Hamilton School District
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Math Pathways Options

7th Grade Pathways Opportunities

Today's Agenda

- Welcome and Introductions
- Our Vision for Math Instruction
- Shifts in Mathematics
- Our Math Pathways Options

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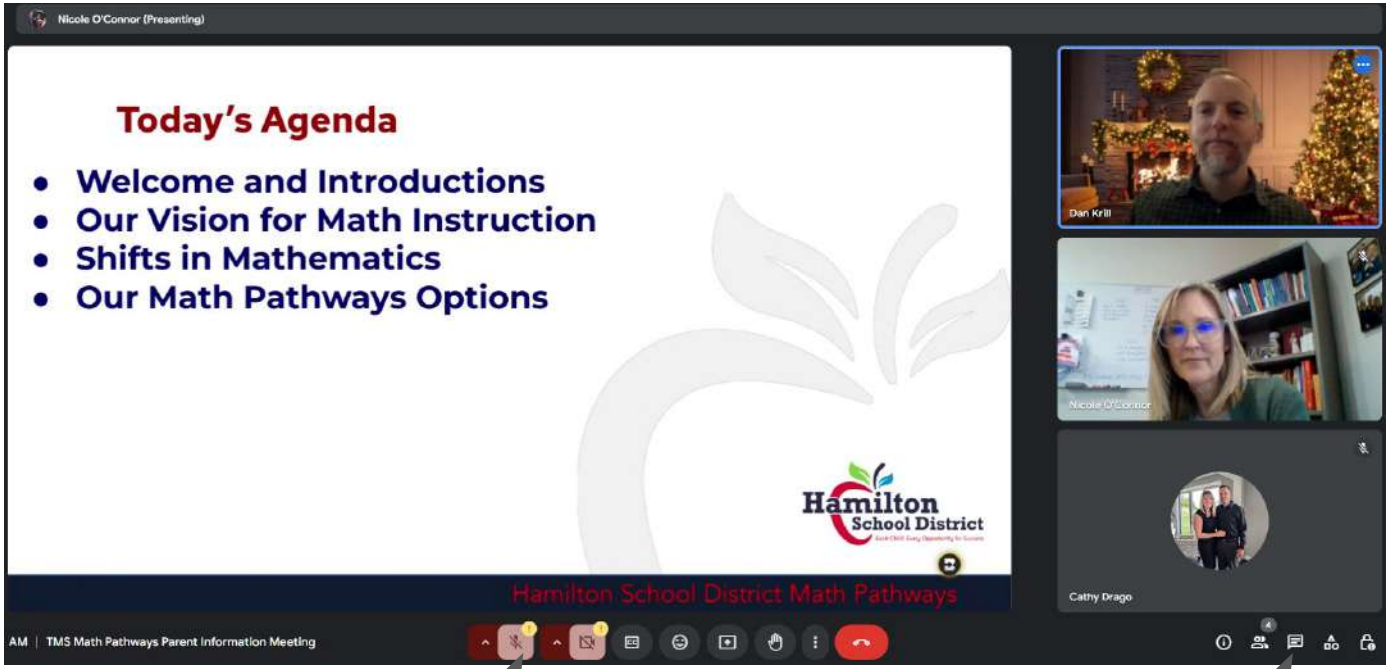
Math Pathways Options

7th Grade Pathways Opportunities



Please make sure your microphone is turned off

Use the chat feature to comment or ask questions.

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Spring 2021

We form a team to analyze current state of mathematics instruction in Hamilton and revise our math vision

2021-2022

Create specific criteria for acceleration and communicate math programming changes to staff and families

2022-2023

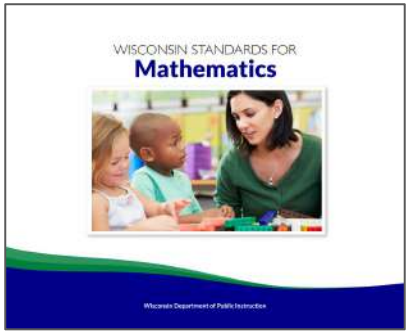
Professional learning with Math Institute of Wisconsin around high quality math instruction

2023-2024

Teacher coaching and continued professional development around high quality math instruction

Fall 2024

Math Pathways course options begin at Templeton Middle School



"Students need to be able to formulate, represent, and solve problems; explain and justify solutions and solution paths; and see mathematics as sensible, useful, and worthwhile."

x

y

%

x/2y

42:9

Our vision for mathematics...

Where all mathematical learners are valued, driven by curiosity, inspired by challenges, and committed to deep, conceptual understandings in order to navigate the world as flexible thinkers and doers of mathematics.

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Our values for mathematics...

collaboration

risk taking

flexible thinking

problem solving

critical thinking

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Universal Math Instruction

- Rigorous, high-level mathematical thinking
- Rich assessment tasks
- Extension and enrichment of content
- Emphasis on developing deep understandings

Simplify the following expressions

1. $(25 + 5) \times 3 - 13$
2. $19 + 12 \times 2 - 4$
3. $42 + 32 \div 4$
4. $12 + 34 \times 2 \div 2$
5. $(4 + 3) \times (2 + 5)$
6. $2 + 14 \times 5 - 5$
7. $22 + 4 \times 5 - 13$
8. $13 - 42 \div 7 + 2$
9. $15 + 2 - 14 \div 7$
10. $(18 - 7) \times 2$

Order of Operations Menu Task:

Build as *few* expressions as possible to satisfy each constraint at least once.

Use whichever numbers you wish and the operations along with addition, subtraction, multiplication, division, and/or exponentiation.

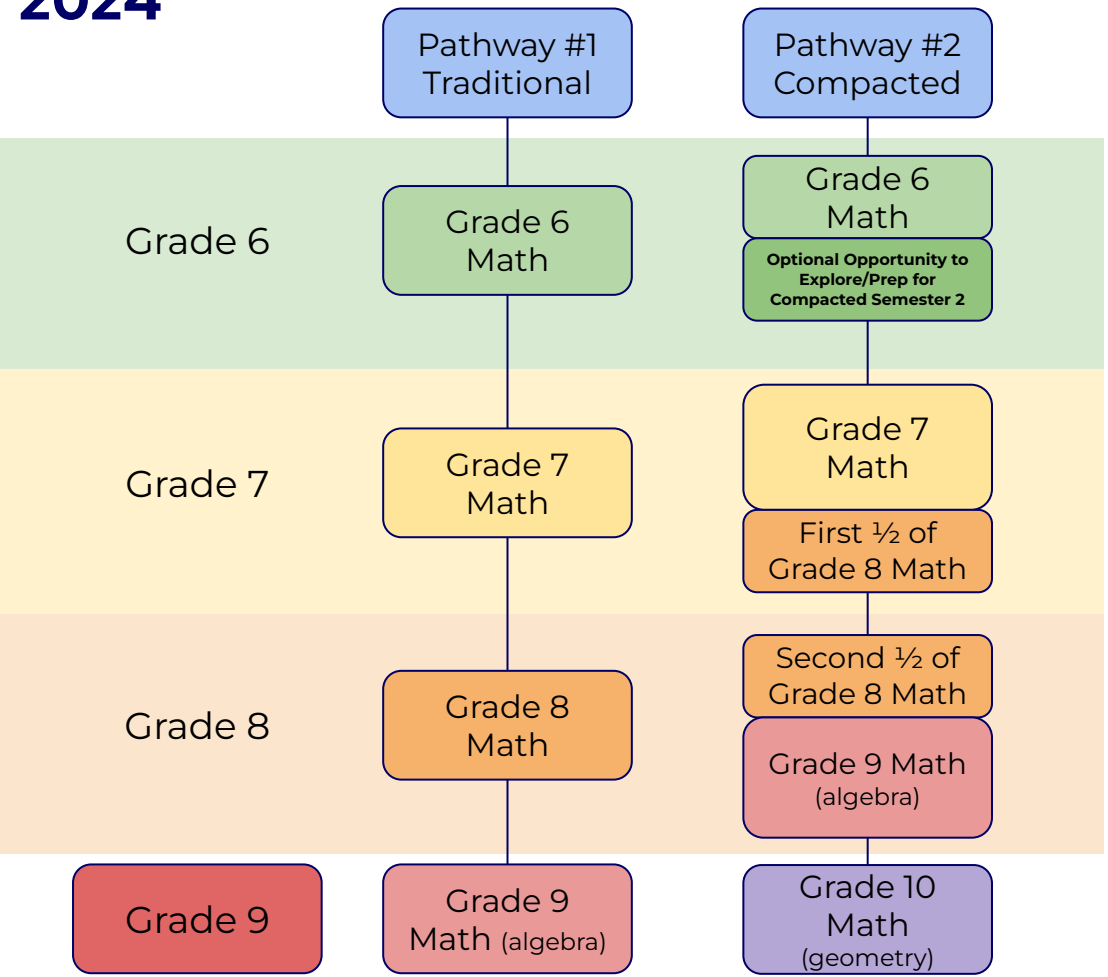
A.	Contains only the numbers 2, 3, 4 & 5	B.	Contains only the operators +, - and x
C.	Uses division but still evaluates to an integer	D.	Contains an exponent and two different operators
E.	Evaluates to 54	F.	Has two sets of necessary brackets
G.	Only uses double digit numbers	H.	Evaluates to -4

Which constraints pair nicely?
Which constraints cannot be paired?
Is it possible to solve in 2, 3, or 4 expressions?

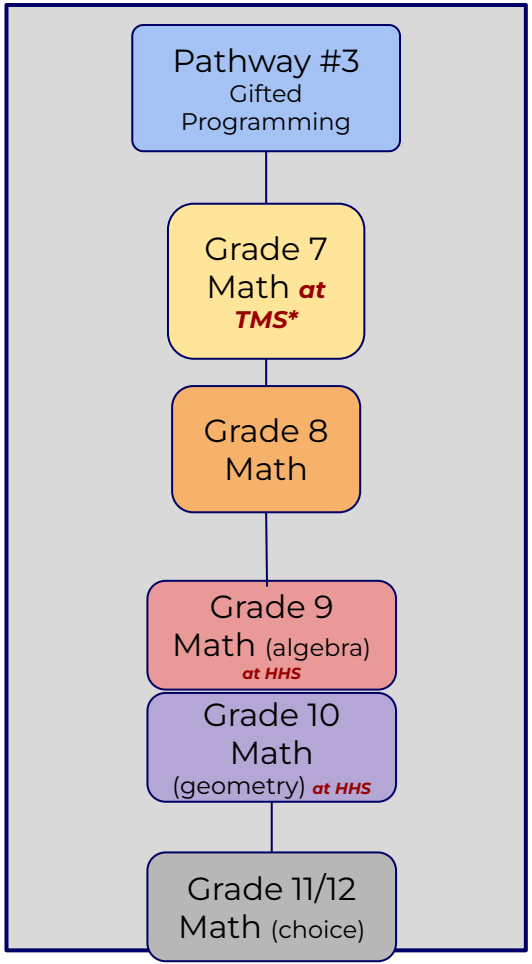
Describe how and why you built each expression.
Be sure to identify which expressions satisfy which constraints.

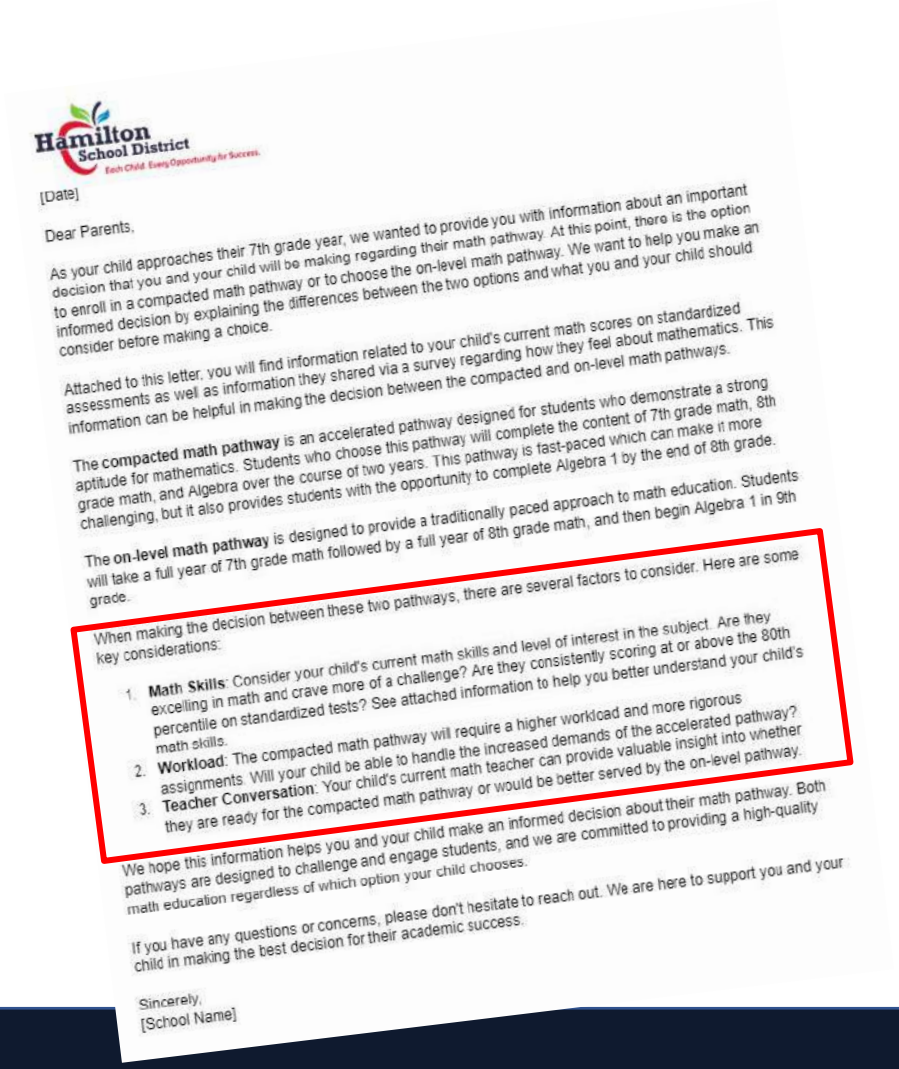
Math Pathways Beginning in Grade 7

2024



Gifted Mathematics Programming (98/99th percentile)





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[Date]

Dear Parents,

As your child approaches their 7th grade year, we wanted to provide you with information about an important decision that you and your child will be making regarding their math pathway. At this point, there is the option to enroll in a compacted math pathway or to choose the on-level math pathway. We want to help you make an informed decision by explaining the differences between the two options and what you and your child should consider before making a choice.

Attached to this letter, you will find information related to your child's current math scores on standardized assessments as well as information they shared via a survey regarding how they feel about mathematics. This information can be helpful in making the decision between the compacted and on-level math pathways.

The **compacted math pathway** is an accelerated pathway designed for students who demonstrate a strong aptitude for mathematics. Students who choose this pathway will complete the content of 7th grade math, 8th grade math, and Algebra over the course of two years. This pathway is fast-paced which can make it more challenging, but it also provides students with the opportunity to complete Algebra 1 by the end of 8th grade.

The **on-level math pathway** is designed to provide a traditionally paced approach to math education. Students will take a full year of 7th grade math followed by a full year of 8th grade math, and then begin Algebra 1 in 9th grade.

When making the decision between these two pathways, there are several factors to consider. Here are some key considerations:

1. **Math Skills**: Consider your child's current math skills and level of interest in the subject. Are they excelling in math and crave more of a challenge? Are they consistently scoring at or above the 80th percentile on standardized tests? See attached information to help you better understand your child's math skills.
2. **Workload**: The compacted math pathway will require a higher workload and more rigorous assignments. Will your child be able to handle the increased demands of the accelerated pathway?
3. **Teacher Conversation**: Your child's current math teacher can provide valuable insight into whether they are ready for the compacted math pathway or would be better served by the on-level pathway.

We hope this information helps you and your child make an informed decision about their math pathway. Both pathways are designed to challenge and engage students, and we are committed to providing a high-quality math education regerdless of which option your child chooses.

If you have any questions or concerns, please don't hesitate to reach out. We are here to support you and your child in making the best decision for their academic success.

Sincerely,
[School Name]

Compacting will be a family decision, **not** a district decision.

Student Self Assessment of Math Interest

How do you feel about math?

I'm excited for the opportunity to be challenged in math over the next 2 years.

I do my math homework without teacher or parent prompting.

I take advantage of math enrichment and challenge problems when they are provided.

I take ownership of my learning.

When frustrated in math class I....

I'm interested in a career that involves a lot of math.

I am interested in activities and hobbies that involve math (coding, puzzles, etc.)

High School Mathematics Course Pathway Examples

	Freshman	Sophomore	Junior	Senior
Student A	Geometry (1)	Advanced Algebra (1) OR Intermediate then Advanced Algebra (2)	Pre-Calc I & II (2) OR Pre-Calc I & II and AP Stats (2)	AP Calculus (2)
Student B	Algebra (1) then Geometry (2)	Advanced Algebra (1) OR Intermediate then Advanced Algebra (2)	Pre-Calc I & II (2) OR Pre-Calc I & II and AP Stats (2)	AP Calculus (2)
Student C	Algebra (1)	Geometry (1) then Advanced Algebra (1)	Pre-Calc I & II (2) OR Pre-Calc I & II and AP Stats (2)***	AP Calculus (2)
Student D	Algebra (1) OR Algebra A & B (2)	Geometry (1)	Advanced Algebra (1) OR Intermediate then Advanced Algebra (2)	Any of the following: • Pre Calc I & II (2) • Advanced Topics (1) • AP Stats (2) • Business Math (1)
Student E	Algebra (1) OR Algebra A & B (2)	Principles of Geometry (1)*	Any of the following: • Intermediate Algebra (1) • Business Math (1)	Any of the following: • Advanced Algebra (1) • Business Math (1) • Intermediate Algebra (1)

Applied Math Courses At Hamilton High School

These courses DO NOT count as math credits toward graduation.

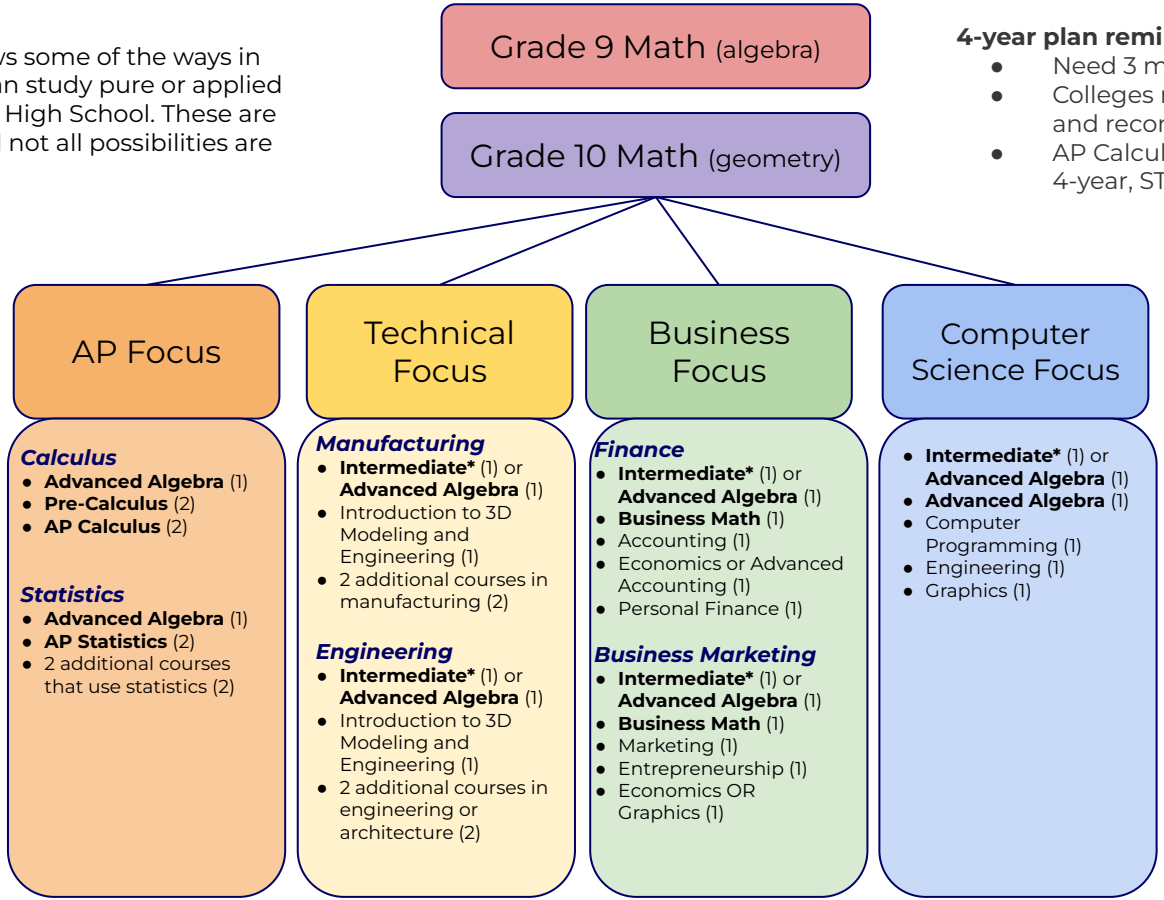
Computing (Courses that would signify deep applied math learning. May require prerequisite course completion)	**Business** (Courses that would signify deep applied math learning. May require prerequisite course completion)	**Science** (Courses that would signify deep applied math learning. May require prerequisite course completion)	**Other** (Courses that would signify deep applied math learning. May require prerequisite course completion)
• Advanced Machining and Automation (AET) • Digital Electronics and Automation (AET) • Graphics III • Graphics Communications/Production (AET) • Digital Design and Web Development (Business) • Video Game Programming (Business) • AP Computer Science (Business)	• Personal Finance (Business) • Advanced Accounting (Business) • AP Macroeconomics (SS) • AP Microeconomics (SS)	• AP Biology • AP Physics 2 • AP Physics C • AP Chemistry • AP Environmental Science • AP Psychology (SS) • AP Stats* *Though AP Stats is housed in the math department, it is often considered applied math and colleges typically don't view it as a math credit. Further, many of the applied sciences are heavy in data analysis.	• AP Music Theory • Architecture and Building Construction II (AET) • Wood Design and Manufacturing III (AET) • Welding Fabrication II

A visual of pure vs. applied math pathways

The diagram shows some of the ways in which students can study pure or applied math at Hamilton High School. These are just examples and not all possibilities are represented.

4-year plan reminders:

- Need 3 math credits to graduate
- Colleges require Advanced Algebra and recommend 4 years of math
- AP Calculus is recommended for 4-year, STEM-related degrees



*Intermediate Algebra is a transition to Advanced Algebra or stand-alone course depending on student need and post-secondary goals.

Applied Math Certificate

To further acknowledge those students who venture into a rigorous study of applied mathematics, there will soon be an applied math certificate (graduating 2024-25). The certificate is meant to do the following:

- Acknowledge the connections math has to applied areas of study
- Encourage students to venture into career/personal interests
- Endorse applied math learning as worthy within the math department

Requirements To Earn Certificate

- Complete at least 4 years of mathematics
- Complete any 3 courses listed under the categories of computing, business, science, or other
- Apply for certificate by May 1st of senior year: Application

Upon approval, students will receive a certificate of completion and be recognized at graduation for their interdisciplinary, applied math learning.

Benefits to Students

- Recognizes deep applied math learning
- Provides artifact for college entrance essays and/or scholarships
- Encourages rigor within an interest area as most courses on the list have prerequisite requirements
- Acknowledgement at graduation for student and family pride
- Brings an interdisciplinary focus to our math programming

Frequently Asked Questions