Improving Student Academic Outcomes: Aligning Standards, Instruction, & Assessment

Education Interim Committee - January 2026
Montana Office of Public Instruction

Executive Summary:

- **Improving math outcomes requires system-wide coherence**. Montana is aligning updated math standards, a statewide math skills map, high-quality instructional materials (HQIM), professional learning, and through-year assessment to support how students develop math skills over time.
- **Early numeracy is the foundation for long-term success.** Strong early math instruction prevents learning gaps, supports algebra readiness, and reduces the need for later remediation. Early numeracy was intentionally embedded in the revised math standards to ensure students develop number sense, counting strategies, and foundational operations early.
- **A Montana Math Skills Map** will make learning progressions visible. By organizing standards into sequenced Major Concepts across grades, the skills map helps educators prioritize essential skills, deliver consistent instruction statewide, and identify gaps early.
- **High-Quality Instructional Materials**(HQIM) provide the bridge between standards, skills development, and classroom instruction. Montana defines HQIM as materials that are rigorous, culturally and contextually relevant, adaptable to student needs, and supported by professional learning.
- **The MHIT/EIR grant accelerates and evaluates work being done in Early Literacy Targeted Interventions.** MHIT builds on proven models to strengthen Tier 1 and Tier 2 instruction, serve approximately 1,800 high-need students in grades 1–3, and generate evidence about what improves literacy outcomes for Montana students.

Legislative support will be essential to sustain alignment, coherence, and impact across both math and literacy. This report aims to answer and pose key questions:

- *How can Montana continue to support early numeracy and foundational literacy as prevention strategies to reduce remediation and improve long-term outcomes?*
- *What role should the state play in helping districts access high-quality instructional materials and professional learning while preserving local control?*
- *How can investment in through-year assessment be leveraged to guide policy, target resources, and improve student outcomes across Montana?*
- *How can findings from MHIT/EIR Grant inform future policy and funding decisions?*
- *How can Montana ensure that improvements in student outcomes are sustained and scaled, particularly in rural and high-need communities?*

Section 1: Strong Foundations: Math Standards and Early Numeracy

Updated Mathematics Standards

Montana's mathematics standards provide a strong foundation for student learning. Recently adopted updates align with developmentally appropriate learning progressions designed to prevent gaps as students build toward college- and career-ready expectations and emphasize:

- Conceptual understanding
- Procedural fluency
- Application and reasoning

Early Numeracy as a Prevention Strategy

Early numeracy is foundational to all later mathematics learning, including algebra. Research consistently shows that gaps in early math skills compound over time, making later intervention more difficult and less effective. Montana has prioritized early numeracy through:

- Recently revised early-grade math standards focus on developing early numeracy
- Developmentally appropriate sequencing of skills to support mastery and algebra readiness
- ETI-supported initiatives that emphasize intentional skill development

Early numeracy is not separate from algebra readiness. It is the pathway to it. Ensuring students develop number sense, counting, and foundational operations early reduces the likelihood of later remediation and improves long-term outcomes.

Section 2: The Montana Math Skills Map: Making Learning Progressions Visible

Montana has begun work to develop a custom Math Skills Map to improve student outcomes in mathematics by making learning progressions more explicit. While still in development, this map is intended to provide a clear framework for educators, districts, and policymakers, showing how skills build over time and connecting standards, instruction, and assessment. By highlighting essential skills, prerequisite knowledge, and the progression toward algebra readiness, the map will support coherent instruction, early identification of learning gaps, and long-term student success.

What Is a Math Skills Map and Why Does It Matter?

A math skills map clearly shows:

- The progression of math skills students are expected to learn
- The essential concepts and prerequisite skills needed to build mastery
- How skills build across grade levels toward long-term proficiency

Unlike math standards, which describe what students should know at each grade level, a skills map organizes those standards into a **coherent sequence of skills.** It highlights prerequisite knowledge and makes learning progressions explicit.helping educators:

- Focus on the essential skills that build toward algebra readiness
- Track skill development over time to guide instructional decisions

Major Concepts: The Structure of the Map

At the center of a Math Skills Map are **Major Concepts**:

- Sets of related, mathematical skills
- Designed to support deep thinking about core content
- Organized across grades rather than confined to a single year
    - 64 Major Concepts span 10 grades
    - 20 Major Concepts support skills required for high school algebra and geometry
    - 11 Major Concepts reach back into elementary grades 2–4

Figure 1: Overview of Math Skills Map Structure

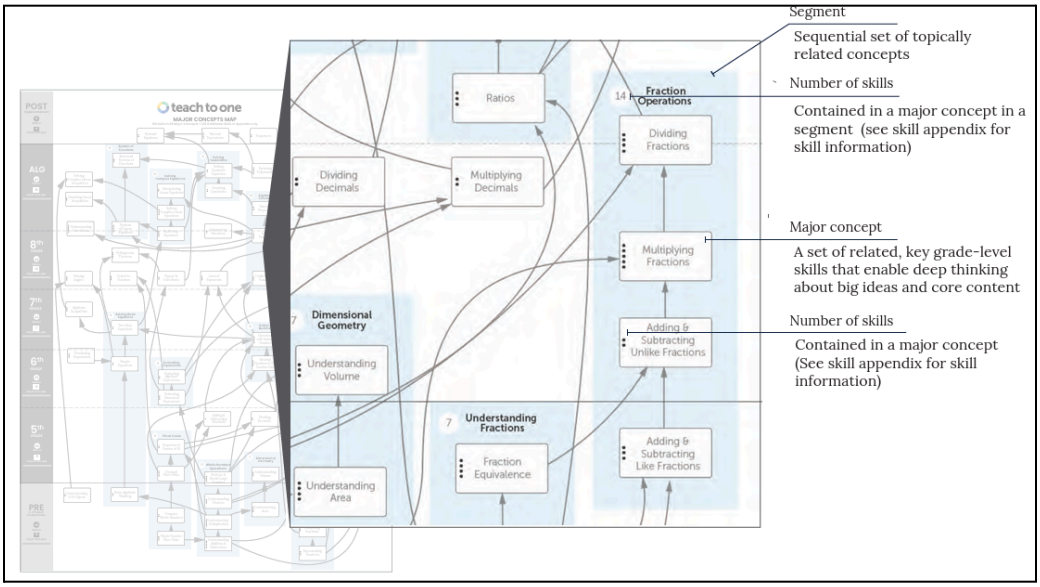
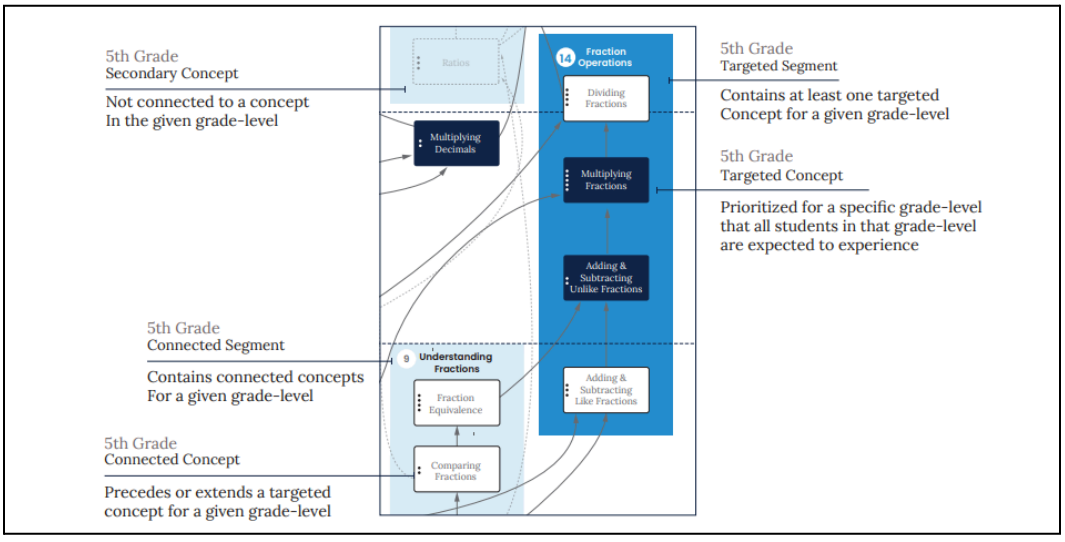


Figure 2: Example of Math Skills Map Structure



Together, the Major Concepts provide an expansive, nonlinear view of how skills build over time, reinforcing coherence across the system.

Purpose and Use of the Math Skills Map

The Montana Math Skills Map is designed to:

- **Identify essential skills** students must master to build a strong foundation for algebra and long-term math success
- **Focus on prevention rather than remediation**, addressing gaps before they compound
- **Support instructional planning and sequencing**, helping teachers prioritize and pace lessons effectively
- **Align instruction and assessment**, ensuring educators can monitor progress and adjust teaching in real time

---

Section 3: High-Quality Instructional Materials: Supporting Instructional Alignment

High-Quality Instructional Materials (HQIM) are essential tools for translating Montana's standards and Math Skills Map into effective classroom instruction. By providing clear, coherent, and research-based resources, HQIM help teachers deliver rigorous, developmentally appropriate lessons while maintaining consistency across classrooms and grade levels. In combination with professional learning and through-year assessment data, HQIM support educators in targeting instruction to student needs, identifying learning gaps early, and ensuring all students have access to grade-level content.

What Are High-Quality Instructional Materials (HQIM)?

The Montana Office of Public Instruction (OPI) has defined HQIM to guide schools in selecting curriculum that improves student outcomes and supports educators.
HQIM are evaluated through four essential lenses:

- **Student-centered and rigorous**, supporting grade-level expectations
- **Culturally and contextually relevant**, reflecting Montana students and communities
- **Flexible and adaptable**, allowing educators to respond to student needs
- **Supported by professional learning**, enabling effective classroom implementation

HQIM are not one-size-fits-all. Rather, they provide a common definition of quality while respecting local decision-making.

Why HQIM Matter

High-quality instructional materials are a key lever for improving mathematics outcomes. The quality of materials directly affects:

- Instructional coherence and consistency across grade levels
- Student access to grade-level content
- Alignment to Montana's math standards and skills map

When materials are misaligned or inconsistently implemented, learning gaps grow over time.

State and District Roles

While curriculum selection remains a local decision in Montana, districts increasingly seek state guidance. OPI supports districts by:

- Clearly defining quality
- Increasing transparency around materials
- Providing targeted guidance and professional learning

HQIM as the Bridge

HQIM act as the practical bridge between:

- What students are expected to learn (standards)
- How skills develop over time (skills map)
- How instruction happens daily (classrooms)

Section 4: Using Through-Year Assessment to Align Instruction, Skills, and Standard

While traditional summative assessments provide important accountability information, they occur after instruction has ended and often leave teachers without the timely data needed to address learning gaps. Montana's **through-year assessment (TYA) approach**, **MAST**, addresses this challenge by providing frequent, standards-aligned feedback that reflects students' skill development in real time. By linking assessment to the Math Skills Map and classroom instruction, TYA allows educators to identify misconceptions, adjust teaching throughout the year, and ensure students build the foundational skills they need for algebra readiness and long-term success.

Limits of Traditional Summative Assessment

Traditional summative assessments provide important accountability information but occur after instruction has ended. As a result:

- Teachers receive results too late to adjust instruction
- Misconceptions persist during the school year
- Assessment timing is often misaligned with instruction

Through-Year Assessment and MAST

Montana's through-year assessment approach, implemented through MAST, aligns assessment to instruction and the skills map.

Through-year assessment:

- Provides timely feedback on student learning - standards-based student performance within a week of test administration
- Reveals misconceptions while learning is still occurring
- Supports instructional adjustments throughout the year

Reporting Improvements

MAST provides multiple layers of reporting:

- Weekly testlet reports for students, classrooms, and schools
- Progress reports after each in-year assessment window
- Annual through-year and summative reports with testlet-level detail

Why This Matters for Student Outcomes

Through-year assessment allows educators to:

- Focus on specific skills and concepts
- Adjust instruction in real time
- Support students before gaps widen

This shift moves assessment from a tool for reporting to a tool for instructional support and decision making.

Section 5: MHIT / EIR Grant: Scaling What Works for Montana Students in Early Literacy Instruction

In December 2025, Montana was one of only 10 states awarded the **Education Innovation and Research (EIR) grant** to expand the **Montana High-Impact Tutoring (MHIT) project**, building on the proven success of the Early Targeted Interventions (ETI) program. MHIT is an **innovative, evidence-based initiative** designed to improve literacy outcomes for high-need students in grades 1–3, particularly in rural, tribal, and underserved communities. By integrating virtual, live, 1:1 tutoring, professional development, assessment, and family engagement, MHIT strengthens system coherence, aligns Tier 1 instruction with Tier 2 supports, and provides educators with actionable tools to address learning gaps in real time. This project represents a **strategic, scalable investment** in student outcomes from a State Education Agency level.

Purpose and Rationale

The Montana High-Impact Tutoring (MHIT) project, funded through the Education Innovation and Research (EIR) grant, builds on the success of the Early Literacy Targeted Intervention (ELTI) program, now Early Targeted Interventions, § 20-7-1801, MCA, with the addition of Early Numeracy in the 2023 legislative session. The project is designed to:

- **Provide live virtual, high-impact tutoring** delivered by certified educators, tailored to individual student literacy needs
- **Implement evidence-based intensive literacy interventions** aligned to the Science of Reading
- **Build educator capacity** to deliver strong, explicit literacy instruction
- **Provide schools with a family engagement toolkit** to support students' literacy development at home
- **Generate evidence** about effective interventions in Montana contexts

Who the Grant Serves

MHIT will serve approximately 1,800 students in grades 1–3, focusing on:

- Rural and tribal communities
- Schools identified by locale codes
- Schools serving high percentages of economically disadvantaged students

How M-HIT Fits the System

MHIT is not a stand-alone program. It is an investment in system coherence by:

- Supporting educators with aligned professional learning in the Science of Reading
- Strengthening connections between Tier 1 and Tier 2 instruction
- Expanding Early Targeted Interventions implemented by Montana Legislature to include an intentional focus on first through third grade school-based literacy intervention connected to classroom learning.
- Setting up the opportunity to apply for an Expansion EIR grant through documented strong evidence of effectiveness of the program.

Implementation and Contracting

Implementation includes:

- Open Literacy will provide the high-impact tutoring services.
- Evaluation will be provided by Education Northwest.
- An RFP will be posted for professional development in the Science of Reading, focused on connecting tier 2 interventions to tier 1 - best first instruction in the classroom.
- A new, full-time Grant Director will manage and implement grant activities.
- General funds to support the time and effort of OPI staff is an in-kind match to the grant.
- Emphasis on fidelity, data use, and sustainability
    - DIBELS will be the required literacy assessment to provide consistency and as the single screening measure for grant activities.

Section 6: Closing: Sustaining Student Learning Gains in Montana

Montana is advancing a coherent, prevention-focused approach to student learning. In mathematics, updated standards, a statewide math skills map, high-quality instructional materials, professional learning, and through-year assessment work together to strengthen skill development over time. This system prioritizes early numeracy, supports algebra readiness, and gives educators timely information to address gaps before they widen.

Early literacy gains are supported through the Montana High-Impact Tutoring (MHIT) project, funded by the federal EIR grant. MHIT connects Tier 1 instruction, Tier 2 interventions, and ongoing assessment to build teacher capacity and support high-need students in rural and tribal communities. This initiative builds on existing standards, assessments, and instructional frameworks, ensuring instruction is coherent and aligned.

Section 7: Related Resources

Revised Math Standards Resources for Educators

- P-12 Mathematics Content Standards Guidance Document
- Kindergarten Expanded Guidance Document
- First Grade Expanded Guidance Document
- Satchel - Standards Housing Platform
- Recommended High School Math Pathways
- High School Math Course Recommendations

Math Standards Implementation Professional Learning Series

- **August**: *Why the Change? Understanding the New Math Standards*
- **September**: *Exploring the Changes and Structure: Navigating the Standards Document*
- **October**: *Mathematical Practices: What They Are & Why They Matter*
- **November**: *From Fluency to Flexibility: Understanding Mathematical Proficiency*
- **December**: Aligning Your Curriculum: Where Do We Stand?
- **January**: Assessment & Standards: What Needs to Change?
- **February**: Differentiation & Access: Supporting All Learners
- **March**: IEFA & Cultural Relevance: Making Math Meaningful for Montana Students
- **April**: Next Steps: Identifying District/School Needs for Implementation

MAST Resources

- MAST Portal: Main webpage that houses all resources for families, educators, leaders, etc.
- MAST Overview: Slides that share the general overview as well as details about MAST.

Revised English Language Arts Content Standards Resources for Educators

- Economic Impact Statement, Administrative Rules of Montana, Chapter 53, Subsection 4: English Language Arts and Literacy Content Standards
- Summary of English Language Arts & Literacy Content Standards Revisions
- Montana Standards Revision Alignment with Science of Reading

Montana Math Skills Map Related Resources

- Unlocking Algebra: What the Data Tells Us About Helping Students Catch Up

Montana High-Impact Tutoring Grant Resources

- Montana High-Impact Tutoring Grant Narrative