

**Shared Key  
Interests**

1. Advance student learning, achievement, and success by keeping it at the heart and as the filter for our decision making.

2. Utilize research-based curricula that reflects 21st Century themes and applications and are responsive to the needs and potential of all students, preparing them for a global society.

3. Provide real-life, diverse learning opportunities with practical applications in the classroom and beyond.

4. Inform and engage the community in shaping educational strategy and formulating responses to change.

5. Attract, retain, and develop a high quality, diverse, creative, and innovative workforce of leaders.

6. Provide safe, secure, flexible, inviting, and well-maintained environments that nurture student well-being and enhance teaching and learning.

7. Identify, integrate, and expand technology to foster adaptability and maximize learning for all.

8. Foster mutually beneficial partnerships and collaborations that expand learning opportunities and resources.

**Wausau School District**

Board of Education Meeting Agenda

In Compliance with the Wisconsin Open Meeting Law

Public Notice s.19.84 (3)  
Exemptions s.19.85

James Bouché, President  
Karen Vandenberg, Clerk

A meeting of the **AUDIT OF THE BILLS COMMITTEE** will be held in the **PDC Meeting Room in the Longfellow Administration Center, 415 Seymour Street, Wausau, Wisconsin 54403 at 5:00 PM** on **Monday, May 9, 2022.**

- I. Call to Order
- II. Board Workshop - Middle School Math
- III. Adjourn

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\*\*NOTICE IS HEREBY GIVEN THAT SCHOOL BOARD MEMBERS WHO ARE NOT MEMBERS OF THE AUDIT OF THE BILLS COMMITTEE MAY ATTEND THIS COMMITTEE MEETING AS TO CONSTITUTE A QUORUM OF THE BOARD OF EDUCATION. ANY SUCH BOARD MEMBER ATTENDANCE WILL BE FOR INFORMATION GATHERING, DISCUSSION, AND/OR RELATED PURPOSES AND WILL NOT RESULT IN DIRECT DECISION MAKING BY THE BOARD OF EDUCATION AT THE COMMITTEE MEETING.\*\*

Action Item\*

NOTICE POSTED: Friday, May 6, 2022, at 12:00 PM

By: \_\_\_\_\_

**NOTICE SENT TO:**

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# Middle School Math Proposal

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	Current Offerings	Proposed Offerings
6th Grade	Basic Math 6 Math 6	Math 6
7th Grade	Basic Math 7 Math 7 Enriched Math 7* Pre-Algebra**	Math 7 Pre-Algebra***
8th Grade	Basic Math 8 Math 8 Enriched Math 8* Algebra 1	Math 8 Algebra 1

\* John Muir Only

\*\* In-person and WAVE options

\*\*\* WAVE with support during the school day

# Middle School Math Programming

## 2022-23 Wausau School District



**Our Mission ... To advance student learning, achievement, and success.**

**Jennifer Rauscher, Director of Secondary Education**  
**Mark Schommer, Math Specialist/MTSS**

# Middle School Math Proposal

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# Purpose and Process

## **Purpose:**

To provide additional information requested by the School Board, students, and families and to share research and data that has raised questions related to our current systems and practices

## **Process:**

1. Foundational Touchstones
2. Learning Targets
3. Core Definitions
4. What does the research say?
5. Wausau School District Data Analysis



# Foundational Touchstones

## Open-Minded:

- Math has changed drastically in the past 10-20 years.
- Mathematically, the expectations and needs of the world are not what they were even 5 years ago.
- Math is a vital part of today's life, not the algorithms but the logical reasoning and data analysis instructed every day.



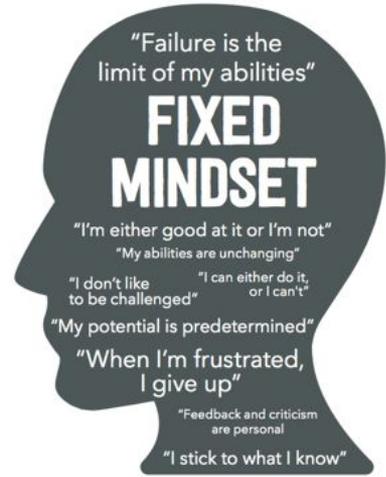
Seek first to understand to be understood

# Foundational Touchstones

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## Release Past Experiences:

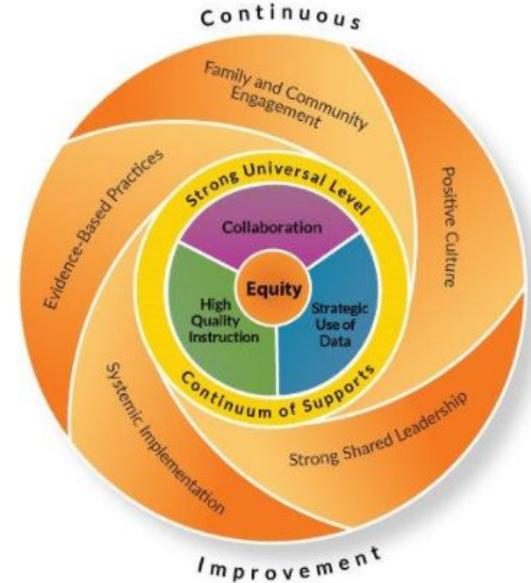
- We are trying to change how math is perceived.
- Building current systems only on past experiences will continue to encourage the results, both academic and personal, that we have seen in the past.



# Foundational Touchstones

## Systems focus on All Students:

- WSD is a large system. This gives students many options to succeed; however, it does not allow for unlimited choice of pathways.
- Our system needs to ensure that each student has an individual opportunity to succeed while emphasizing the overall needs of all students.



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# Foundational Touchstones

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**We are always striving for high quality instruction:**

- Teachers, with the support of their Professional Learning Communities (PLC's), coaches, and administrators, are constantly working to improve teaching and learning.



Think win-win

# Today's Learning Targets

- Understand the **effects of our current systems**.
- Understand the **impact of the expectations** on students and student learning.
- Create systems that not only **encourage all students** to meet standards and readiness guidelines but also allow for **individual opportunities to excel**.



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# Core Definitions

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## Tracking:

- A method used by many secondary schools to group students according to their perceived ability, IQ, or achievement levels. Students are placed in high, middle, or low tracks in an effort to provide them with a level of curriculum and instruction that is appropriate to their needs. The practice of tracking began in the 1930s and has been the subject of intense controversy in the past 20 years. (National Association of Secondary Principals, 2006)

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## Ability Grouping within a Classroom:

- Ability grouping divides students **within** a class based on academic ability, past performance, or student interests. It is the intent for ability grouping assignments to be **flexible**, which means that students can easily move in and out of grouping assignments based on performance. Groups are designed to move on a consistent basis, lasting no longer than **a week or two**. (Bolick, Rogowsky, 2016)

## Heterogeneous Grouping (Mixed Ability):

- When a diverse group of students is put in the same cooperative learning group. This method of heterogeneous grouping allows students to learn from each others' differences and actively interact with diverse individuals while at the same time sharing their unique abilities and interests.

# Wausau's Current Math Structure

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WSD uses **tracking** in the middle school years. Although students can move to a different level (Basic/At-Level/Enriched) from one year to another, the instruction for a full-year, except in very rare cases, is determined by their initial course placement made in Winter of the previous year.

*“**Tracking is insidious** because it places some students into qualitatively different or lower levels of a mathematics course and, in some cases, puts students into terminal mathematics course pathways that are not mathematically meaningful and do not prepare them for any continued study of fundamental mathematical concepts.”*

*(Leinwand, Milou, 2021)*

*“**Ability grouping is not the same as tracking** in the modern classroom. While it could be called flexible tracking, it is called ability grouping because of the flexibility considering teachers evaluations and student placement (Tieso, 2003). This is an important difference to make because **tracking is harmful in its methods and implementations due to its lack of flexibility.**”*

*(Hamline, 2019)*



# What does the Research Say?

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1. Why does every student need the Algebra 2 opportunity?
2. Why does every student need at least Algebra 1 readiness by the end of middle school?
3. What are the effects of tracking?

We will start with what the some of the same items the math team reviewed when they unanimously came to the conclusion that Basic Math should no longer be offered in 6th or 7th grade.



Students are **Career Ready** if they have identified a career interest and meet two of the behavioral and experiential benchmarks listed below. In addition, students entering the military upon graduation must meet the passing scores on the Armed Services Vocational Aptitude Battery (ASVAB) for each branch of the military.

- ❑ 90% Attendance
- ❑ 25 hours of Community Service
- ❑ Workplace Learning Experience
- ❑ Industry Credential
- ❑ Dual Credit Career Pathway Course
- ❑ Two or more organized Co-Curricular activities
- ❑ Passing the ASVAB



In mathematics, our circle of influence includes the dual credit career pathway course options and the ASVAB.

The ASVAB assesses math concepts through the beginning of Algebra 2.

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Students are **College Ready** if they meet either the academic indicators **or** standardized testing benchmarks listed below.

GPA 2.8 out of 4.0 and one or more of the following Academic Indicators:

- Advanced Placement Exam (3+)
- Advanced Placement Course (A, B or C)
- Dual Credit College English and/or Math (A, B or C)
- College Developmental/Remedial English and/or Math (A, B or C)
- Algebra II (A, B or C)
- International Baccalaureate Exam (4+)

ACT Exam Testing Benchmarks  
(minimum score)

English (18) | Reading (22)

Science (23) | Math (22)

Additional Factors that Contribute to College Success

Earning As, Bs, Cs; FAFSA Completion; Enrollment in career pathway course sequence; College Academic Advising; Participation in College Bound Bridge Programs; Senior year math class; Completion of a math class after Algebra II



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# Why **Algebra 1 Ready** by 9th Grade for **ALL** Students?

Simplified high school science sequence

	East	West	Math Connections
Grade 9	<b>Physical Science</b> or Biology	Integrated Bio/ <b>Physical Science</b> 9 or Accelerated 9/10	<b>Algebra 1*</b> recommended for <b>Physical Science</b>
Grade 10	Biology or <b>Chemistry</b> Additional electives are available such as Astronomy/Earth Science	Integrated Bio/Physical Science 10 or Various Science Electives ( <b>Chemistry</b> , <b>Physics</b> , etc.)	<b>Algebra II</b> recommended for <b>Chemistry*</b> and <b>Physics</b>
Grade 11+	<b>Chemistry</b> , <b>Physics</b> , IB Sciences, and/or additional electives	<b>Chemistry</b> , <b>Physics</b> , AP Sciences, and/or additional electives	<b>Algebra II</b> recommended for <b>Chemistry*</b> and <b>Physics</b>

\*concurrent registration is acceptable



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# Research Studies

Figure 1: Increase in % of students participating in de-tracked middle school math courses that took courses beyond Algebra 2 in high school

Average achievers	81%	→	91%
High achievers	89%	→	99%
Low socioeconomic status	32%	→	67%
Black and Latino students	38%	→	58%

From: Burris, Heubert, and Levin (2006)

Data collected from Columbia University



**More** high achieving middle school students in these mixed ability courses took the **AP Calculus exam** and scored **higher** than students in tracked courses.



SFUSD.org

The San Francisco School District detracked all middle school math through Geometry classes in 2014-15.

SFUSD declared detracking a **great success**, claiming that the graduating class of 2018-19, the first graduating class affected by the policy when in eighth grade, saw a **drop in Algebra 1 repeat rates from 40 percent to 8 percent** and that, compared to the previous year, about **10 percent more students in the class took math courses beyond Algebra II**.

# Research Studies

Research suggests that math tracking is not an effective practice for improving student performance, either. A 2016 meta-analysis of nearly 100 years of research found that **between-class grouping, or tracking, did not benefit students at either the high or low ends of achievement**, although fully jumping a grade can lead already high-achieving students to academically outperform same-age peers. Additionally, **children are acutely aware of where they stand in tracked classes and identify as “smart” or “not smart” based on their placement**—beliefs that can stick with them for life, according to multiple studies.

GEORGE LUCAS  
EDUCATIONAL FOUNDATION

(Berwick, 2019)

*Research shows that students in schools that have detracked - and set high expectations for all students - **scored higher** on state assessments.*



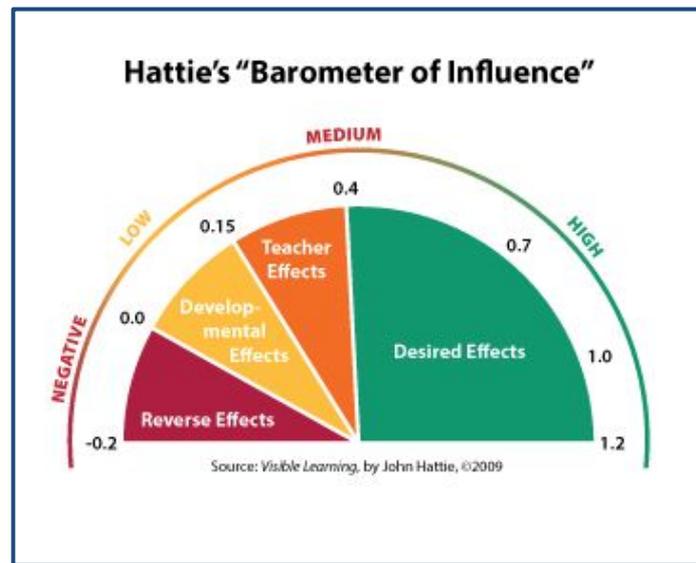
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# Research Studies

## Practices low impact or harmful...

Stereotype threat	-.33
Tracking/streaming	.12
Within grouping	.18
Ability grouping for gifted students	.30
Small Group Learning	.49
Peer Tutoring	.55
Problem Solving Teaching	.61
Teaching Strategies	.62
Acceleration	.68
Classroom Discussion	.82

"needs based instruction with flexible grouping should not be eliminated...engaging students in small group learning can be very effective provided the **grouping is flexible rather than fixed** (Hattie, 2017)."



Visible Learning for Mathematics, 2017

"Taking a grade level of students and giving one teacher the lowest performing students, another teacher average performing students, and yet another the highest performing students may be popular, but the evidence is clear that it is not the answer...These sorts of rigid long-term groupings are sometimes known as tracking and typically assume student learning needs and potential remain constant over time. This practice is **not supported by research** (Hattie, 2017)."



# Research Studies

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If detracking is to happen, school districts and states must go through the difficult process of establishing a new vision for mathematics teaching and learning that **dispels the culture of “low” and “high” students as well as “faster means smarter.”**



(NCSM Position Paper, 2019)



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# WSD Middle School Data Breakdown

## Ethnicity Percentages by Course with combined Schools

	White	Asian	Hispanic/Latino	Black	2+ Ethnicities	Special Ed.
<b>6th Gr. Basic</b>	48%	28%	11%	6%	7%	25%
<b>6th Gr. At-Level</b>	69%	18%	7%	1%	5%	4%
<b>6th Gr. Enriched</b>	79%	12%	5%	0%	5%	4%
<b>7th Gr. Basic</b>	43%	26%	12%	8%	10%	32%
<b>7th Gr. At-Level</b>	63%	22%	6%	2%	6%	6%
<b>7th Gr. Enriched</b>	68%	23%	9%	0%	0%	0%
<b>7th Gr. Pre-Algebra</b>	80%	8%	2%	2%	8%	0%
<b>8th Gr. Basic</b>	60%	23%	9%	2%	6%	26%
<b>8th Gr. At-Level</b>	64%	20%	6%	3%	8%	2%
<b>8th Gr. Enriched</b>	67%	25%	2%	0%	5%	2%
<b>Algebra 1</b>	88%	5%	2%	0%	5%	2%

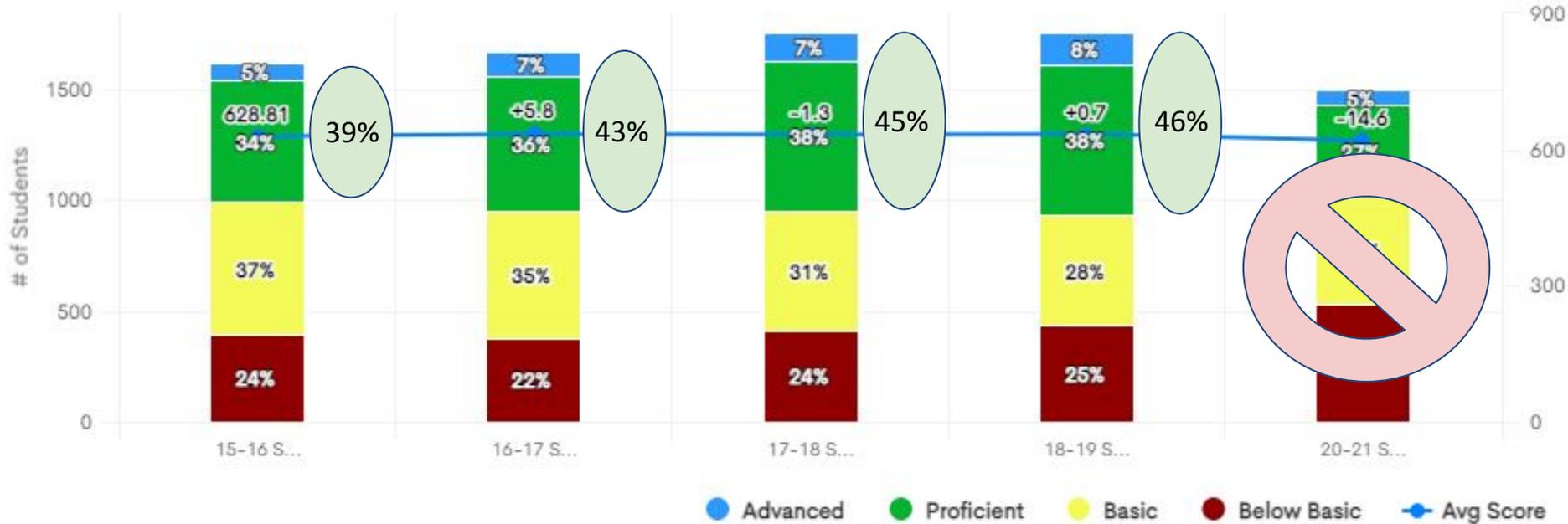
## District Percentages of Enrollment

White	Asian	Hispanic/Latino	Black	2+ Ethnicities
65%	20%	10%	N/A	5%



In a perfect situation, the district ethnicity percentages of enrollment should be reflected in the percentages by grade level course placements.

# WSD Overall Middle School Data



- 2019-20 was not assessed due to the COVID shutdown
- Note the increase in proficient students is correlated with an increase in Below Basic students



# WSD Overall Middle School Data

	John Muir		Horace Mann		State Avg
14-15	38.3	-6.7	33.9	-11.1	45
15-16	43.7	1.8	32.4	-9.5	41.9
16-17	44.3	2.1	41.4	-0.8	42.2
17-18	49.9	10.4	40.7	1.2	39.5
18-19	49.9	11.1	42.6	3.8	38.8
19-20					
20-21	33.6	0.5	30.2	-2.9	33.1

- 2019-20 was not assessed due to the COVID shutdown



# WSD Current Junior Class Outcomes

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Class of 2023: Sixth grade math course enrollment compared to 11th grade math course enrollment

Students in 2017-18 were in **Basic Math**. Of those students:

- 0% increased to above level
- 15% are at-level instruction
- 84% are not in at-level instruction

Students in 2017-18 were in **At-level Math**. Of those students:

- 13% increased to above level
- 42% are at-level instruction
- 44% are not in at-level instruction

Students in 2017-18 were in **Enriched Math**. Of those students:

- 63% maintained above level
- 23% are at-level instruction
- 12% are not in at-level instruction



# Middle School Math Proposal

Current Offerings

Proposed Offerings

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\*John Muir Only

\*\*In-person and virtual options

# Resources

- Bolick, Kristina N., and Beth A. Rogowsky. "Ability Grouping Is on the Rise, but Should It Be?" *Journal of Education and Human Development*, vol. 5, no. 2, June 2016, pp. 40–51., <https://doi.org/10.15640/jehd.v5n2a6>.
- Hattie, John, et al. *Visible Learning for Mathematics: What Works Best to Optimize Student Learning, Grades K-12*. Corwin Mathematics, 2017.
- Coe, Ted. *What's Wrong with Tracking Students by Math Ability?*, NWEA, 17 Dec. 2020, <https://www.nwea.org/blog/author/tcoe/>.
- Oh, Hyangmee, "How Different Grouping Methods Can Improve Students' Mathematical Achievement in an Appropriate Setting" (2019). School of Education Student Capstone Theses and Dissertations. 4474.
- Leinwand, Steve, and Eric Milou. *Invigorating High School Math: Practical Guidance for Long-Overdue Transformation*. Heinemann, 2021.
- "Closing the Opportunity Gap: A Call for Detracking Mathematics - NCSM." *Closing the Opportunity Gap: A Call for Detracking Mathematics*, NCSM, <https://www.mathedleadership.org/docs/resources/positionpapers/NCSMPositionPaper19.pdf>.
- Berwick, Carly. "Is It Time to Detrack Math?" *Edutopia*, George Lucas Educational Foundation, 9 Aug. 2019, <https://www.edutopia.org/article/it-time-detrack-math>.
- What One Hundred Years of Research Says about the Effects of Ability ... <https://journals.sagepub.com/doi/abs/10.3102/0034654316675417>.
- Research Detracking math Final - SFUSD Math. [http://sfusdmath.org/uploads/2/4/0/9/24098802/research\\_detrackingmath\\_final.pdf](http://sfusdmath.org/uploads/2/4/0/9/24098802/research_detrackingmath_final.pdf).



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