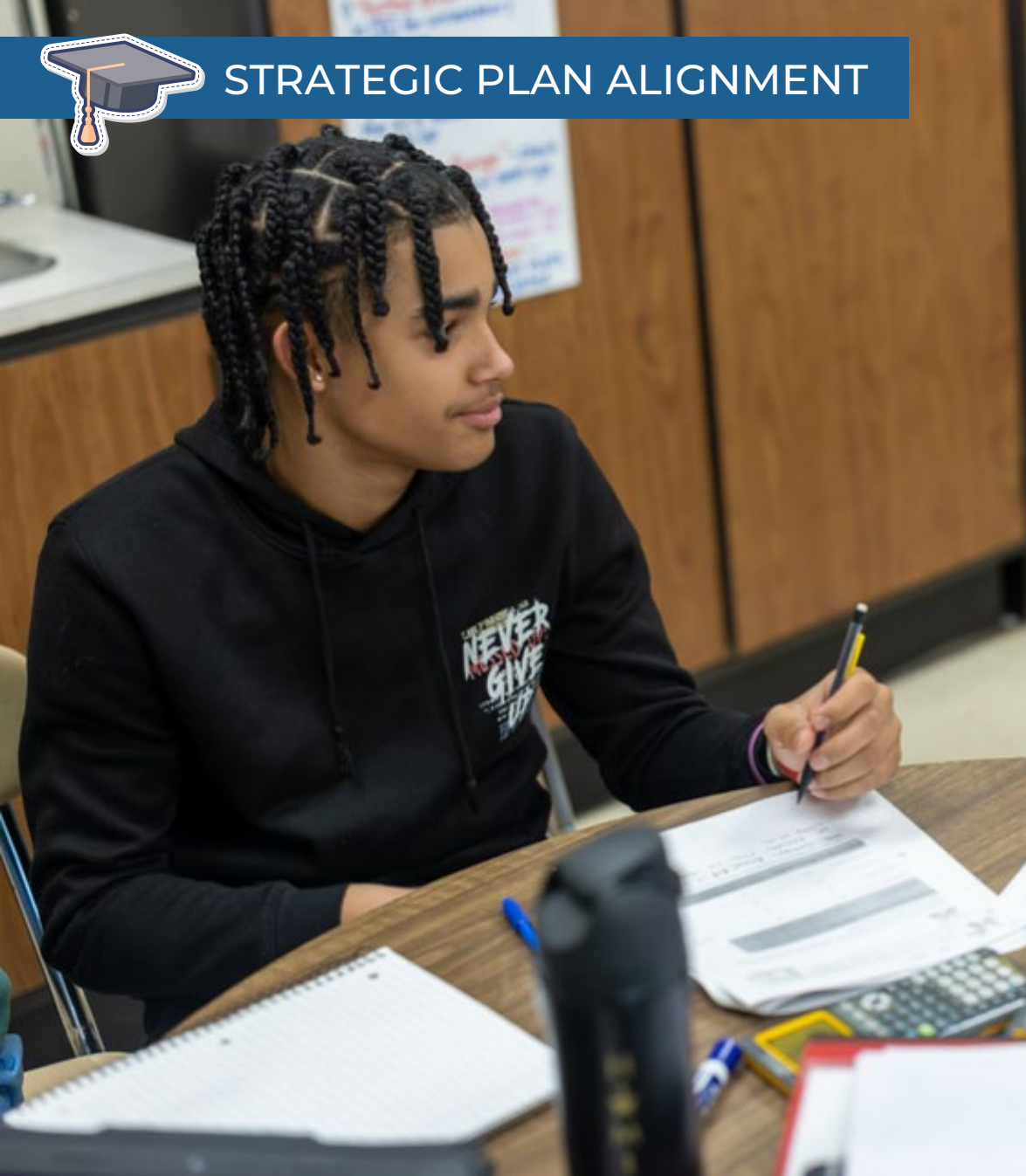
Every student graduates high school college and career ready.

PILLAR 3: COLLEGE AND CAREER READINESS



Visit the Maryland State Department of Education website to learn more about the Strategic Plan!

strategicplan.marylandpublicschools.org



Every student graduates high school college and career ready.

3.H

Increase the percentage of students demonstrating growth on statewide assessments at each grade level and in each student group.

3.I

Increase the percentage of students who meet the CCR standard by the end of 10th grade in each student group.

3.K

Increase the percentage of students in each student group who complete at least one component of a Post-CCR Pathway

Mathematics Policy Timeline



March 2025

First Adoption
of Math Policy



June 2026

Proposed
Revised Math
Policy



July 2026

Public
Comments on
Revised Math
Policy



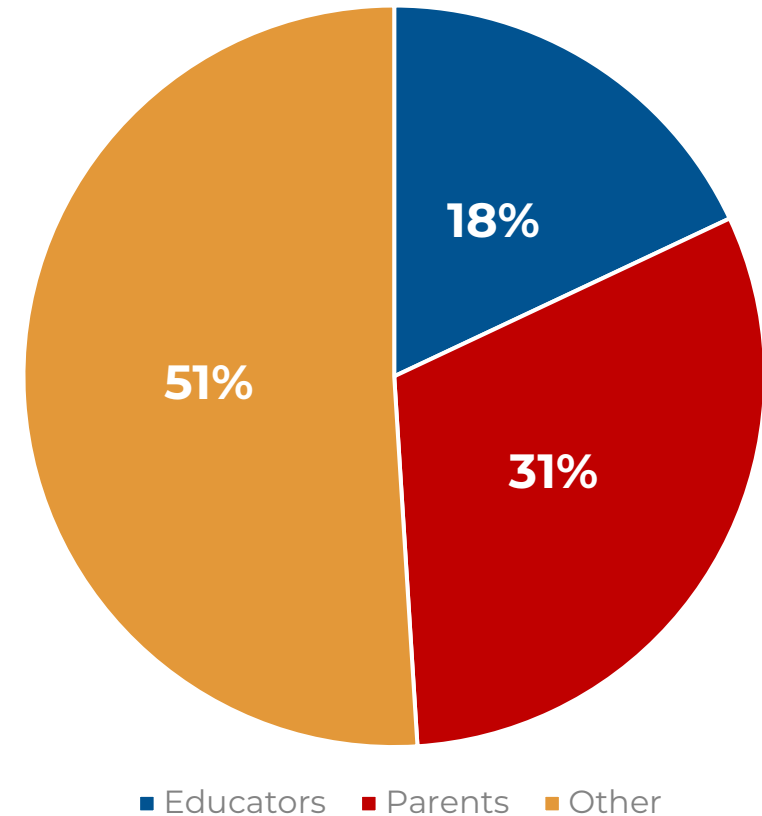
August 2026

Seeking
Revision
Adoption of
Math Policy

Public Comment by Role

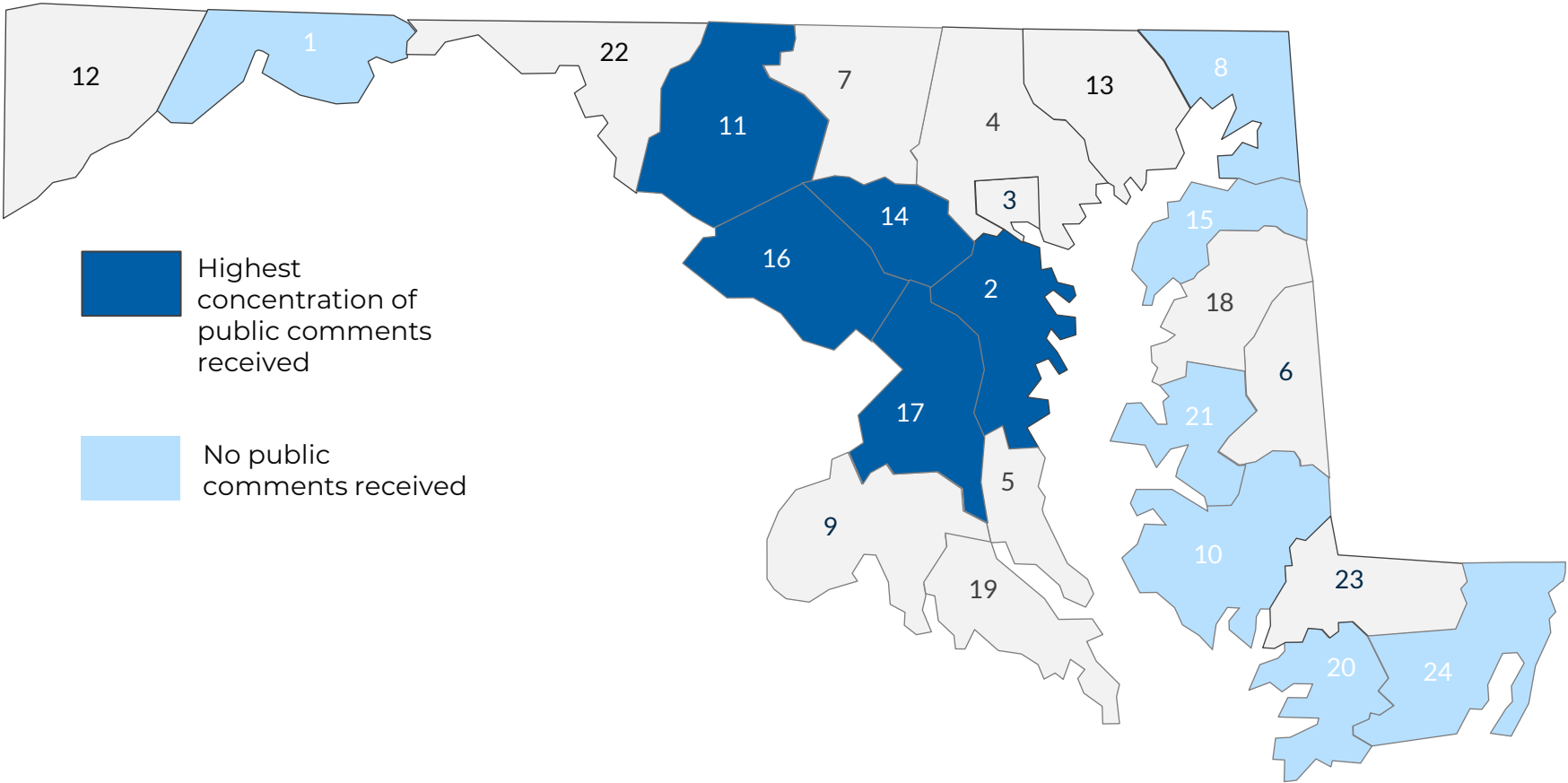
MSDE received approximately 274 individual comments.

- 18% came from **educators** (teachers, school administrators, and district leaders)
- 31% came from **parents** and family members
- **Additional comments** were submitted by:
 - students
 - community members
 - business/industry representatives
 - higher education faculty



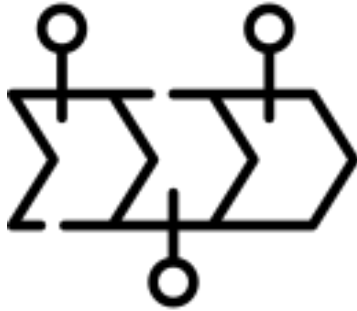
Public Comment by Local Education Agency

Comments were submitted across the state with 80% of responses submitted from the dark blue shaded clustered section of LEAs. Additionally, there were no public comments submitted from representatives of 7 LEAs, identified in light blue.



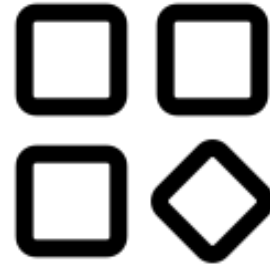
- 1. Allegany County
- 2. Anne Arundel County
- 3. Baltimore City
- 4. Baltimore County
- 5. Calvert County
- 6. Caroline County
- 7. Carroll County
- 8. Cecil County
- 9. Charles County
- 10. Dorchester County
- 11. Frederick County
- 12. Garrett County
- 13. Harford County
- 14. Howard County
- 15. Kent County
- 16. Montgomery County
- 17. Prince George's County
- 18. Queen Anne's County
- 19. St. Mary's County
- 20. Somerset County
- 21. Talbot County
- 22. Washington County
- 23. Wicomico County
- 24. Worcester County

Key Themes in Public Comment



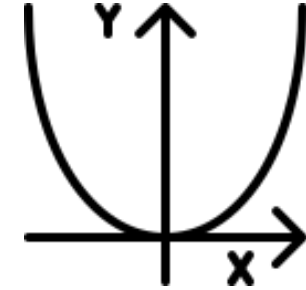
Implementation Timeline of Math Policy

- Scheduling
- Staffing



Other Math Policy Components

- Instructional Time
- Maintaining access to a well-rounded experience



Proposed Secondary Math Program

- Implementation guidance
- Expanding rigorous postsecondary mathematics opportunities
- Equitable access for all students

Implementation Timeline of Math Policy

94% (n = 257) of total submissions addressed the revised mathematics policy implementation timeline

Support

n = 121
47.1% of submissions regarding the implementation timeline of the mathematics policy, **explicitly support** the proposed timeline revisions.

Oppose

n = 3
1.2% of submissions regarding the implementation timeline of the mathematics policy, **explicitly oppose** a proposed delay or supported an original implementation timeline.

No Clear Position

n = 133
51.7% of submissions regarding the implementation timeline of the mathematics policy, **did not express a clear position** on the proposed timeline.

No Clear Position Given

51.7% (n = 133) of total submissions for the timeline implementation did not express a clear position

Focus on Instructional Minute Requirements

n= 132

Common themes among these submissions included **scheduling, access to electives and other programs, local flexibility, staffing, funding and resources.**

Submitted Using Identical Language

n=97

73% of the submissions that focused solely on instructional minute requirements submitted using **identical** or **substantially similar** language.

Proposed Secondary Math Program

6% (n = 17) of total submissions either supported or opposed the proposed Secondary Math Program

Support

n = 15 **88.2%** of submissions regarding the proposed secondary mathematics program **generally support** the goals outlined in the revisions.

Oppose

n = 2 **11.8%** of submissions regarding the proposed secondary mathematics program **did not support** the goals outlined in the revisions.

Current Policy Language

“By School Year 2027-2028...”

**60 Minutes of
Math
Instruction for
Grades K-8**

**Integrated
Algebra
Course
Progression**

**Common
Secondary
Math
Pathways**

**Math
Acceleration
Course
Progression in
Grades 3-8**

Request for Revision

“By School Year 2028-2029...”

**60 Minutes of
Math
Instruction for
Grades K-8**

**Integrated
Algebra
Course
Progression**

**Common
Secondary
Math Program**

**Math
Acceleration
Course
Progression in
Grades 3-8**

Secondary Math Program Overview

Primary Expectation

By SY 28-29, Post-Integrated Algebra courses are expected to align to:

MSDE/ SFVS-developed pathway frameworks:

- Advanced Quantitative Reasoning
- Discrete Mathematics
- Data Science
- Calculus for Understanding Change

Nationally recognized frameworks adopted by MSDE:

- AP Statistics | AP Precalculus
- AP Calculus
- IB Mathematics
- Integrated Statistics/Quantitative Reasoning

Rare & Clearly Justified Cases

A locally developed course that does not directly align to an existing framework may be considered if **aligned to Maryland's core expectations & approved by MSDE**

Lesson Timing Impact (Sample)

Lesson Component	Student Experience Examples	Minutes	Impact on New Learning if Minimized
Introduction	- Connect to prior learning - Explore anticipated new learning in context	5-10	Purpose Prior Connection
Fluency Instructional Routine	Strengthen their number sense or procedural fluency in connection to anticipated new learning	10-15	Skill Priming
Concept Development: Intentional Instructional Routines with Practice & Differentiated Support	- Introduction to a new mathematical context, concept, representation, strategy, language, application, etc. - Work toward mastery of a concept or procedure with individual and small group support - Apply mathematics to a modeling or other application problem - Identify and resolve common mistakes and misconceptions	25-35	Rigor (often replaced with extended priming) Mastery Opportunities Individualized Support
Closure	- Synthesize new learning - Formative assessment	5-10	Clarity and Future Connections

Equitable Math Instructional Time: Rationale & Status

- **Instructional equity:** 45 minutes vs. 60 minutes daily is a difference of over 2000 minutes a school year, which equates to 45 math lessons
- Ensures ample time for **implementation of HQIM** with integrity
- Modeled after **instructional minutes** of highest performing countries and states demonstrating **math proficiency progress**
- MSDE prepared to **provide statewide guidance** and **differentiated support** for implementation over the next 2 school years
- Improving **middle school math student outcomes** will require intentional action and follow-through at all levels

Implementation Status as of SY 2026-2027	
Math Instructional Minutes	Number of LEAs
Less than 60	5*
Varied (45-80)	2
60 or more when including math intervention course	6
60 or more without including math intervention course	11*

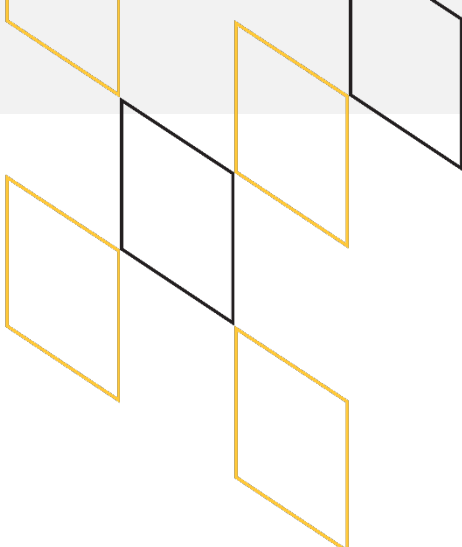
MSDE Requests to Move Forward with Adoption of the Revised Math Policy

- Math Acceleration Implementation Timeline (p. 12)
- Math Course Minutes Implementation Timeline (p. 13)
- Integrated Algebra Implementation Timeline (p. 15)
- Secondary Math Program Implementation Timeline and Shift to Course Frameworks (p. 8, 15-16, Appendix C, and throughout)
- Aligned COMAR and Assessment Update (p. 16)
- Timeline Overview Update (p. 20)
As requested from public comment
- Minor Updated Initiative Language (throughout policy)

Next Steps for the MSDE Mathematics Branch

When the Mathematics Policy is adopted as proposed, we will continue to:

- Expand professional learning opportunities to support implementation of 2026-2027 initiatives
- Meet weekly with MSDE Assessment team to build a strong MSTAR Mathematics Assessment grades 3 – Integrated Algebra 2
- Provide differentiated implementation support to LEAs regarding implementation of:
 - Scheduling
 - Math acceleration
 - Integrated Algebra 1
 - Secondary Math Programs



QUESTIONS

MSDE Mathematics Branch

mathematics.msde@maryland.gov



Maryland PreK- 12 Mathematics Policy

Mathematics Branch

~~Office of Teaching and Learning Instructional Programs & Services~~

Office of Teaching and Learning, Division of Instructional Programs

Maryland State Department of Education

Adopted March 2025, Revised June 2026

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Acknowledgements

A sincere appreciation is offered to the following individuals who contributed time and expertise to develop this policy. Their contribution will serve the Maryland State Department of Education and the state's local education agencies in their collaborative efforts to enhance mathematics instruction for students, promote access to resources, and ensure the successful implementation of the Mathematics Policy across Maryland. 2025 Version MSDE Contributors include:

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Math Policy Engagement and Feedback Process

Timeline	Activity
January 28, 2025	- Version 1 of Maryland PreK-12 Math Policy presented to State Board of Education - State Board of Education shares initial reactions
January 28, 2025- ongoing	MSDE Mathematics Branch individually responds to community stakeholder feedback shared with the agency by phone or email
February 4- 24, 2025	Version 1 of Maryland PreK-12 Math Policy posted on MSDE Mathematics Branch website for public feedback.
February 13, 2025	Version 1 of Maryland PreK-12 Math Policy presented to State Board of Education Policy Committee for information and detailed feedback
February 13 & 14, 2025	MSDE hosts LEA Leadership Math Policy Feedback Sessions
February 25, 2025	State Board hosts public hearing
Throughout March 2025	MSDE shares resources to support the policy (as requested by LEA Leadership)
March 11, 2025	Maryland Launch Years Task Force and Mathematics Standards & Framework Validation Committee joint meeting (focus on progression of PreK- Integrated Algebra 2 math standards)
March 13, 2025	- MSDE presents Summary of Public comment and Revised Maryland PreK-12 Math Policy - Version 2 of Maryland PreK-12 Math Policy presented to State Board of Education Policy Committee for adoption
March 14, 2025	- Pi Day LEA Leadership film screening/ Maryland Math Policy discussion - Pi Day Community film screening/ Maryland Math Policy discussion
March 20, 2025	Math Policy Full Day Deep Dive at LEA Math Supervisor Collaborative
March 25, 2025	- Version 2.5 of Maryland PreK-12 Math Policy presented to State Board of Education for adoption - Policy unanimously adopted

I. Purpose

The PreK- 12 Maryland Mathematics Policy is designed to catalyze significant improvements to teaching, learning, and achievement in mathematics from early childhood through secondary grades across Maryland.

This policy aligns with and advances the foundational goals of [The Blueprint for Maryland's Future](#) by prioritizing equitable access to rigorous, relevant, high-quality mathematics education for all students in grades PreK through 12. This policy outlines recommendations for implementation of a coherent math program and support structure that guides students' mathematical development from early childhood through high school. Herein, we focus teaching and learning in mathematics to ensure that students can both conceptually understand and fluently apply math concepts, skills, and strategies in order to extend these experiences beyond the classroom and apply mathematical skills to their daily lives and future aspirations.

According to data from the 2024 administration of NAEP, 37% of 4th-grade students in Maryland scored at or above proficiency in math, in comparison to 39% of students nationally. Data from the 2024 NAEP administration showed that 25% of Maryland 8th graders scored at or above proficient in math, compared to 27% of students nationally. Historically, Maryland students have exceeded the national proficiency rate in grades 4 and 8, but in recent years, this trend has shifted. Additionally, in 2024, [data from Maryland's state assessment](#), the Mathematics Maryland Comprehensive Assessment Program (MCAP), revealed that student outcomes improved from School Year 2022-2023 across all grade levels, but have not returned to pre-pandemic performance outcomes and remain below Maryland's expectations for student mathematical proficiency.

Acknowledging the current challenges with student achievement in mathematics across the state and recognizing struggle as a natural part of the math learning process (Sharma, 2024), this policy extends a deep commitment to instructional equity, access, and opportunity. The Maryland State Department of Education (MSDE) and the Maryland State Board of Education are committed to building comprehensive systems to ensure that all students receive responsive support when they need it. These systems must include meaningful daily, on-grade-level, standards-aligned instruction and access to intervention and acceleration which will support student success from prekindergarten through secondary mathematics pathways for all students across Maryland.

Central to this policy is a redesign of the core secondary mathematics sequence to ensure that all students are mathematically college and career ready by the end of 10th grade and have multiple ~~pathways and~~ opportunities to explore rigorous mathematics content thereafter. This readiness equips all students to successfully pursue a diverse range of secondary mathematics ~~pathways~~ **experiences** tailored to their interests and future goals. Fundamentally, secondary mathematics success is built on a strong foundation of numeracy in the early and intermediate grades and the development of algebraic thinking and abstraction in the middle grades (SAP, 2021; Siegler et al., 2012).

In addition, the policy acknowledges the historical barriers to high-quality math experiences that exclusionary tracking creates, particularly for historically marginalized student groups (Francis & Darity, 2021; Irizarry, 2021; NCTM, 2018). It therefore is explicit about moving away from exclusionary tracking and **towards** creating structures that create authentic opportunities for all students to engage in advanced math throughout the PreK-12 progression. School schedules in every school across the state must be designed and implemented to reflect the belief that all students are capable of learning and doing mathematics.

Key policy recommendations also include the development and implementation of ongoing, job-embedded professional learning opportunities for all educators that promote effective teaching practices, implementation of standard-aligned instruction, and data-driven pedagogical approaches. Policy implementation will be monitored through the establishment of systemized, grade-level standards aligned assessments across Local Education Agencies (LEAs). These assessments will evaluate students' progress in defined areas of numeracy development and will enable consistent progress monitoring and support the strategic analysis of student-level data. LEAs will also review and respond to annual student data aligned to equitable access and student outcomes in advanced mathematics. To support implementation, MSDE and LEAs will collectively launch initiatives to involve and support families, communities, and local organizations in mathematics education through regular forums and workshops across the state.

The policy's key strategic recommendations were developed through collaboration with the PreK-12 and higher education math community, including the Charles A. Dana Center Launch Years Initiative. To align recommendations with local context, community feedback played an important role in shaping these policy recommendations.

II. Definitions

Throughout this policy, several key terms are used. The following section defines these terms as they are intended within the context of this policy's development.

- A. **Acceleration** refers to providing students with access to mathematics content standards and instruction beyond their current grade level. It can occur at any grade and is based on demonstrated mastery of core content.
- B. **Equitable Access** ensures that all students, particularly those from socio-economically disadvantaged and underserved groups, students with disabilities, and Multilingual Learners (ML), receive the support, resources, and opportunities they need to succeed in mathematics. Unlike *equal* opportunity, which treats all students the same, *equitable access* requires a deliberate and intentional approach that addresses historical and systemic barriers to participation in advanced mathematics (DiME, 2007; Leonard, 2009). *Equitable access focuses on ensuring that students who have been historically excluded are intentionally included in mathematics pathways and acceleration opportunities, with structures in place to support their success.*
- C. **Equitable Teaching Practices** ensure that all students have meaningful engagement with standard-aligned content. These practices are intentional and responsive and provide differentiated support and attention to uplift students who might otherwise become disengaged. By tailoring support to individual needs and focusing on building conceptual understanding rather than relying on rote procedures to support all students, equitable teaching helps remove barriers to learning, fosters a sense of belonging in mathematics, and cultivates the ability to apply mathematical ideas in new contexts (NCTM, 2018).
- D. **Exclusionary Tracking** refers to the practice of placing students into rigid learning tracks, often arbitrary and based on assumptions about their abilities, which limits their future opportunities in mathematics (NCTM, 2018; Oakes, 2005; Oakes & Guiton, 1995).
- E. **Flexible grouping** refers to student groups based on readiness and interest, with grouping decisions made frequently—by lesson, topic, unit, or even the modality of task engagement. Flexible groups can include homogeneous or heterogenous groupings for students developing skills on a targeted concept.
- F. **Integrated Algebra** refers to the intentional integration of algebra, geometry, and statistics to showcase their interconnected nature for a cohesive and deeper understanding of mathematics. With this approach, students are provided opportunities to use different areas of math (algebra, geometry, statistics) as a lens through which they develop a more holistic understanding of concepts traditionally taught in isolation. For example, students can explore concepts like quadratic relationships not only through the lens of algebra but also by analyzing their graphical representations in geometry and modeling real-world data in statistics. See *Appendix A for an overview of Integrated Algebra 1 & 2 course content.*

1. **Secondary Mathematics Pathways Program** include mathematics courses that support students in building a unique, tailored path to mathematical college and career readiness. These ~~pathways opportunities~~, starting no later than grade 11, are aligned with students' goals and interests and increase the relevance of secondary mathematics by acknowledging student autonomy in choosing their own mathematical path. ~~Pathway~~ **Secondary Mathematic Program** options include **coursework in** quantitative reasoning, ~~Data and~~ data analytics, algebraic foundations of calculus, ~~and~~ statistics, and probability. *See Appendix C for an overview of the Secondary Mathematics Pathways Program.*

III. Advancing Numeracy Through Consistent, Clear, and Effective Mathematics Instruction

- A. This policy is grounded in the commitment to provide every student with meaningful math experiences that emphasize the development of numeracy.
- B. The development of numeracy is supported by mathematics instruction that is both intentional and visible (Hattie et al., 2017) across Tiers I, II, and III. When implemented strategically and systematically, effective mathematics instruction guides students' development of conceptual understanding and procedural fluency, also ensuring that clearly defined processes and goals are transparently communicated. This visible mathematics instruction is grounded in the following principles (NMAP, 2008):
 - 1. Teachers set and communicate clear learning goals to ensure students understand the purpose and focus of their learning and what success looks like.
 - 2. Teachers provide clear models for strategically solving problems with a series of examples.
 - 3. Teachers actively make connections to prior mathematical knowledge, skills, or experiences to promote internalization of new concepts and support students' learning progression.
 - 4. Students are provided with extensive opportunities to practice new skills in a variety of contexts, with deliberate connections made to prior mathematical knowledge.
 - 5. Students are provided with opportunities to discuss their approaches with their peers and teachers.
 - 6. Teachers consistently provide timely and specific feedback to guide the mathematics learning progression.
- C. Students demonstrate mathematical proficiency by jointly developing conceptual understanding of and procedural fluency with mathematical concepts, that then can be applied to various problem-solving contexts (NMAP, 2008).
 - 1. Concepts are to be introduced and developed through an appropriate balance of the concrete, semi-concrete or representational, and abstract approach.
 - 2. Instruction should lead students to develop flexible, accurate, and efficient application of mathematical strategies, including the informed use of standard algorithms.
 - 3. Students should develop automaticity, that is the ability to recall facts quickly, accurately, and with little effort, in order to lighten cognitive load and enable more complex problem solving.
- D. The pathway to college and career numeracy develops within four interconnected content domains as students' progress from early elementary to secondary mathematics learning experiences. Each domain reflects a developmental progression from fundamental concepts in early grades to advanced skills in high school, and provides students with a multidimensional

understanding of numerical and algebraic relationships, spatial awareness and geometric modeling capabilities, proficient data literacy and critical statistical reasoning skills:

1. Number and Operational Sense - Early numeracy development begins with foundational skills in counting, place value, and basic operations which provide the foundation for proportional reasoning. As students' progress through their understanding of whole numbers, fractions, decimals, ratios, and percentages, they build fluency in interpreting and manipulating numerical information. This developmental trajectory enables students to recognize and make use of structure, attend to precision, and reason flexibly about numerical relationships, including proportionality.
 2. Algebraic Reasoning Thinking - The progression of algebraic thinking starts with identifying and analyzing patterns to create mathematical models. Students advance from early pattern recognition to exploring functions (e.g., linear, exponential, and quadratic) and developing symbolic representations to model mathematical phenomena. As they deepen their algebraic thinking, they learn to algebraically express regularity in repeated reasoning, construct viable arguments, and critique the algebraic reasoning of others as they solve authentic problems in collaborative spaces.
 3. Geometric Reasoning and Measurement - Development in geometrical reasoning begins with recognizing shapes, symmetry, and measurement concepts. Over time, students expand their spatial awareness to include transformations, trigonometry, and spatial modeling. As they progress, students engage in conjecture, reasoning inductively and deductively, and verifying their conclusions. They learn to use multiple representations to analyze and reason about spatial phenomena and apply these skills to solve both abstract and practical problems.
 4. Reasoning with Data, Statistics, and Probability - The ability to reason with data and statistics develops as students move from organizing and interpreting information to engaging with variability, probability, and uncertainty. As they progress, they develop statistical models, analyze patterns, and question data sources critically. This growth includes using tools and technology to synthesize information and communicate findings effectively. By the time they reach advanced levels, students are prepared to apply data-driven decision making in complex, real-world contexts.
- E. Adoption and effective implementation of High-Quality Instructional Materials (HQIM) supports access to daily effective mathematics instruction for all students.
- F. Students' attitudes toward math, tied to their math identity, need consistent support throughout their learning journey. To build positive math identities, instruction should include opportunities for mathematical modeling and reasoning, exploring connections between ideas, and strengthening reasoning skills through productive struggle and collaboration. Additionally, students should have experiences that help them see themselves as capable mathematicians, develop a sense of belonging in the mathematics classroom, and recognize the relevance of mathematics in their lives and communities (Aguirre, et al., 2013).

IV. Policy Standards

A. ACCESS AND EQUITABLE MATHEMATICS OPPORTUNITIES

1. By School Year (SY) 2026-2027, LEAs must implement a Multi-Tiered System of Supports (MTSS) for mathematics instruction to provide responsive, differentiated support that meets the needs of all students, including those requiring intervention, enrichment, or acceleration.
 - a. MTSS ensures real-time, evidence-based support aligned with grade-level standards, structured across three tiers:
 - i. **Tier I:** High-quality, differentiated instruction in the classroom by licensed math teachers using grade-level, standards aligned curricular resources. Tier I instruction is designed for all students and incorporates Universal Design for Learning (UDL) principles to provide scaffolding for students who need additional support, enrichment for advanced learners, and an inclusive learning environment that fosters confidence and reduces math anxiety.
 - ii. **Tier II:** Small-group instruction for students needing additional support or enrichment beyond Tier I. This instruction reinforces core content, builds prerequisite skills necessary for grade-level success, and/or provides opportunities for deeper engagement with mathematical concepts for students who would benefit from content extension.
 - iii. **Tier III:** Intensive, individualized support for students with significant learning needs or those requiring an accelerated progression. This includes tailored interventions, foundational skill development, and mentoring for emotional growth and confidence.
 - b. School-based structures and schedules for MTSS must be designed to facilitate the consistent implementation of Tier II and Tier III instruction during the school day without disrupting Tier I instructional blocks. Additional opportunities for Tier II and Tier III instruction can be provided after school or during the summer.
 - c. MTSS is a framework for providing tiered support, not a system for categorizing students into fixed tiers. Schools must regularly review student progress and ensure that movement between levels of support occurs dynamically. Support should be adjusted at the content module level (e.g., unit, topic, or instructional cycle), but at a minimum, student progress must be reviewed, and support must be refined after each end-of-unit summative assessment.
 - d. LEAs must develop and implement protocols for identifying and supporting students who have not reached proficiency in number and operation, algebraic thinking, geometrical reasoning, and reasoning with data and statistics ~~as identified in MSDE's Numeracy Development Framework.~~
 - i. School and district leaders should prioritize MTSS in mathematics to enhance student proficiency by the end of elementary school. Further details will be in MSDE's MTSS Framework and MTSS Math Guidance.

- ii. LEAs should leverage mathematics interventionists to provide targeted, research-based support for students requiring additional assistance beyond core instruction (Jimerson et al., 2016; Roach & Elliott, 2008). These interventionists should support Tier II and Tier III instruction by reinforcing foundational and prerequisite skills, deepening conceptual understanding, and providing data-driven interventions.
- 2. Beginning in SY 2026-2027, LEAs shall develop a process to identify and support students who exhibit difficulties with learning mathematics, including students with disabilities. To support their numeracy development, identified students shall receive supplemental instruction (Gersten et al., 2009) aligned to their identified needs through MTSS which include:
 - a. Explicit and systematic instruction that prioritizes the use of mathematical language, manipulatives, visual representations (including number lines), word problem structures, and dedicated time for developing fact fluency;
 - b. A proactive, school-wide framework for supporting and increasing academic, behavioral, and social emotional outcomes for all students
 - c. Program-specific monitoring tools that LEAs should use to collect and analyze intervention data to make instructional decisions; and
 - d. All mathematics learning goals in student Individualized Education Programs should be reviewed annually to ensure alignment with core grade level content and student numeracy development;
 - e. Math-specific language goals that are clearly defined to support Multilingual Learners in developing the academic vocabulary, reasoning skills, and communication strategies necessary for full engagement with mathematics (Aguirre et al., 2012; Moschkovich, 2015; Zwiers et al., 2017). These goals should be intentionally integrated into instruction, with ongoing scaffolds and progress monitoring.
- 3. By SY 2027- 2028, all LEAs must develop and implement an accelerated mathematics course progression that is an evidence-based, continuous process that provides students with multiple opportunities to ~~advance~~ **accelerate** in mathematics based on readiness and interest. Acceleration decisions should:
 - a. Be data-driven, flexible, and equitable,
 - b. Use a multi-tiered approach that includes in-class opportunities, and
 - c. Support individual student needs.
- 4. ~~By SY 2027-2028~~ All students entering grades 3-7 should be evaluated for math acceleration readiness at least once a school year based on multiple data points such as formative and summative assessment progress, teacher observations, parent observations, and student reflection. ***Beginning in SY 2027-2028, each LEA shall develop a system for identification and structure for implementation. This system and structure should be fully implemented by SY 2028-2029.***

- a. Beginning in grade 3, every school must offer an accelerated mathematics course progression that allows access to Integrated Algebra 1 by grade 8 for students who demonstrate readiness. Progressions must ensure students receive instruction or demonstrate mastery in all core content for each grade level.
 - b. All students enrolled in accelerated pathways are expected to demonstrate mastery in accelerated course content. LEAs and schools are responsible for providing timely and robust supports for students who struggle in accelerated courses.
 - c. LEAs must implement automatic mathematics course acceleration progressions for all students who achieve the highest level of proficiency level on state assessments in grades 3-6.
 - i. In grades 3-4, additional data points should be reviewed to determine readiness for acceleration for students who achieve proficiency on the state assessment.
 - ii. In grade 5, all students who achieve proficiency should be placed on a progression aligned to enrollment in Integrated Algebra 1 by grade 8.
 - d. Acceleration course progressions should provide students with access to Integrated Algebra before high school.
 - e. Full expectations for acceleration practices can be found in MSDE's Mathematics Acceleration Guidance released by Summer 2025.
5. ~~Beginning SY 2027-2028~~ **By SY 2028-2029**, LEAs shall adhere to a minimum daily requirement of 60 cumulative instructional minutes or the equivalent of 300 weekly minutes for all math courses in kindergarten through grade 8. ~~Exemplar schedule models aligned to MTSS will be provided in guidance.~~
6. Beginning in SY 2025-2026, LEAs shall review all scheduling policies and practices to reduce or eliminate exclusionary tracking in mathematics education and ensure students are purposefully grouped in classrooms where all students have access to effective mathematics instruction and robust support within a formal MTSS structure.
7. By SY 2026-2027, school schedules should be aligned to the MTSS expectations and the expectations below:
 - a. In early grades PreK-1, schools must maintain heterogenous mathematics classrooms. Flexible grouping should be utilized to support and enrich student learning.
 - b. In elementary grades 2-5, schools should purposefully and regularly regroup students for math instruction based on LEA developed MTSS math structures, including **opportunities for** accelerated math ~~classes~~ **progressions**.
 - c. In middle grades 6-8, schools must provide math intervention during the school day for students who demonstrate the need for additional support. In alignment with MTSS, intervention scheduling should be in addition to Tier 1 instruction, flexible, and allow students to transition in and out of ~~support courses~~ **tiered support opportunities** throughout the school year.

8. In high school (grades 9-12), schools must provide access to a variety of secondary mathematics ~~pathways~~ opportunities that align with different career and academic interests.
 - a. Students who demonstrate challenges with mathematics content should always remain enrolled in mathematics courses aligned to grade-level standards in addition to appropriate co-requisite support courses when warranted (Alexander et al., 2003; Fong et al., 2014; Logue et al., 2019).
9. In collaboration with MSDE, LEAs should incorporate support for numeracy development into their community engagement initiatives.
 - a. Beginning in SY 2025-2026, MSDE will develop grade level family guides to support families with understanding and supporting core math concepts for each grade level.
 - b. Beginning in SY 2025-2026, LEAs should hold regular forums throughout the school year to support families with understanding core content in each grade level and how they can best support students.
 - c. LEAs should develop and implement a mechanism to discuss changes to mathematics instruction, structures, and systems with families and community stakeholders.
10. LEAs will be required to submit annual reports to MSDE detailing student outcomes, aligned to the strategies implemented to provide equitable access. MSDE will develop and communicate a template for reporting by Summer 2027.

B. COLLEGE AND CAREER READINESS MATH STANDARD PROGRESSION

1. LEAs shall prepare for full implementation of the revised mathematics standards and course progression for grades PreK-12 by SY ~~2028-2029~~ 2029-2030.
 - a. Beginning in SY 2026-2027, LEAs shall implement curriculum and instruction aligned to prekindergarten through grade 8 Maryland College and Career Readiness (MCCR) mathematics standards.
 - b. All schools must shift from the current Algebra I – Geometry – Algebra II (AGA) secondary mathematics course progression to an Integrated Algebra course progression that launches students into their chosen mathematics pathway.
2. ~~Beginning in SY 2027-2028~~ By SY 2028-2029, LEAs shall implement curriculum and instruction aligned to PreK-Integrated Algebra 1 math standards for all students enrolled in Algebra for the first time.
 - i. Beginning in SY 2028-2029, LEAs shall implement curriculum and instruction aligned to PreK-Integrated Algebra 2 math standards for all students who completed Integrated Algebra 1 the prior school year.
11. Beyond SY ~~2028-2029~~ 2029-2030, all students should follow the PreK-12 course sequence culminating in ~~secondary math pathways~~ the approved opportunities within Maryland's secondary mathematics program.
 - ~~b. Revised math standards will include an emphasis on the development of fluency with number operations and algebraic procedures, contextual application, and connections to financial literacy.~~
 - c. MSDE shall develop repositories where the mathematics education community can access instructional resources to support implementing revised math standards, including the integrated course sequence, financial literacy applications, and differentiated resources to support students with disabilities.
12. ~~Beginning in SY 2027-2028~~ By SY 2029-2030, all courses beyond Integrated Algebra 1 and 2 must be aligned to secondary math ~~pathway standards~~ course frameworks. These frameworks define the purpose, learning goals, and instructional expectations for approved secondary mathematics courses. Schools and districts must provide access to a variety of secondary mathematics ~~pathways~~ opportunities that align with different career and academic interests.
13. In alignment with the Launch Years Task Force recommendations, the secondary math ~~pathways program~~ must include Quantitative Reasoning, Data and Data Analytics, Algebraic Foundations of Calculus, and Statistics and Probability reflect diverse student interests and goals as outlined in Appendix C. District and school leaders must ensure that these pathways programs are flexible and allow for movement between them based on student progress or evolving interests. students have flexibility to design and adjust their individual mathematics program based on their progress, goals, and evolving interests. Collectively, courses must offer varied mathematical experiences, with individual courses emphasizing one or more of the following:
14. Quantitative reasoning ~~pathways~~, which develops real-world mathematical skills in problem-solving, modeling, financial literacy, and data-driven decision-making.

- i. ~~Data and~~ Data analytics are increasingly essential, and this mathematics ~~pathway~~ builds foundational skills in data analysis, programming, and mathematical reasoning. It leverages technology to explore real-world datasets and prepare students for a data-driven future.
 - ii. ~~The~~ Algebraic foundations of calculus ~~pathway is designed for~~ ~~prepare~~ students pursuing STEM fields. ~~These foundations~~ provide a deep exploration of functions and change in preparation for Calculus.
 - iii. Statistics and probability builds students' understanding of data, uncertainty, and statistical inference. ~~This content~~ focuses on using quantitative research on real-world phenomena to enhance understanding of relationships in the world around us.
 - d. District leaders are encouraged to develop innovative models for course offerings including but not limited to dual enrollment and centralized courses in cases where there are limited course offerings.
- 3. COMAR 13A.03.02.03- High school mathematics graduation requirements ~~beginning with any student who enrolls in Algebra for the first time in school year 2027-2028~~ shall be updated to reflect:
 - a. four credits and four years of mathematics in high school,
 - b. two of the four credits with instruction in Integrated Algebra 1 and Integrated Algebra 2 aligned with the statewide assessment for ~~Integrated~~ Algebra, and two credits aligned to ~~courses in secondary mathematics pathways~~ *approved courses in Maryland's secondary mathematics program.*
 - c. in which Integrated Algebra is a prerequisite.
- 4. LEAs are responsible for ongoing engagement with parents and students to communicate the expectations and content of revised math standards and course progression. MSDE will provide resources to support communication.

C. SYSTEM OF SUPPORT FOR EDUCATORS

1. Beginning in Spring 2025, LEA system and instructional leaders shall engage in professional learning and information sessions to understand the upcoming changes and start aligning their planning with the revised math standards and prioritized instructional strategies being developed by MSDE.
2. By Fall 2025, LEAs shall identify a team to participate in the initial professional learning and serve as LEA liaisons to support shifts in math standards, Integrated Algebra courses, and secondary math pathways.
 - a. MSDE will lead initial professional learning, transitioning to a collaborative model with LEA liaisons to build LEA capacity for ongoing professional learning.
 - b. LEA Liaison teams will be responsible for ongoing collaboration and feedback with MSDE.
 - c. By Spring 2026, LEAs should be prepared to lead professional learning related to revised math standards and instructional shifts.
3. By Spring 2027, MSDE will develop a Maryland Effective Mathematics Educator course. This course will be available to all math educators, special educators, ML educators, coaches, interventionists, and administrators as a component of their Individualized Professional Development Plan (IPDP) towards licensure renewal. LEAs shall collaborate with MSDE to communicate the availability of this course to all educators and provide ongoing opportunities for educator course participation.
4. Beginning Spring 2025, MSDE shall initiate a statewide effort to engage families, community members, and local organizations in supporting mathematics education.
 - a. Beginning in SY 2025-2026, LEAs shall implement their community engagement initiatives developed in collaboration with MSDE, focusing on sustaining long-term partnerships.
 - b. LEAs should collaborate with MSDE to provide training and resources to support school-based educators to effectively engage with families and the community about best practices for supporting students in their mathematics learning experience.
5. LEAs should establish and sustain mathematics instructional coaching structures to provide ongoing, school-based support for teachers aligned to best practices for math instruction.
 - a. Instructional coaches provide essential, job-embedded support to ensure effective implementation of instructional shifts by modeling best practices and offering real-time feedback (Desimone & Pak, 2016; Domina et al., 2015; Kraft et al., 2018; Stein & Meikle, 2017).
 - b. MSDE will provide guidance and ongoing professional learning to enhance coaching effectiveness and statewide alignment.

D. ASSESSMENT AND ACCOUNTABILITY

1. By Summer 2025, MSDE will develop a Numeracy Development Framework. This will include a grade-by-grade description of the progression toward mathematical college and career readiness, aligned with the identified components of numeracy in Section III. This progression will outline the essential mathematical skills and understandings at each grade level to guide progress monitoring and inform the development of targeted support structures.
2. Beginning in SY 2026-2027, LEAs must identify and implement common unit or modular based assessments aligned to grade-level standards across all schools from grades K- 8.
 - a. LEAs should also develop systems to monitor and report progress on these assessments across the district by student group and action plan to improve student outcomes for all students.
 - b. LEA assessment systems should include support for teachers to interpret and respond to student performance.
5. Beginning in Fall 2027, MSDE will provide an annual statewide assessment data analysis report to LEAs. LEAs will be expected to review this data and their own collected course access data and develop an annual report that outlines strengths, areas of improvement, and planned actions to address any disparities. The first report will be submitted in January 2028.
6. Key data points for analysis will include:
 - a. Proficiency levels by cohort in grades 3-8
 - b. Proficiency levels for accelerated students
 - c. Progress for students performing at Level 1
 - d. Integrated Algebra 1 and 2 participation and proficiency by grade level
 - e. Percent of students enrolled in courses in each Secondary Math Pathway
3. Beginning in SY 2026-2027, LEAs are required to develop a systematic approach to family communication across the LEA to ensure the progression of student numeracy development is consistently communicated across schools and classrooms.
 - a. Families of students in kindergarten through Integrated Algebra must be notified at least twice a year (December and June) if their child is not progressing in alignment with grade-level standards based on their progress on standard aligned assessments.
 - b. LEAs must develop a clear communication plan that outlines how families are notified about their child's progress and interventions in place in alignment with the LEA's MTSS math structure.
4. Beginning with the graduating class of 2030-2031 (students in grade 9 or below in school year 2027-2028), the Math Mastery option of the College and Career Readiness standard shall be updated to reflect the revised MCCR math standards and course progression.

5. Beginning in SY 2027-2028, earning a final course grade of A, B, or C in a secondary mathematics pathways course in which Integrated Algebra is a prerequisite will be included in the Math Mastery option of the CCR standard.
6. Beginning in SY 2028-2029, LEAs shall administer the Integrated Algebra statewide assessment to all students enrolled in Integrated Algebra. ~~2 in the Winter testing window. In the final quarter and summer of each school year, LEAs shall provide responsive interventions and retesting opportunities to support students in reaching proficiency.~~

V. Timeline Overview

Timeline	Policy Implementation
Spring 2025	- MSDE Mathematics Policy Adoption - Initial Community & Educator Engagement Sessions
Summer- Fall 2025	- Adoption of revised mathematics standards for PreK- Integrated Algebra 2 - Mathematics Policy Guidance Documents released (MTSS Math, Acceleration, Integrated Algebra course frameworks) - MSDE Numeracy Development Framework released - Joint collaborative/planning with LEA Math Supervisors & Advanced Academic Supervisors
Beginning in School Year 2025-2026	- MSDE will develop grade level family guides. - LEAs should begin holding regular forums to support families and engage community stakeholders in mathematics. - Ongoing professional learning with LEA Liaisons - LEA led professional learning beginning by Spring 2026 - Integrated Algebra 1 course resources released by Spring 2026-Fall 2026 - Secondary Math ~~pathways-standards~~ Program Framework developed
Beginning in School Year 2026-2027	- Implementation of revised standards for PreK-8 - LEAs implement common standard aligned assessments across all schools - Equitable scheduling practices implemented in all schools - Ongoing professional learning - LEAs develop a process to identify and support students who exhibit difficulties with learning mathematics - LEAs initial implementation of Multi-Tiered System of Supports (MTSS) for mathematics instruction (to be refined in future SYs) - MSDE Maryland Effective Mathematics Educator course released (Spring 2027) - Required parent notification regarding student grade level standard proficiency progress - Secondary Math ~~pathways-standards~~ Program Framework adopted - Integrated Algebra 2 course resources released by Spring-Summer 2027
Beginning in School Year 2027-2028, By School Year 2028-2029	- Implementation of revised standards and course for Integrated Algebra 1 - Grade 3 – 7 acceleration progression implemented in all schools 15. LEAs adhere to minimum daily/weekly instructional minutes in math. - LEA annual data reflection and action reports - Secondary Math ~~pathways-standards~~ Program Framework implemented
Beginning in School Year 2028-2029, By School Year 2029-2030	- Implementation of revised standards and course for Integrated Algebra 2 - Integrated Algebra State Assessments

VI. Responsibilities

Local Education Agencies (LEAs), the Maryland State Department of Education (MSDE), and the Maryland State Board of Education will collaboratively work to ensure that all students across Maryland have equitable access to high-quality mathematics instruction to prepare them for their college and career aspirations. This collaboration requires a shared system of responsibilities:

LOCAL EDUCATION AGENCY RESPONSIBILITIES

1. Collaborate with MSDE to implement policies that promote equitable access to high-quality mathematics instruction and MTSS math structures as outlined in MSDE guidance.
2. Adopt and implement instruction aligned to the revised MCCR math standards and course progression.
3. Develop and implement grade level aligned standard assessment systems to identify students for intervention and acceleration and ensure family communication.
4. Provide ongoing, job-embedded, professional learning for all educators to ensure consistency in implementation of equitable math instruction aligned to grade level standards and numeracy development progression.
5. Regularly monitor and report the effectiveness of implementation of courses aligned to MCCR mathematics standards, including the new integrated algebra courses, and secondary mathematics pathways.
6. Provide opportunities for continuous engagement with all stakeholders regarding the district's math programming and student progress.

MARYLAND STATE DEPARTMENT OF EDUCATION RESPONSIBILITIES:

1. Provide guidance and resources to support implementation of courses aligned to MCCR mathematics standards, including the new integrated algebra courses and secondary mathematics pathways.
2. Develop guidelines, protocols, and resources to support LEAs in implementing inclusive practices including Numeracy Development Framework, MTSS guidelines, templates for monitoring and reporting, and annual LEA data reports.
3. Provide ongoing professional learning opportunities and resources to educators, system and instructional leaders, counselors, and support staff to support equitable access and opportunities in mathematics education statewide.
4. Monitor the implementation of math policy initiatives and adjust as needed.
5. Provide opportunities for continuous engagement with all stakeholders regarding statewide math programming and student progress.

MARYLAND STATE BOARD OF EDUCATION RESPONSIBILITIES

1. Review and approve the Mathematics Policy developed by MSDE.
2. Review the implementation of this policy in alignment with improving student achievement in mathematics for all Maryland students by analyzing LEA and MSDE annual reports. All reported student data will be disaggregated by student groups.

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Appendix A – Two-Year Integrated Algebra Pathway

The Integrated Algebra Pathway consists of two full-year courses that strategically integrate algebra, geometry, and statistics to highlight their interconnected nature, which fosters a more coherent and deeper understanding of mathematics. **This approach does not compress multiple years of coursework into a shorter timeframe; rather, it thoughtfully weaves together essential mathematical ideas while refining the content scope to focus on the most relevant and widely applicable content.** By prioritizing key core concepts and reducing redundancy, this approach ensures that all students build a strong mathematical foundation while shifting more specialized topics to secondary math pathway courses where they can be explored in greater depth. Additionally, it streamlines the content by removing topics that do not meaningfully contribute to students' mathematical reasoning and problem-solving abilities, making space for deeper engagement with essential mathematics.

COURSE CONTENT OVERVIEW

Integrated Algebra 1

Integrated Algebra 1 is a full-year course that introduces students to mathematical structures through patterns of change, data analysis, and geometric reasoning. The course focuses on comparing linear and exponential patterns, formalizing them into functions, and using data and statistics as a context for exploration. Geometry concepts are interwoven, particularly in the study of lines, angles, transformations, and spatial relationships among congruent figures and special shapes.

Core Topics (Not exhaustive)

- Recognizing and Modeling Patterns of Change
 - Identify and model linear and exponential trends in bivariate data.
 - Explore and analyze linear and exponential functions.
 - Model real-world scenarios with linear and exponential functions and use multiple representations to solve problems in context.
- Quantitative Reasoning and Data Analysis
 - Represent, analyze, and compare one-variable data sets.
 - Justify claims or formulate conjectures based on real-world data sets.
- Developing Proficiency in Equations and Inequalities
 - Solve and interpret linear equations, inequalities, and systems.
 - Graph and analyze solution sets.
 - Solve systems using multiple methods.
- Exploring Geometric Structures and Transformations
 - Explore rigid motions and their role in congruence.
 - Verify triangle congruence and figure properties.
 - Use coordinate geometry to analyze geometric relationships.

- Exploring Structure and Transformations of Functions
 - Investigate absolute value and piecewise functions using technology.
 - Analyze graph transformations of key functions.

Integrated Algebra 2

Integrated Algebra 2 is a full-year course that builds on Integrated Algebra 1. It delves into quadratic functions as a new pattern of change, providing a foundation for further algebraic growth and deeper connections to data and data analysis. Students also engage in an in-depth exploration of similarity, right triangle trigonometry, and circles, while making connections to algebraic concepts.

Core Topics (Not exhaustive)

- Extending Patterns of Change
 - Compare patterns of change in linear, exponential, and quadratic relationships.
 - Recognize and interpret quadratic functions across tables, graphs, and equations.
- Transforming and Solving Quadratic Equations
 - Describe transformations of quadratic functions.
 - Convert quadratic functions between standard, vertex, and factored forms to reveal key properties.
 - Solve quadratic equations using graphing, factoring, completing the square, and the quadratic formula.
- Modeling with Data and Polynomial Expressions
 - Use regression and digital tools to model data with quadratic functions.
 - Perform polynomial operations and analyze their effects on graphs and equations.
- Exploring Geometric Relationships
 - Explore dilations, similarity, and proportionality.
 - Apply the Pythagorean Theorem and trigonometry to right triangles.
 - Model real-world objects using geometric relationships and equations.
 - Investigate circles.

Note: Integrated Algebra 1 and 2 are recommended to be implemented as full-year courses to reduce gaps in students' mathematical experiences and allow students to engage with the intended progression of concepts as a continuous narrative. This structure provides the most effective pacing and aligns with the intentions of the course frameworks.

RATIONALE FOR SHIFT

Addressing Misalignment with Post-CCR Opportunities

- The *Blueprint for Maryland's Future* initiates post-CCR opportunities at the end of 10th grade (MSDE, 2024). However, the mathematical foundations within the traditional three-year AGA sequence are not fully developed for most students until after 11th grade.
- The two-year integrated approach identifies essential content from Algebra 1, Algebra 2, Geometry, and Statistics and restructures it across two years to better align with the [AIR study](#) findings (AIR, 2023) and the CCR opportunities defined by the Blueprint for Maryland's Future.

Ensuring All Students Access Essential Content for Post-Secondary Success by the End of 10th Grade

- The Maryland CCR Empirical Study (AIR, 2023) highlights the importance of algebraic content for post-secondary success.
- Analysis of current content standards reveals that many of these algebraic skills are not fully covered until the completion of Algebra 2.
- The AIR study finds that:
 - Many geometry standards are not highly aligned with the prerequisite competencies for post-secondary mathematics success.
 - Statistics content and standards are relevant for college and career success (Maryland CCR Empirical Study: Final Report – Exhibit 19, p. 56).
- Research from the National Center on Education and the Economy (NCEE, 2013) concludes that the most demanding mathematics in required college courses primarily derives from Algebra 1, selected Algebra 2 content, and limited Geometry topics.
- High school statistics education is increasingly essential for career readiness and provides critical data analysis skills applicable across various fields (Gould, 2010, 2023; NCTM, 2018).
- The U.S. Department of Education (2021) emphasizes that integrating statistics enhances workforce readiness through:
 - Data visualization, hypothesis testing, and performance trend analysis.

Additional Support for the Shift

- Research supports the benefits of an integrated approach to mathematics instruction (Grouws et al., 2013; Schoen & Hirsch, 2020; Tarr et al., 2013; Tauer, 2002).
- NCTM's Principles and Standards for School Mathematics states:
 - "When students see the connections across different mathematical content areas, they develop a view of mathematics as an integrated whole... As students' knowledge of mathematics, their ability to use a wide range of mathematical representations, and their access to sophisticated technology and software increase, the connections they make with other academic disciplines, especially the sciences and social sciences, give them greater mathematical power" (NCTM, 2014, p. 354).

- The development of the two-year integrated sequence has been informed by:
 - K-12 mathematics experts, higher education faculty, and College Board prerequisites (see Appendix B).

Appendix B. Prerequisite Mathematics Concepts for Advanced Mathematics

AP Precalculus Prerequisite ([College Board, 2024](#))

- Proficiency with:
 - Linear functions (Integrated Algebra 1)
 - Polynomial addition and multiplication (Integrated Algebra 2)
 - Factoring quadratic trinomials (Integrated Algebra 2)
 - Using quadratic formula (Integrated Algebra 2)
 - Solving right triangle problems involving trigonometry (Integrated Algebra 2)
 - Solving linear and quadratic equations and inequalities (Integrated Algebra 1 & Integrated Algebra 2)
 - Algebraic manipulation of linear equations and expressions (Integrated Algebra 1 & Integrated Algebra 2)
 - Solving systems of equations in two and three variables (Integrated Algebra 1)
- Familiarity with:
 - Piecewise-defined functions (Integrated Algebra 1)
 - Exponential functions and rules for exponents (Integrated Algebra 1 & Integrated Algebra 2)
 - Radicals (Integrated Algebra 2)
 - Complex numbers (Integrated Algebra 2)

AP Statistics Prerequisite ([College Board, 2024](#))

- A second-year course in algebra (Integrated Algebra 2)

IB Mathematics: Diploma Programme (DP) Math Courses

- No specific pre-requisites required

Appendix C – Secondary Math Pathways Program

An effective mathematics curriculum should reflect the diverse interests, goals, and opportunities available to students beyond high school. Expanding mathematics pathways in high school invites students to engage with mathematical content that is relevant to their future studies and careers while providing coherent experiences that maintain rigor and support their growth as mathematicians (AMATYC, 2014; Dana Center, 2020; NCTM, 2018; PCAST, 2012; Saxe et al., 2015).

Higher education institutions are diversifying undergraduate mathematics pathways to better align with various academic and career fields (Douglas et al., 2023; USM, 2019). Secondary mathematics pathways can build on this shift by offering flexible pathways that prepare students not only for college but also for direct career entry and technical training. Aligning secondary mathematics with diverse post-secondary opportunities ensures students are equipped for success in STEM, data-driven industries, social sciences, and other fields requiring strong quantitative reasoning.

Providing students with informed choices in their mathematics coursework fosters motivation, engagement, and ownership of learning. Research suggests that when students are given opportunities to choose experiences that align with their interests, goals, and aspirations, they demonstrate increased intrinsic motivation, effort, task performance, and self-efficacy (Patali et al., 2008).

OVERVIEW OF THE FOUR SECONDARY MATHEMATICS PATHWAYS PROGRAM

The ~~four~~ high school mathematics ~~pathways program~~—~~Quantitative Reasoning, Data and Data Analytics, Algebraic Foundations of Calculus, and Statistics and Probability~~—offer students flexible options that align with their interests, aspirations, and post-secondary goals. Students ~~may follow a single pathway or blend pathways~~ ~~should experience a series of program courses~~ to align with their evolving interests and post-secondary plans. ~~Some example course frameworks are listed below.~~

~~For example, a student in the coursework emphasizing data and data analytics pathway who decides to pursue data science in college may incorporate coursework from emphasizing algebraic foundations of calculus for additional preparation. Similarly, a student focused on quantitative reasoning for its real-world applications might later integrate statistics and probability if they develop an interest in research.~~

Pathways Emphasizing Quantitative Reasoning (QR)

~~This framework~~ ~~type of pathway~~ focuses on applying mathematical skills in real-world contexts, including strategic problem-solving, modeling, financial literacy, and data-informed decision-making. It equips students with the ability to analyze patterns, make evidence-based arguments, and apply mathematical reasoning to project planning, budgeting, and technical problem-solving (Akar et al., 2023; Daro & Asturias, 2019; Dana Center, 2020; Steen, 2001).

- **College Connections:** Supports students pursuing degrees in humanities, social sciences, and liberal arts, where QR is essential for understanding research and trends.
- **Career Connections:** Beneficial for careers in business, public policy, and technical fields where data-driven decision-making is critical.

Pathways Emphasizing Data, Statistics, and Data Analytics

As computational literacy and data fluency become increasingly important, ~~this type of pathway~~ **these frameworks** provide students with foundational skills in data analysis, programming, and mathematical reasoning for data-driven explorations (CBMS, 2016; DiSessa, 2018; Erickson, 2019; Boaler, 2019; GAISE, 2016; Gould, 2023; MAA, 2004; NCTM, 2018). Students engage with technology to analyze real-world datasets, preparing them for a data-centric future.

- **College Connections:** Prepares students for programs in Data Science, Computer Science, and Business Analytics, social sciences, health sciences, and related fields where data analysis and statistical reasoning are essential.
- **Career Connections:** Supports careers in Data Analytics, Cybersecurity, Marketing Research, and other fields that require expertise in Big Data, trend data, and quantitative decision-making.

Pathway Emphasizing Algebraic Foundations of Calculus

~~This type of pathway is~~ **These frameworks are** designed for students pursuing STEM fields and provides a deep exploration of functions and change as preparation for Calculus. Research indicates that taking advanced math courses, like Calculus, has long-term benefits for labor market success (Chen, 2013; Riegle-Crumb et al., 2019; Black et al., 2021; Rose & Betts, 2001; U.S. Bureau of Labor Statistics, 2021).

- **College Connections:** Essential for students entering STEM programs such as Engineering, Physics, and Mathematics, where Calculus is a foundational requirement.
- **Career Connections:** Critical for careers in Engineering, Medicine, and Scientific Research, where advanced mathematical modeling and problem-solving skills are required.

Statistics and Probability

~~With the growing demand for statistical literacy, this pathway develops students' understanding of data, uncertainty, and statistical inference. Engaging in mathematical inquiry (i.e., quantitative research) related to real-world phenomena strengthens conceptual understanding and critical thinking skills (MAA, 2004; CBMS, 2016; GAISE, 2016; Gould, 2010).~~

- ~~• **College Connections:** Supports fields such as Social Sciences, Health Sciences, and Law, where data analysis and statistical reasoning are essential.~~
- ~~• **Career Connections:** Applicable to any profession requiring trend analysis, risk assessment, and decision-making based on quantitative models.~~

(Content combined/moved to Data, Statistics, and Data Analytics)

History

A. Adopted March 25, 2025

B. Revised August 2026

Summary

The Maryland State Department of Education (MSDE) received 274 public comment submissions during the public comment period for the proposed revisions to the Maryland Mathematics Policy and the proposed Secondary Mathematics Program. Of these, 257 submissions addressed the revised mathematics policy implementation timeline or other components of the mathematics policy, while 17 submissions focused exclusively on the proposed Secondary Mathematics Program.

Respondents generally supported providing additional time for implementation of the revised mathematics policy while identifying important considerations related to instructional time, scheduling, local flexibility, staffing, and maintaining access to a well-rounded educational experience.

Comments on the proposed Secondary Mathematics Program were generally supportive and focused primarily on implementation guidance, expanding rigorous postsecondary mathematics opportunities, and making sure all students have equitable access.

This report summarizes the major themes identified through the public comment process, provides representative excerpts from respondents, and describes how public feedback informed or will inform MSDE's recommendations and implementation planning.

Comments on the Revised Mathematics Policy Implementation Timeline

A total of 257 public comment submissions addressed the proposed Revised Mathematics Policy Implementation Timeline or other components of the Mathematics Policy.

Of the total 257 comments, **97 submissions (37.7%) contained comment language identical to at least one other submission, falling within 5 distinct groups of duplicate responses.** These duplicate submissions were reviewed separately and retained in all summary statistics presented in this report.

Table 1. Public Comment Positions on the Proposed Timeline Revisions

Position on the Proposed Timeline Revisions	Number	Percent
Explicitly supported proposed timeline revisions	121	47.1%
Explicitly opposed a proposed delay or supported an original implementation timeline	3	1.2%
Did not express a clear position on the proposed timeline	133 (97*)	51.7%

COMMENTS SUPPORTIVE OF TIMELINE REVISION TIMELINE (121 OUT OF 257 COMMENTS)**Table 2. Public Comment Themes and MSDE Responses: Supporting Proposed Timeline Revisions**

Timeline Position	Summary of Feedback	Illustrative Excerpts	MSDE Response
Supported proposed timeline revisions (n = 121)	Respondents generally viewed the additional implementation time as necessary to support thoughtful statewide implementation. Common reasons included allowing additional time for local planning, scheduling, professional learning, curriculum alignment, stakeholder communication, and development of implementation guidance. Many supporters also recommended that MSDE provide model schedules and additional implementation resources before statewide implementation.	"I support the delayed implementation of the minutes of instruction requirement to SY28-29." "I support delaying implementation of the proposed mathematics policy until the 2028–2029 school year. The additional time recognizes the significant planning and implementation challenges that school systems face." "The revised implementation timeline provides LEAs with additional time to thoughtfully plan for successful implementation... The additional year should be used to ensure that language access, professional learning, family communication, and equitable placement practices are fully developed before implementation."	MSDE agrees that successful implementation requires adequate planning and support. The revised timeline was developed to provide LEAs with additional time to prepare for implementation while allowing MSDE to continue developing guidance, implementation resources, and professional learning to support a successful statewide transition. The timeline extension is also flexible, allowing LEAs to implement ahead of the required timeline if they are ready.

COMMENTS OPPOSING TIMELINE REVISION TIMELINE (3 OUT OF 257 COMMENTS)

Table 3. Public Comment Themes and MSDE Responses: Opposing Proposed Timeline Revisions

Timeline Position	Summary of Feedback	Illustrative Excerpts	MSDE Response
Opposed delaying implementation (n = 3)	Only three respondents explicitly opposed delaying implementation or recommended maintaining the original implementation timeline. These comments generally reflected a preference to move forward with implementation as originally proposed in response to implementation planning already underway.	"Implement it, and cut the band-aid" "Keep the timeline the same and don't delay it." "Implementation for Integrated Algebra 1 and Integrated Algebra 2 should remain on the original timeline... For many districts, implementation based on the original timeline provides the needed catalyst for change and transformation."	The revised timeline preserves flexibility, allowing for districts that are ready to continue implementation on the original timeline while providing additional time and support for districts that need it.

COMMENTS WITH NO CLEAR TIMELINE POSITION – FOCUSED ONLY ON INSTRUCTIONAL MINUTES REQUIREMENT (133 OUT OF 257 COMMENTS)

A substantial portion (97) of the comments addressing the proposed instructional time requirement were submitted using identical or substantially similar language. All duplicate submissions-addressed concerns related to the proposed instructional time requirement within 5 distinct groups of duplicate responses.

Table 4. Public Comment Themes and MSDE Responses: Not Addressing Proposed Timeline Revisions

Timeline Position	Summary of Feedback	Illustrative Excerpts	MSDE Response
Focused on already established policy (No clear timeline position) (n = 132)	More than half of respondents did not express a clear position on the proposed implementation timeline. Instead, these comments focused on the proposed instructional time requirement, particularly its potential impacts on scheduling, elective offerings, staffing, and local flexibility. These themes are summarized in the following section.	"Increasing the number of minutes that math is taught will create problems with scheduling that will affect all other subjects as well as change the cost of staffing." "Requiring more math time will come at the expense of other important subjects... local school systems should have flexibility in how they structure the school day."	See Table 5 for breakdown of themes.

Timeline Position	Summary of Feedback	Illustrative Excerpts	MSDE Response
Other policy feedback (No clear timeline position) (n = 1)	One respondent expressed concern that removing the explicit reference to the Numeracy Development Framework (NDF) from the policy's monitoring requirements could reduce statewide consistency in monitoring student progress and requested greater transparency regarding the rationale for this change.	"The NDF provided a normed language tool for all LEAs... MSDE should... provide transparency for the shift away from the use of the tool as a baseline for student numeracy development across grade levels."	MSDE remains committed to the NDF as a foundational resource for communicating and monitoring students' numeracy development. The explicit reference to the NDF was removed from the monitoring requirements to provide LEAs with greater flexibility in how they design local progress-monitoring systems, not to diminish the role of the NDF. MSDE will continue partnering with LEAs to support implementation of the framework and to identify effective ways to integrate its learning progressions and common language into local practice.

Table 5. Major Themes in Public Comments Related to Mathematics Instructional Time Requirement

Note: Individual comments frequently addressed multiple recurring topics. As a result, comments were coded into more than one thematic category when appropriate; therefore, counts are not reported for individual themes.

Theme	Summary of Public Comments	Illustrative Excerpts	MSDE Response
Scheduling	Respondents expressed concerns that the proposed instructional time requirement would require significant changes to middle school master schedules. Many noted the challenges of accommodating additional mathematics instructional time while preserving instructional time for other subjects and existing scheduling structures.	"Increasing the number of minutes that math is taught will create problems with scheduling that will affect all other subjects as well as change the cost of staffing." "The proposed instructional time requirement would require significant changes to middle school scheduling that many districts cannot implement without affecting other programs."	MSDE recognizes that implementing the instructional time expectation may require changes to local scheduling. The revised implementation timeline provides additional planning time, and implementation guidance will include resources to support LEAs in evaluating scheduling options that align with local contexts.
Access to Electives and Other Programs	Respondents expressed concerns that increasing mathematics instructional time could reduce student access to arts, music, world languages, career and technical education, physical education, intervention periods, and other elective or exploratory opportunities.	"Can the next school year be spent ... determining whether it can be done in less time to avoid cuts to other content areas?" "...students should not lose access to music, art, world languages, and other electives."	MSDE recognizes the importance of maintaining a well-rounded educational experience. The revised policy establishes a statewide baseline for mathematics instructional time so that every Maryland student has equitable access to sufficient opportunities to develop mathematical understanding, regardless of where they attend school.

Theme	Summary of Public Comments	Illustrative Excerpts	MSDE Response
Local Flexibility	Respondents requested that LEAs retain flexibility in determining how instructional expectations are met. Comments emphasized that differences in school schedules, grade configurations, staffing models, and local priorities may require different implementation approaches.	"Local school systems should have flexibility in how they structure the instructional day while meeting the intent of the policy."	MSDE agrees that local priorities are important factors when implementing the instructional time expectations for mathematics. The revised implementation timeline provides additional planning time, and implementation guidance will include resources to support LEAs in evaluating scheduling options that align with local contexts.
Staffing, Funding, and Resources	Several respondents identified staffing, funding, and other operational considerations as potential challenges associated with implementing additional mathematics instructional time.	"Increasing the number of instructional minutes will require additional staffing and financial resources that many school systems do not currently have."	MSDE recognizes that implementation may have resource implications that vary across LEAs. The revised implementation timeline provides additional time for local planning while MSDE continues to work with LEAs to identify implementation supports and resources.

Comments on the Proposed Secondary Mathematics Program

A total of 17 public comment submissions addressed the proposed Secondary Mathematics Program. Public comments are grouped according to the overall nature of the feedback and include corresponding MSDE responses.

The section concludes with a summary of feedback from the Accountability and Implementation Board (AIB) for the Blueprint for Maryland's Future related to the proposed Secondary Mathematics Program and MSDE's responses.

Table 1. Public Comment Positions on the Proposed Secondary Mathematics Program

Position on the Proposed Timeline Revisions	Number	Percent
Generally Supportive with Recommendations	15	88.2%
Not Supportive	2	11.8%

COMMENTS GENERALLY SUPPORTIVE WITH RECOMMENDATIONS (15 OUT OF 17 COMMENTS)

Several commenters expressed general support for the goals of the proposed Secondary Mathematics Program. Many of these commenters also offered recommendations and asked questions related to implementation, preparation, and program refinement, which are addressed below.

Table 2. Summary of Supportive Public Comments with Recommendations and MSDE Responses

Theme	Public Comment (Excerpt)	MSDE Response
Need for Implementation Guidance & Support	“Clear implementation guidance, ongoing professional learning, and transparent evaluation measures will be essential to ensuring the program achieves its intended goals.”	MSDE recognizes that successful implementation will require clear guidance, educator preparation, family communication, and ongoing evaluation. MSDE will continue working with local education agencies to develop implementation supports, gather feedback, and monitor whether the program is expanding access to high-quality post-Integrated Algebra opportunities as intended.
	“Require LEAs to publish teacher professional learning plans and curriculum resource timelines... [and provide] clear, standardized parent-facing guidance.”	

Theme	Public Comment (Excerpt)	MSDE Response
Expanding Opportunities to Include Less-Rigorous Options	“The course pathway past the required courses is a lot of harder college-level math that might not be attainable or warranted for some students.” “I [understand] postsecondary readiness, but how is this benefiting students that are not taking advanced math classes?”	The Secondary Mathematics Program vision begins with the belief that every student should continue progressing mathematically through rigorous coursework that aligns with their postsecondary goals. Rather than reducing expectations or continuing to offer less rigorous options, the program expands access to high-quality opportunities that emphasize different mathematical applications while also requiring meaningful advancement beyond Integrated Algebra 2.
Equitable Access & Supporting Student Success	“The policy and course frameworks should include guidance on language supports, collaboration between mathematics and Multilingual Learner educators, translated family communications, and equitable placement practices...”	Equitable access is a central expectation of the Secondary Mathematics Program. Implementation resources and professional learning will help local education agencies provide appropriate language and instructional supports, communicate effectively with families, and ensure that English proficiency does not become a barrier to rigorous mathematics opportunities.
Adequate Preparation for Advanced Mathematics	“Maryland should establish a three-course Integrated Mathematics sequence for students who intend to pursue advanced mathematics.” “Students planning to enroll in Precalculus should be required to complete the third integrated mathematics course...”	These comments primarily address the common Integrated Algebra sequence rather than the proposed Secondary Mathematics Program. The Integrated Algebra sequence was intentionally designed to provide all students with a common mathematical foundation that prepares them to enter any approved post-Integrated Algebra course, including Precalculus, without an additional preparatory course. The Secondary Mathematics Program builds on that foundation by establishing multiple rigorous pathways that support advanced mathematics and a broad range of postsecondary opportunities.

Theme	Public Comment (Excerpt)	MSDE Response
Need to Continue Expanding Opportunities	"High school students are running out of math classes to take at the schools... Now students HAVE to take [dual enrollment] in order to have a senior year math class."	The Secondary Mathematics Program is intended to address this concern by expanding rigorous mathematics options within high schools after Integrated Algebra 2. Students should not need to enter college-level coursework simply because no meaningful senior-year course is available locally. Dual enrollment may remain an appropriate option, but it should not be the only way for students to continue developing mathematically.
Supporting Student Readiness	"Students are not prepared for the algebraic reasoning required for most upper-level math classes... [They need to] build up basic math skills first."	The Secondary Mathematics Program does not replace the foundational learning expected before students complete Integrated Algebra 2. Approved courses must build from that foundation while allowing students to deepen and apply prior learning in more advanced contexts. Implementation must therefore include appropriate support for students who need additional time to strengthen prerequisite knowledge while continuing to engage in grade-appropriate mathematics.
Postsecondary Partnerships & Course Expectations	"Re-engage community colleges as active partners..." "preserve meaningful opportunities for students who require additional time and support..." and provide "clearer criteria for what constitutes 'meaningful mathematical advancement.'"	Community colleges and other postsecondary partners have been and continue to be important to the development and implementation of the program, particularly for dual enrollment, workforce preparation, and transfer pathways. Courses may revisit prior mathematics when doing so leads to deeper reasoning, application, and advancement; they may not function primarily as repetition or remediation.

COMMENTS NOT SUPPORTIVE (2 OUT OF 17 COMMENTS)

Table 3. Summary of Public Comments Not Supportive of the Proposed Secondary Mathematics Program

Theme	Public Comment (Excerpt)	MSDE Response
Instructional Approaches to Mathematics	"Maryland should move back to the basics... There is solid evidence... [that] providing direct instruction in Math, rather than inquiry-based learning is what improves student learning... Continuing to lower standards... is a detriment to the future of the state as [a] whole."	The Secondary Mathematics Program does not prescribe instructional methods or reduce expectations for student learning. Instead, it establishes common expectations for rigorous mathematics courses offered after Integrated Algebra 2. Every approved course must provide substantive mathematical advancement beyond Integrated Algebra 2 through reasoning, problem solving, mathematical modeling, communication, and the application of mathematics.
Graduation Requirements	"Requiring all students to complete 4 HS credits of math limits students' choices... Please offer true choice for students, once they've shown mastery of career-ready skills."	The requirement that students complete four mathematics credits in high school is established in Maryland graduation requirements and is not changed by the proposed Secondary Mathematics Program. Instead, the program guarantees that the four years of mathematics is meaningful by expanding the range of rigorous post-Integrated Algebra opportunities available to students.

AIB IMPLEMENTATION FEEDBACK

AIB's recommendations focused on supporting successful statewide implementation, strengthening alignment across educational systems, and making sure students, families, and LEAs have the guidance needed to implement the new program effectively.

Table 4. AIB Implementation Recommendations and MSDE Responses

Implementation Focus Area	MSDE Response
Establishing clear postsecondary mathematics “pathways” for students	MSDE will continue collaborating with higher education and other partners to make sure approved post-Integrated Algebra courses support diverse postsecondary goals and that clear pathway guidance is available for students, families, and LEAs.
Aligning the Secondary Mathematics Program with existing state initiatives	MSDE will continue coordinating implementation with Career and Technical Education, dual enrollment, College and Career Readiness policies, and other statewide initiatives to support coherent mathematics opportunities for students.
Supporting LEAs in planning and implementing new course opportunities	MSDE will provide implementation resources related to course offerings, scheduling, educator preparation, and professional learning. This work has already started.
Providing clear guidance for student selection and advising	MSDE will develop communication and advising resources to help students and families understand available course options, sequencing, and connections to postsecondary opportunities. This work has already started.