



9-10 Integrated Math Resource

April 22, 2024



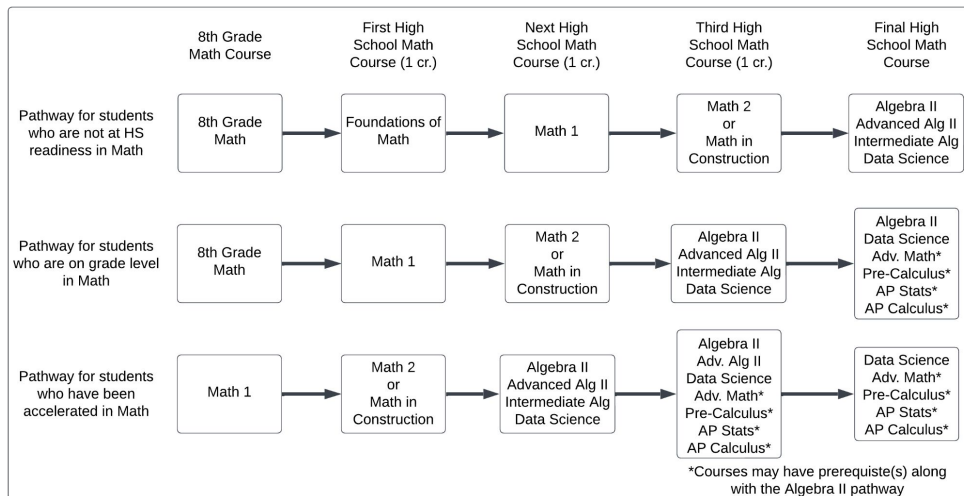
Recap of the Integrated Math 1/Math 2 Sequence

Integrated Math 1:

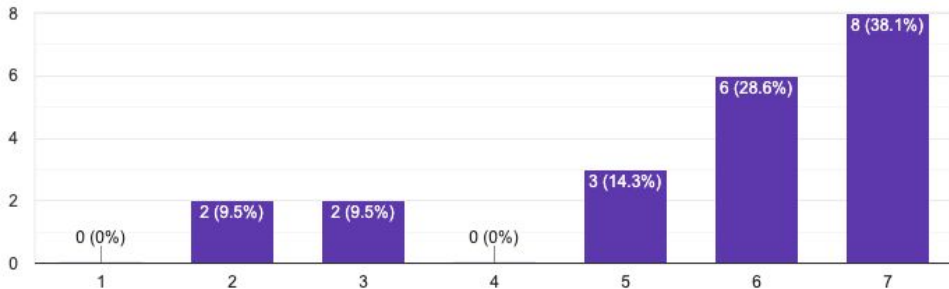
Integrated Math 1 is the first of a two year sequence of introductory high school math courses defined by the Wisconsin Standards for Mathematics. Standards instructed include: reasoning and solving equations, linear equations, inequalities, and systems of linear equations, linear and exponential functions, foundations of geometric thinking and reasoning, and an introduction to geometric principles, and statistics.

Integrated Math 2:

Integrated Math 2 is the second of a two year sequence of introductory high school math courses defined by the Wisconsin Standards for Mathematics. Standards instruction include: operations with polynomial functions, quadratic functions, complex numbers, properties of triangles, right triangle trigonometry, further investigation into two- and three dimensional geometry, and probability.



Materials Selection Process



2022-23 School Year:

- Start conversations around new materials/alignment

June, 2023

- First look at potential resources (six initial products)

December, 2023

- Board approves integrated sequence

January, 2024

- Teams get initial look at three remaining resources from June

February, 2024

- Three HS staff from each building attend vendor presentations
- Went from three to two resources

March, 2024

- 21 staff (HS math dept. and MS leaders) small group reviews
- Exit survey results

Open Up Resources (OUR)



- Originally authored by the Mathematics Vision Project
 - Combination of education specialists and HS teachers
 - Authors still teaches and uses this as their core resource
 - Designed as an Integrated Math sequence to support Utah's statewide initiative*
 - Continually modified, updated, and shared virtually
- MVP partnered with Open Up Resources in 2021
 - OUR is a non-profit publisher that provides free digital access and print materials for purchase
 - Bolstered student content by supporting educator content
 - Top rating on [EdReports](#)*, independent non-profit reviewer of K-12 materials
 - Perfect scores in "Focus and Coherence" (18/18) and "Rigor & Mathematical Practices" (16/16)
 - Meets Expectations in "Usability" (25/27)

Coherent Sequence of Content

Integrated Math 1

Sequences (A)

Linear and Exponential Functions (A)

Features of Functions (A)

Equations and Inequalities (A)

Systems of Equations and Inequalities (A)

Transformations and Symmetry (G)

Congruence, Construction, and Proof (G)

Connection Algebra and Geometry (A/G)

Modeling Data (A)

Integrated Math 2

Quadratic Functions (A)

Structures of Quadratic Expressions (A)

Solving Quadratic Equations (A)

More Functions, More Features (A)

Geometric Figures (G)

Similarity and Right Triangle Trig (G)

Circles: A Geometric Perspective (G)

Measuring Circles, Angles and Shapes (G)

Circles and Other Conics (G)

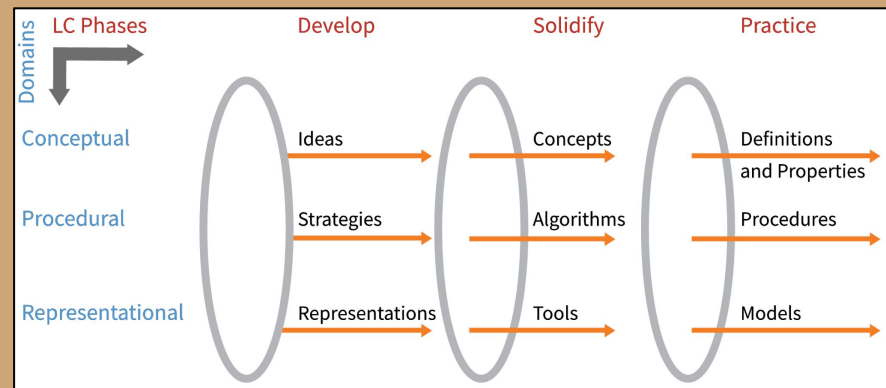
Probability (G)

Course Design

Research-based connections of Teaching,
Learning, and a Continuum of Understanding

- Teaching
 - Launch → Explore → Discuss
- Learning
 - Develop → Solidify → Practice
- Continuum of Understanding
Conceptual → Procedural → Representational
“Thinking” → “Doing” → “Communicating”

Continuum of Mathematical Instruction (CMI) Framework



Lesson Design

Launch

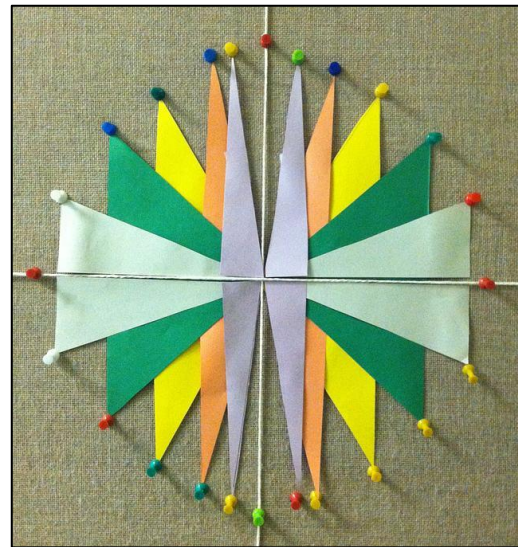
- Sets the stage with low floor, high ceiling task*
- Anticipate student needs

Explore

- Students engage in small, collaborative groups*
- Monitor, clarify, and promote thinking

Discuss

- Student solidify understanding through facilitated discussion*



Int. Math 2, Unit 9, Lesson 1
[Circling Triangles](#)

Principles of OUR Lesson Design

From OUR:

“The philosophical stance that guided the creation of these materials is the belief that with proper structures, accommodations, and supports, all students can learn mathematics.”

- 5 Practices for Orchestrating Productive Mathematics Discussion
 - Anticipating, Monitoring, Selecting, Sequencing, Connecting support in each lesson
- Access for all through clearly define goals, practices, lessons, and assessments through a Universal Design for Learning (UDL) framework*
- All students can learn, apply, and enjoy mathematics
 - Lessons designed for a wide range of abilities, additional supports when needed
- All students have strengths that enhance the overall learning within the classroom

Additional Resources

Practice:

Ready, Set, Go includes current content and intentional spiraled practice*

- **Ready:** spiral to recall prior knowledge for future content
- **Set:** allow students to practice current content from today's lesson
- **Go:** spiraled practice of widely applicable prerequisites from unit, course, or earlier

Assessment:

- Exit Tickets, Quick Quizzes, Self-Assessments, Unit Assessments, Performance Assessments

Support for OUR

Brigham Young University. "[CMI: It Works](#)". *McKay Today Magazine*, Spring 2013, pp.10-15.

Smith M., & Stein M.K. (2018). *5 Practices for Orchestrating Productive Mathematics Discussion*. NCTM.

Liljedahl, P., Zager, T. J., & Wheeler, L. (2021). *Building Thinking Classrooms in mathematics 14 teaching practices for enhancing learning: Grades K-12*. Corwin.

Measuring Success of Implementation

Teams teaching Integrated Math 1 and Integrated Math 2 will develop and use local assessment data over next four to six years in Integrated Math 1 and 2 to measure success of implementation.

Local assessment will include course specific content for Integrated Math 1 and Integrated Math 2.

Goal is to have measurable growth and success for end of year proficiency in course content aligned to WI Math Standards.

Recommend Action for the Board:

Approve the purchase of a core resource from Open Up Resources to support the implementation of Integrated Math 1 and Integrated Math 2.