MONTANA OFFICE OF PUBLIC INSTRUCTION

Mathematics & English Language Arts and Literacy Content Standards

Revision Implementation Update

September 2025 - Board of Public Education

CONTENT STANDARDS IMPLEMENTATION TEAM

- KATRINA ENGELDRUM: *Math Instructional Coordinator*
- CLAIRE MIKESON: ELA & Literacy Instructional Coordinator
- MICHELLE MCCARTHY: Science Instructional Coordinator
- AIMEE KONZEN: Professional Learning Manager
- MARIE JUDISCH: Senior Manager of Academic Outcomes & Instruction

Math Content Standards Revisions Timeline

REVISION
2021 - 2023

NRC
2023 - 2024

BPE
2024

GUIDANCE DEVELOPMENT
2024-2026

IMPLEMENTATION
JULY 2026

NEEDS ASSESSMENT AND IMPLEMENTATION PLANNING
2023 - 2024

POST ROLLOUT REVIEW AND REVISION
ONGOING

Montana Office of Public Instruction
Mathematics Standards Guidance & Implementation

Math Guidance Vision

"To provide clear, culturally relevant mathematics guidance that **empowers all students, educators, and families in Montana**. This guidance will integrate **Indian Education for All (IEFA) and local cultural perspectives** to ensure mathematics is meaningful and connected to students' lives. By emphasizing **diverse pathways**, this guidance equips students with the skills to navigate their futures—whether in the **workforce, higher education, trades, or military service**. Through accessible and precise guidance, we remove ambiguity in interpreting the standards, equipping all adults who support student learning with the tools they need to **foster mathematical understanding and success.** This guidance is designed to support both **effective instruction and meaningful evaluation**, providing clarity not only in what to teach, but also in how to assess student learning in a way that drives **progress and mastery**"

Educator Priorities

GUIDANCE DOCUMENTS

PROFESSIONAL LEARNING

GUIDANCE ON IEFA INTEGRATION

Need for clearer strategies to integrate IEFA into math instruction.

VERTICAL ALIGNMENT & SCOPE-AND-SEQUENCING

Support for instructional continuity across grades.

EXAMPLES AND ELABORATIONS

Desire for additional guidance without limiting teacher autonomy.

HIGH SCHOOL PATHWAYS

Clarification on course sequencing and career-aligned math progressions.

CURRICULUM ALIGNMENT SUPPORT

Assistance in aligning instructional materials to new standards.

In-Person
- District Support
- Conferences

VIRTUAL
- Interactive Webinar Series
- Focused Support Videos

Teacher Learning Hub Course

Facilitator Guides for those unable to attend live webinars or use focused support videos

In-Person Professional Learning

IN-PERSON PROFESSIONAL LEARNING

- June 2024 - OPI Summer Institute
- Sept 6, 2024 - Missoula County Public Schools
- Sept 10, 2024 - Polson School District
- Feb 10, 2025 - Missoula County Public Schools
- Apr 29, 2025 - Salish Kootenai College
- June 5, 2025 - Polson School District
- June 2025 - OPI Summer Institute
- June 12, 2025 - Helena School District
- July 27, 2025 - STEM Summer Institute
- Aug 8, 2025 - MCubed
- Aug 28, 2025 - Bigfork School District

Educators across Montana participated in a variety of professional learning to support the new math standards. Sessions focused on curriculum alignment, instructional strategies, digital tools, and culturally relevant pedagogy, while fostering teacher leadership and collaboration. Large-scale and targeted trainings ensured broad support for standards implementation across K-16 settings.

PL REQUEST FORM

Districts can request Professional Learning by completing the PL Opportunity Request Form found on the OPI Website. Each request is reviewed thoughtfully on a case-by-case basis, aligned with ISAP priorities and district goals, and considers budgetary factors to determine whether virtual or in-person delivery will be most effective.

IMPLEMENTATION WEBINAR SERIES

IMPLEMENTATION WEBINAR SERIES

Practical Guidance
Job-Embedded Strategies
Aligned to Curriculum Work
Community of Professionals

37 Live Attendees

✓ August 21, 2025	• **Why the Change? Understanding the New Math Standards**
September 18, 2025	• Exploring the Changes and Structure: Navigating the Standards Document
October 16, 2025	• Mathematical Practices: What They Are & Why They Matter
November 20, 2025	• From Fluency to Flexibility: Understanding Mathematical Proficiency
December 18, 2025	• Aligning Your Curriculum: Where Do We Stand?
January 15, 2026	• Assessment & Standards: What Needs to Change?
February 19, 2026	• Differentiation & Access: Supporting All Learners
March 19, 2026	• IEFA & Cultural Relevance: Making Math Meaningful for Montana Students
April 16, 2026	• Next Steps: Identifying District/School Needs for Implementation

Data Science for Everyone is a coalition advancing data science education so that every K-12 student is equipped with the data literacy skills needed to succeed in our modern world. Equitable access to data science education is an opportunity to open doors to higher education, high-paying careers, and an engaged community.

Created by the University of Chicago Center for RISC and organized in partnership with The Learning Agency and the Concord Consortium, we support a growing community that knows that the data revolution has transformed modern life and we need to prepare our students.

AUGUST 19, 2025

- **WHY DATA SCIENCE?**
  - Why are data skills incorporated into the new Montana mathematics standards? Why are they important for students in today's world and how do we use them for student engagement?

SEPTEMBER 9, 2025

- **TAKE THE INTIMIDATION OUT OF DATA THROUGH MATHEMATICS**
  - Discovering new resources you can integrate into your existing curriculum to address the new data science mathematics standards

OCTOBER 14, 2025

- **ASSESSING DATA SKILLS + ANALYZING ASSESSMENT RESULTS**
  - Strategies to assess students' data skills in the classroom and we'll also address teachers' data analytics skills for instructional improvement

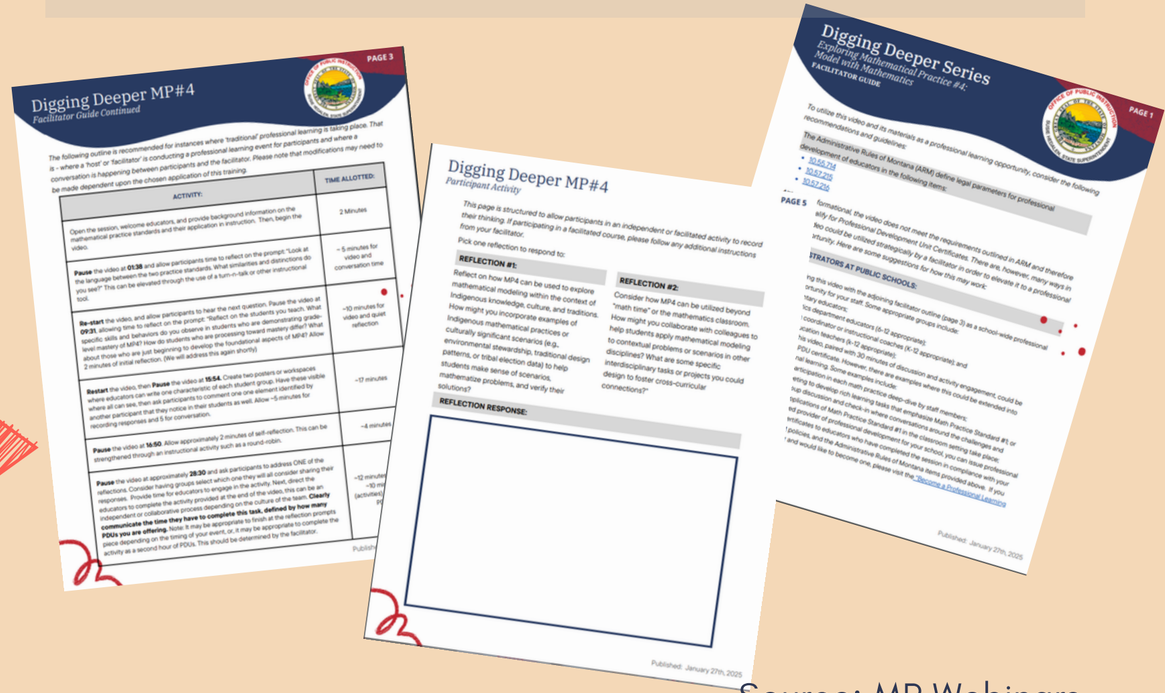
NOVEMBER 11, 2025

- **THE ART OF DATA VISUALIZATIONS**
  - Teaching students how to generate data visualizations, across grade levels, and the tools you can use to create them.

MATHEMATICAL PRACTICE WEBINARS:

Each Pre-recorded webinar is approximately 30 minutes and covers:

- The key differences between the old and new MPs
- What it means to be proficient in an MP
- Characteristics of a rich MP task
- Strategies educators use that support the development of these skills
- Interactive and reflective activities to solidify learning
- **A facilitator guide** that could be used by any educator and includes timing and activity suggestions, participant materials, and guidance on issuing/receiving PDUs for administrators and teacher leaders.

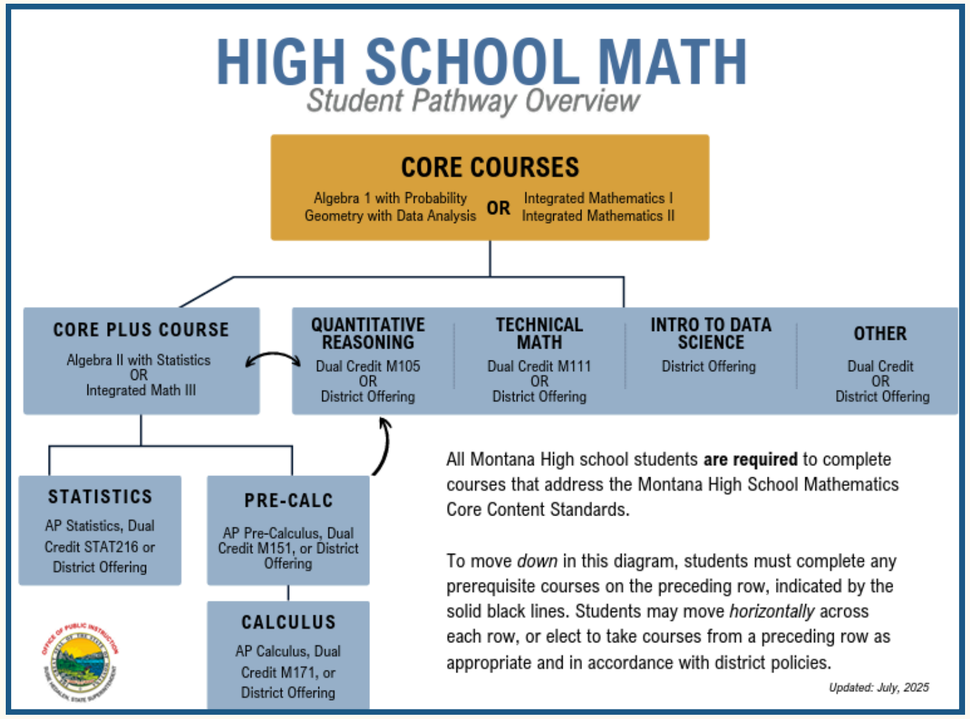


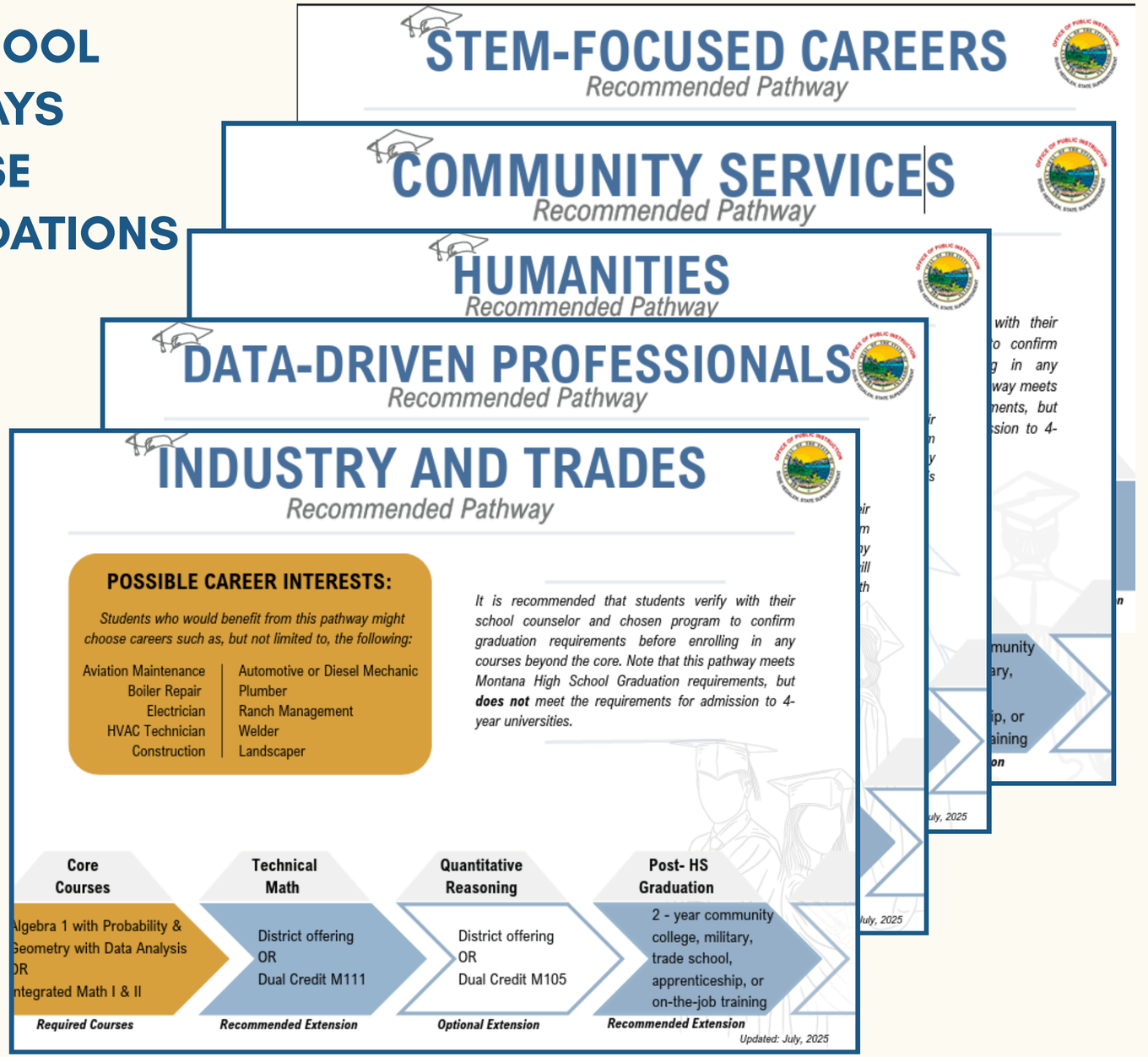
Source: MP Webinars

PK–12 MATH GUIDANCE DOCUMENT - KEY COMPONENTS

- **Mathematical Practices:** application across grade bands
- **Performance Indicators & Proficiency Rubrics:** K–12 overview
- **Course Recommendations & Pathways**: including HS focus and course codes
- **Financial Literacy:** integration across K–12 standards
- **Assessment Strategies & Resources:** tools to support proficiency
- **IEFA Integration:** K–12 guidance for culturally relevant math
- **Career Pathways:** connections to math learning
- **K–12 Crosswalk:** alignment with prior content standards
- **Glossary & References:** shared language and supporting research

HIGH SCHOOL PATHWAYS COURSE RECOMMENDATIONS





MATHEMATICAL PRACTICES

Mathematical Practice Standard 3 – Justify and Prove:

Mathematically proficient students create, evaluate, justify, and refute mathematical claims in developmentally and mathematically appropriate ways.

Embedded Skills:

To be considered proficient in this mathematical practice standard, students should be able to demonstrate each of the following skills in developmentally appropriate ways:

- ✓ Create mathematical claims in developmentally and mathematically appropriate ways
- ✓ Evaluate mathematical claims in developmentally and mathematically appropriate ways
- ✓ Justify mathematical claims in developmentally and mathematically appropriate ways
- ✓ Refute mathematical claims in developmentally and mathematically appropriate ways

Skills Timeline:

Students may engage in these skills at the following intervals of the solving process:

Before solving, students will be able to:	During solving, students will be able to:	After solving, students will be able to:
✓ Create mathematical claims in developmentally and mathematically appropriate ways	✓ Create mathematical claims in developmentally and mathematically appropriate ways	✓ Create mathematical claims in developmentally and mathematically appropriate ways
✓ Evaluate mathematical claims in developmentally and mathematically appropriate ways	✓ Evaluate mathematical claims in developmentally and mathematically appropriate ways	✓ Evaluate mathematical claims in developmentally and mathematically appropriate ways
✓ Justify mathematical claims in developmentally and mathematically appropriate ways	✓ Justify mathematical claims in developmentally and mathematically appropriate ways	✓ Justify mathematical claims in developmentally and mathematically appropriate ways
✓ Refute mathematical claims in developmentally and mathematically appropriate ways	✓ Refute mathematical claims in developmentally and mathematically appropriate ways	✓ Refute mathematical claims in developmentally and mathematically appropriate ways

** **Special Note:** Students may engage in each of the four skills embedded within this standard at any stage of the solving continuum – depending on the task – but the purpose and depth evolve as students' progress through the process.

Key Elements of a Rich Justify and Prove Task:

Learning tasks that engage students in justifying and proving may have some or all the following characteristics:

- **Make and Test Claims:** Tasks prompt students to form statements they believe might be true based on their observations and then test these claims using mathematical methods. In **kindergarten**, students might describe mathematical observations and test these claims in developmentally appropriate ways. For instance, making statements such as "I think these two groups have the same number of blocks" or stating, "I think this ribbon is longer than this one", then testing their hypothesis.

- **Evaluation of Claims:** Learning activities encourage students to determine whether a claim is accurate by comparing or testing it in mathematically appropriate ways. **Kindergarten** students may use simple means to evaluate a claim, such as by counting objects or drawing pictures. These can also help develop justification skills. For instance, if a student is provided a statement such as "These two groups have the same number of blocks", they can then count the blocks to confirm or deny that the statement is true.

- **Evidence-Based Reasoning to Justify:** A learning task might require students to explain and provide evidence of their thinking using developmentally appropriate tools (e.g., technology, manipulatives, etc.), vocabulary, and methods (e.g., verbal statements, drawings, etc.). **Kindergarten** students will use simple language, gestures, or tools such as drawings or ten frames. For instance, they might say, "I counted five blocks here and five blocks here, so they are the same."

- **Opportunities for Refutation:** Tasks provide flawed examples or incorrect claims for students to analyze, correct, and justify with evidence, fostering critical thinking. Tasks may also encourage students to identify and revise their own misconceptions. For example, **kindergarten** students can recognize and explain mistakes, such as correcting a peer who claims four blocks are more than six by providing reasoning. They may also reflect on their own learning, saying, "I thought big coins were worth more, but then I saw the numbers. The dime is smaller, but it's worth more than the nickel!". At this age, students benefit from learning to disagree respectfully.

- **Concrete Examples:** Tasks involve using manipulatives, drawings, or real-world objects to support students in developing their reasoning. For instance, in **kindergarten**, students may be asked to decide which group of objects has more. In this scenario, they will pick a group, then likely count the number of objects in each group and evaluate their claim. The concrete example helps students draw these connections and provide reasoning at the early developmental stages.

Ways Adults Can Support Students in Learning to Justify and Prove:

Some ways adults can support students in developing their justifying and proving skills include:

- **Model Clear Explanations:** Demonstrate how to explain reasoning, such as saying, "I know these groups are equal because I counted five in both."
- **Ask Probing Questions:** Use prompts like, "How do you know that's true?" or "Can you show me why this works?"
- **Provide Opportunities for Practice:** Require students to explain their reasoning frequently, both individually and in groups.
- **Encourage Reflection:** After students provide explanations, ask follow-up questions like, "What made you think that?" or "Does this always work?"

Grade-Level Expanded Guidance

- **Mathematical Practices**
  - Grade-level applications, elements of rich tasks, and adult supports for student skill development.
- **Standards overview**
  - Complete listing of grade-level standards.
- **Standards elaborations:**
  - Notes
  - Instructional examples
  - Proficiency Rubrics
  - IEFA integration with resources.
- **Correspondence tables**
  - Crosswalk from 2026 standards to 2011 CCSS for curriculum alignment.
- **Financial Literacy**
  - Identified standards and contextual applications by grade level.
- **Vertical alignment:**
  - Connections to standards above and below, with explanations of progressions and related standards.
- **Glossary**:
  - Accessible definitions for educators, families, and non-specialists.
- **Assessment notes:** Classroom and state-level considerations.
- **REL research highlights**

STATUS

- Kindergarten
- First Grade
- Second Grade

KINDERGARTEN EXAMPLE

MT.K.NBT.1:

Compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways and record each composition or decomposition by a drawing or an equation.

General Notes:

This standard focuses on students understanding numbers 11-19 as being composed of ten ones and additional ones (e.g., 13 is 10 + 3). It introduces the concept of place value by emphasizing the role of "ten" as a unit. Students practice composing and decomposing these numbers in multiple ways, such as using drawings or objects to represent their understanding. This skill builds a bridge between early counting and more formal place value concepts in later grades.

Instructional Examples:

- The teacher provides students with base ten blocks and asks them to represent the number 14. The student takes one "ten" rod and four "one" cubes, saying, “14 is 10 and 4.” The teacher asks the student to write the equation: 14 = 10 + 4.
- The teacher provides students with two ten frames and asks them to represent the number 17. The student fills one ten frame completely and places 7 counters in the second ten frame. The teacher asks the student to explain their representation: “17 is 10 ones and 7 more.”
- The teacher writes the number 18 on the board and asks students to write an equation or picture that shows how 18 can be made with tens and ones. Students write 18 = 10 + 8, 10 + 8 = 18, or draws a picture of the situation showing one group of ten and one of eight.

KINDERGARTEN EXAMPLE: IEFA

IEFA Integration Example: Harvesting Camas

Context and Connection:

Montana Indigenous Peoples, such as the Kalispel, Salish, Nez Perce, and Blackfoot, traditionally and contemporarily gather and harvest plants like camas bulbs for food. Camas harvesting involves knowledge passed down across generations, including how to locate, gather, process, and cook the bulbs sustainably. The teacher might also explain how camas harvesting was historically done with great care to preserve opportunities for future growth and how modern farming, construction, and land use have reduced access to many of the traditional harvesting areas. Students can discuss how grouping (e.g., placing bulbs in pouches) reflects efficiency and planning in real-life harvesting in this activity.

Task:

You are helping your family collect camas bulbs for a family celebration. You collect 15 bulbs in total. You store the bulbs in small pouches, with each pouch holding 10 bulbs. If you fill the first pouch, how many would you place inside the second to carry them home?" Students may use manipulatives (e.g., counters or small items) to group 10 bulbs into one "pouch" and place the remaining 5 separately. Students may represent this visually by drawing one group of 10 and 5 individual bulbs. They may represent this by writing the equation: 15 = 10 + 5. This activity can be repeated with different numbers to further demonstrate how numbers can be decomposed.

To extend the cultural and personal relevance, the teacher may ask questions such as: “Have the adults in your life ever talked about how the land, plants, or town in our community have changed over time?”, “What special foods does your family prepare for celebrations?”, “When things in our community or experiences change—like the land or the way we do things—what are some good things that happen? What are some things we might miss or lose?”, or “A long time ago, people picked camas bulbs in big open fields. Today, some of those fields have roads or buildings. What might be good about that? What might be sad about that?”

Essential Understandings:

EU 1, EU 2, EU 3, EU 5 and EU 6

Relevant Resources:

- Camas: Sacred Food of the Nez Perce (Nimiipuu) – Lolo Pass Visitor Center
- Puyallup Tribe hosts c’abid (camas) harvest at PLU – YouTube
- Camas Cookbook – Murphy, M. (2016) Washington State Dept. of Agriculture.

Important note: There is a plant with a similar-looking bulb, called Death Camas. If you are showing the edible camas plant to students, be sure to remind students not to eat plants that are unfamiliar to them or without asking an adult.

KINDERGARTEN EXAMPLE: PROFICIENCY RUBRIC

MT.K.NBT.1:

Compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways and record each composition or decomposition by a drawing or an equation.

Proficiency Rubric Example:

1. **Beginning**: The student is **not yet able to** compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways or record each composition or decomposition by a drawing or an equation without **intensive support**.
2. **Developing**: The student **can** compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways **or** record each composition or decomposition by a drawing or an equation, **or** the student can engage both skills **with some support.**
3. **Proficient**: The student **can** compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways **and** record each composition or decomposition by a drawing or an equation **with independence and accuracy**.
4. **Mastery**: The student **can** compose and decompose numbers from 11-19 into ten ones and further ones in multiple ways **and** record each composition or decomposition by a drawing or an equation **with independence and accuracy**. The student demonstrates an **advanced** understanding by being able to employ this skill in combination with other standards or by exceeding the developmental expectations.

SOURCE: KINDERGARTEN EXPANDED GUIDANCE DOCUMENT DRAFT

KINDERGARTEN EXAMPLE: VERTICAL ALIGNMENT

Pre-Kindergarten – Kindergarten – Grade 1 Vertical Alignment Overview:

The following table provides an overview of an example of a pre-kindergarten to first grade vertical alignment. Elaborations on these progressions are available as this appendix proceeds. It is worth noting that most mathematical concepts connect to each other and build over time. Therefore, there are multiple ways in which a vertical alignment table like the one provided below, might vary. This document aims to provide some support and guidance to individuals who seek to understand more about how standards connect to others across the PK-1 continuum.

Pre-Kindergarten	Kindergarten	Grade 1
EL.4.10.NSO EL.4.13.AT	MT.K.CC.1, MT.K.CC.3	MT.1.NBT.1
	MT.K.CC.2	Foundational Skill
	MT.K.CC.4	MT.1.OA.5
	MT.K.CC.5	Foundational Skill
	MT.K.CC.6, MT.K.CC.7	MT.1.OA.8, MT.1.NBT.3
	MT.K.OA.1, MT.K.OA.6	Foundational Skill
	MT.K.OA.3, MT.K.NBT.1	MT.1.OA.3, MT.1.NBT.2
	MT.K.OA.4	MT.1.OA.4, MT.1.OA.9
	MT.K.OA.5	MT.1.OA.6, MT.1.OA.7
	MT.K.OA.2	MT.1.OA.1, MT.1.OA.2, MT.1.NBT.4, MT.1.NBT.5, MT.1.NBT.6
EL.4.11.M EL.4.12.DA	MT.K.MD.1, MT.K.MD.2	MT.1.MD.1, MT.1.MD.2
	MT.K.MD.3	MT.1.MD.5
	MT.K.MD.4	MT.1.MD.4
	MT.K.MD.5	MT.1.MD.3
EL.4.14.GSP	MT.K.G.1	Foundational Skill
	MT.K.G.2, MT.K.G.3, MT.K.G.4	MT.1.G.1, MT.1.G.2
	MT.K.G.5	Foundational Skill
	MT.K.G.6	MT.1.G.3

KINDERGARTEN EXAMPLE: VERTICAL ALIGNMENT

Pre-Kindergarten – Kindergarten – Grade 1 Vertical Alignment Elaborations:

Pre-Kindergarten	Kindergarten	Grade 1
EL.4.10.NSO - Children develop the ability to think and work with numbers to understand their uses, and describe numerical relationships through structured and everyday experiences. **EL.4.13.AT** - Children learn to identify, describe, produce, and create patterns using mathematical language and materials.	**MT.K.CC.1** - Flexibly count to 100 by ones and by tens. **MT.K.CC.2** - Count beginning from a given number within the known sequence. **MT.K.CC.3** - Write numbers from 0-20 and represent a number of objects with a written numeral 0-20.	**MT.1.NBT.1** - Flexibly count, read, write, and represent numbers to 120.

Elaboration:

- In Pre-Kindergarten, students' ability to identify patterns in numbers, think, work with, and describe numerical relationships sets the foundation for understanding counting conventions and learning that numbers correspond to several objects and that these can be represented by numerals.
- In Kindergarten, students learn to count to 100 by ones and tens (which establishes foundational counting fluency) and to write numbers from 0-20 using numerals.
- Grade 1 extends these skills by introducing counting, reading, and writing numbers up to 120. This supports fluency and prepares students for more complex number representation in advancing grades by introducing larger numbers incrementally to later develop an understanding of place value.

KINDERGARTEN EXAMPLE: CCSS CORRESPONDENCE

Correspondence of Kindergarten Content Standards with Common Core Standards

Montana Standard Code	Correlated Common Core Standard(s)
MT.K.CC.1	CCSS.K.CC.A.1
MT.K.CC.2	CCSS.K.CC.A.2
MT.K.CC.3	CCSS.K.CC.A.3
MT.K.CC.4	CCSS.K.CC.B.1 and CCSS.K.CC.B.1.c
MT.K.CC.5	CCSS.K.CC.B.5
MT.K.CC.6	CCSS.K.CC.C.6
MT.K.CC.7	CCSS.K.CC.C.7
MT.K.OA.1	CCSS.K.OA.A.1
MT.K.OA.2	CCSS.K.OA.A.2
MT.K.OA.3	CCSS.K.OA.A.3
MT.K.OA.4	CCSS.K.OA.A.4
MT.K.OA.5	CCSS.K.OA.A.5
MT.K.OA.6	**No Corresponding Standard**
MT.K.NBT.1	CCSS.K.NBT.A.1
MT.K.MD.1	CCSS.K.MD.A.1
MT.K.MD.2	CCSS.K.MD.A.2
MT.K.MD.3	CCSS.K.MD.B.3
MT.K.MD.4	**No Corresponding Standard**
MT.K.MD.5	**No Corresponding Standard**
MT.K.G.1	CCSS.K.G.A.1
MT.K.G.2	CCSS.K.G.A.2
MT.K.G.3	CCSS.K.G.A.3
MT.K.G.4	CCSS.K.G.B.4
MT.K.G.5	CCSS.K.G.B.5
MT.K.G.6	CCSS.K.G.B.6

KINDERGARTEN EXAMPLE: FINANCIAL LITERACY

Content Standards that Explicitly Address Financial Literacy:

The Kindergarten Mathematics Content Standards contain one standard that specifically addresses financial literacy themes:

MT.K.MD.4: Describe attributes and identify the names of coins.

- This standard explicitly addresses financial literacy foundational knowledge.
- There are developmentally appropriate contextual examples within the themes of (I) Earning Income, (II) Spending, and (III) Saving such as: *Provide students with real or pretend coins and have them identify the coins by name and value. Have proficient or highly proficient students use a sorting activity to group coins by type, and then, have students calculate the total value of each group. Discuss how coins can be earned, used to buy goods or saved for future purchases.*

Content Standards that Could Address Financial Literacy Through Problems in Context:

There are additional Kindergarten Mathematics Content Standards that may address financial literacy themes through specific instruction using problems in context.

These standards have the potential to address financial literacy themes when applied within problems in context. Incorporating context into the instructional delivery of a standard is an effective way to help students meaningfully connect to the content, drawing on their culture and lived experiences.

However, adding context to a standard in a way that exceeds its expectations in assessment can elevate an assessment question to Level 4: Highly Proficient on a proficiency rubric. Educators should be mindful of this distinction when designing assessments to ensure alignment with the intended standard.

The Montana Kindergarten Content Standards that may address financial literacy through problems in context are:

MT.K.CC.1	MT.K.CC.4	MT.K.NBT.1	MT.K.MD.4
MT.K.CC.2	MT.K.CC.5	MT.K.MD.2	
MT.K.CC.3	MT.K.CC.6	MT.K.MD.3	

HIGH SCHOOL MATH COURSE RECOMMENDATIONS

- Traditional Pathway
- Integrated Pathway
- Recommendations for Beyond Core Plus Standards

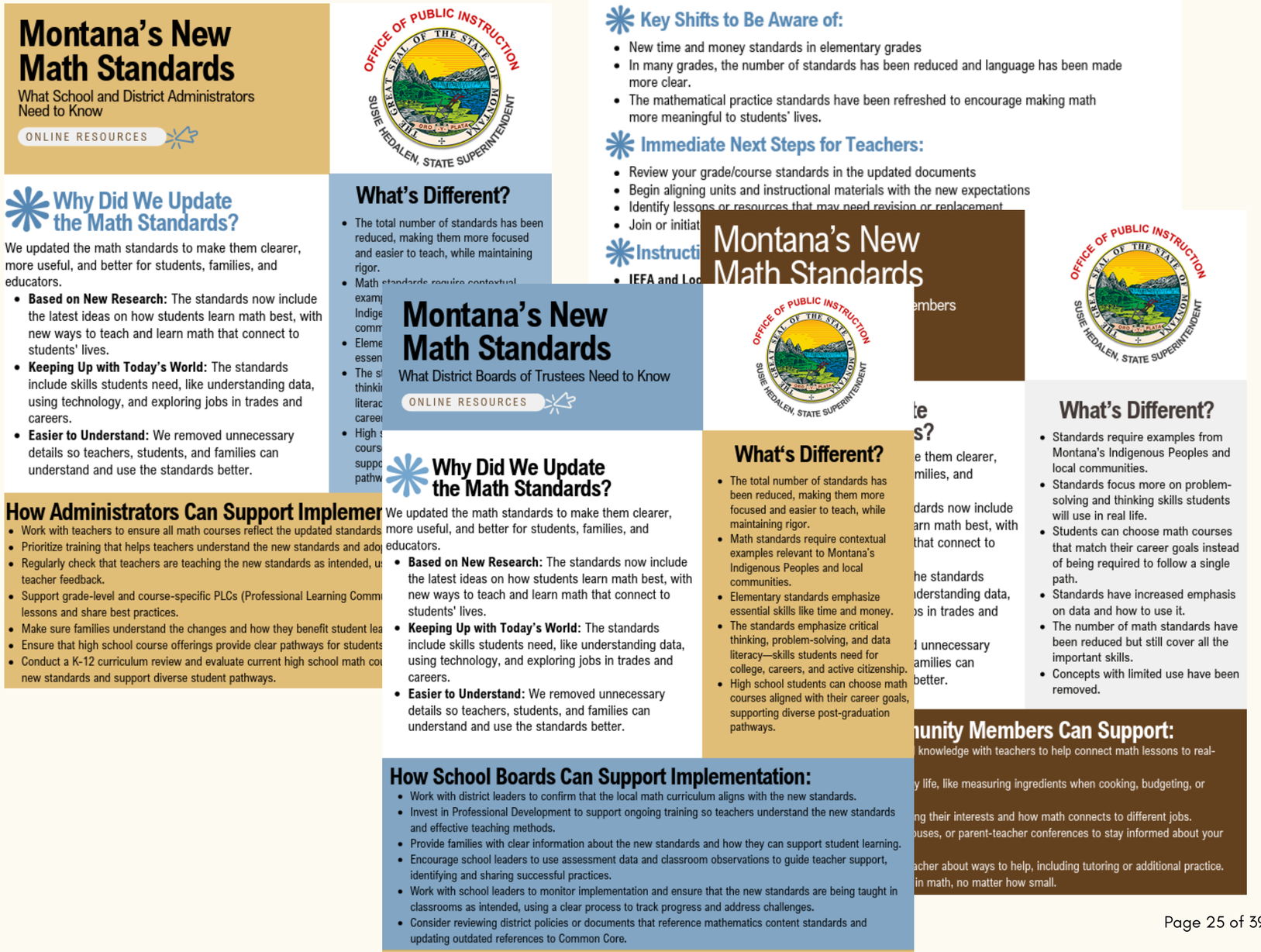
Integrated Math II		
Course Code: 02-063		
Montana Mathematics Content Standards Category	*Domains within the Mathematics Content Standards Category Recommended for Coursework*	*Specific Standards within the Domain Recommended for Coursework*
Core Numeric Reasoning Standards (NUM) *ARM 10.53.518*	The Real Number System (REAL)	Two standards: CORE.NUM.REAL.1 and CORE.NUM.REAL.2 (2 total)
Core Algebraic and Functional Reasoning Standards (ALG) *ARM 10.53.519*	Quadratic Functions and Expressions (QUAD)	All standards within this domain (4 total)
	Exponential Functions and Expressions (EXP)	All standards within this domain (5 total)
	Modeling with Functions (MOD)	All standards within this domain, as applied to quadratic and exponential functions (4 total)
Core Data Reasoning and Probability Standards (DATA) *ARM 10.54.520*	Quantitative Literacy (LIT)	All standards within this domain (3 total)
	Visualizing, Summarizing, & Interpreting Data (INT)	All standards within this domain except CORE.DATA.INT.6 (6 total)
Core Geometric Reasoning Standards (GEOM) *ARM 10.54.521*	Geometric Arguments, Reasoning, and Proof (ARG)	All standards within this domain (1 total)
Total Number of Standards: 25		

Algebra 1 with Probability		
Course Code: 02-052		
Montana Mathematics Content Standards Category	*Domains within the Mathematics Content Standards Category Recommended for Coursework*	*Specific Standards within the Domain Recommended for Coursework*
Core Numeric Reasoning Standards (NUM) *ARM 10.53.518*	The Real Number System (REAL)	All standards within this domain (3 total)
Core Algebraic and Functional Reasoning Standards (ALG) *ARM 10.53.519*	Understand Functions and Expressions (FUN)	All standards within these domains (27 total)
	Linear Functions (LIN)	
	Quadratic Functions and Expressions (QUAD)	
	Exponential Functions and Expressions (EXP)	
	Modeling with Functions (MOD)	
Core Data Reasoning and Probability Standards (DATA) *ARM 10.53.520*	Visualizing, Summarizing, & Interpreting Data (INT)	Only standard CORE.DATA.INT.6 (1 total)
	Probability (PROB)	All standards within the domain (2 total)
Total Number of Standards: 33		

Data Science	
Course Code: 30-7001	
Preamble (CIP 2020)	Data Science is an interdisciplinary course that prepares students to analyze and interpret large-scale data in real-world contexts. Drawing from statistics, computer science, and mathematics, students explore topics such as data collection, visualization, modeling, and analysis. This course emphasizes trend identification, algorithmic thinking, and ethical data use to inform decision-making and problem-solving.
Sample Learning Outcomes (IDS, 2022)	Students will: • Learn fundamental notions of data analysis—such as distribution and multivariate associations. • Create and interpret visualizations of real-world data. • Use numerical summaries to describe distributions. • Learn about the various ways of collecting data and the effect that data collection has on conclusions and interpretations. • Use computer simulations for informal inference. • Make and use mathematical and statistical models to predict future observations and learn how data scientists measure the success of these predictions. • Communicate methods and results to various audiences
Instructional Resources	Sample Courses: • Explorations in Data Science (YouCubed) • Introduction to Data Science (UCLA) • Additional Options for Sample Courses and Instructional Resources (Data Science 4 Everyone)

COMMUNICATION 'ONE-PAGERS'

- One Pager for Students
- One Pager for Administrators
- One Pager for School Counselors
- One Pager for Tribal Education Agencies
- One Pager for School Board Trustees
- One Pager for Families and Community Members
- One Pager for Secondary Educators
- One Pager for Elementary Educators
- One Pager for Pre-Service Teacher Educators (Higher Educators)



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NEW STANDARDS HOUSING PLATFORM

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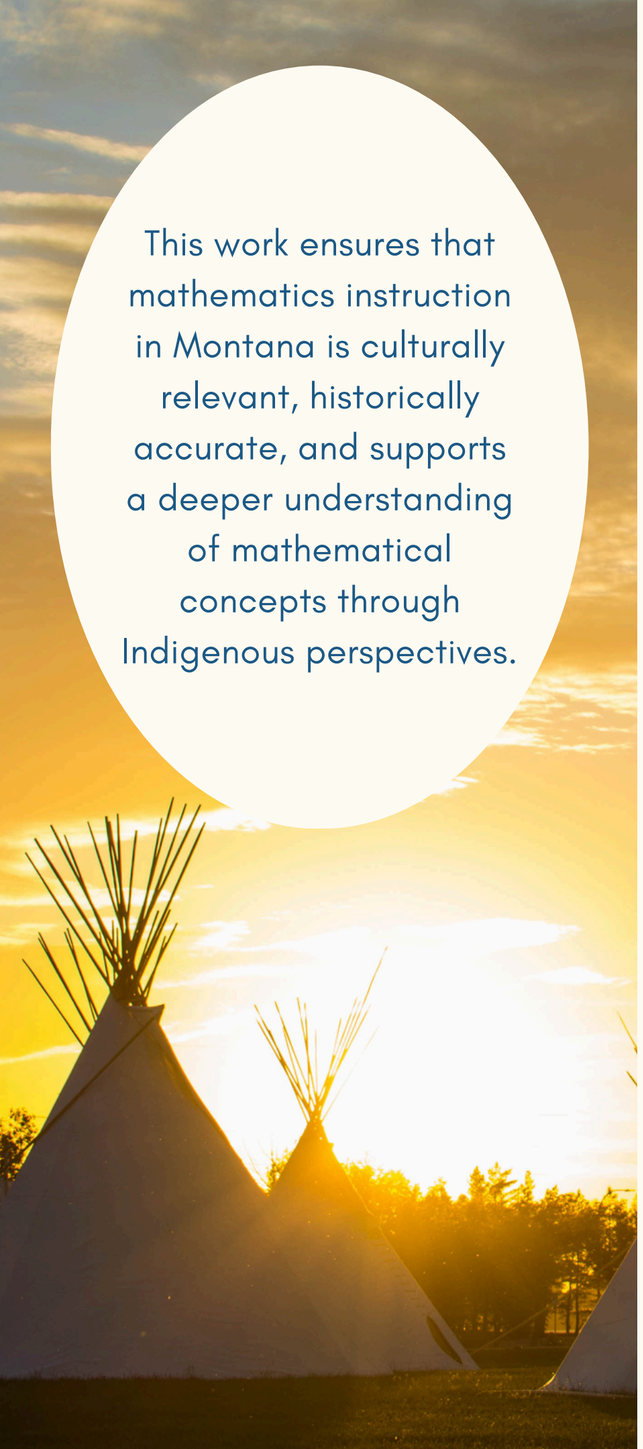


This work ensures that mathematics instruction in Montana is culturally relevant, historically accurate, and supports a deeper understanding of mathematical concepts through Indigenous perspectives.

IEFA Collaboration

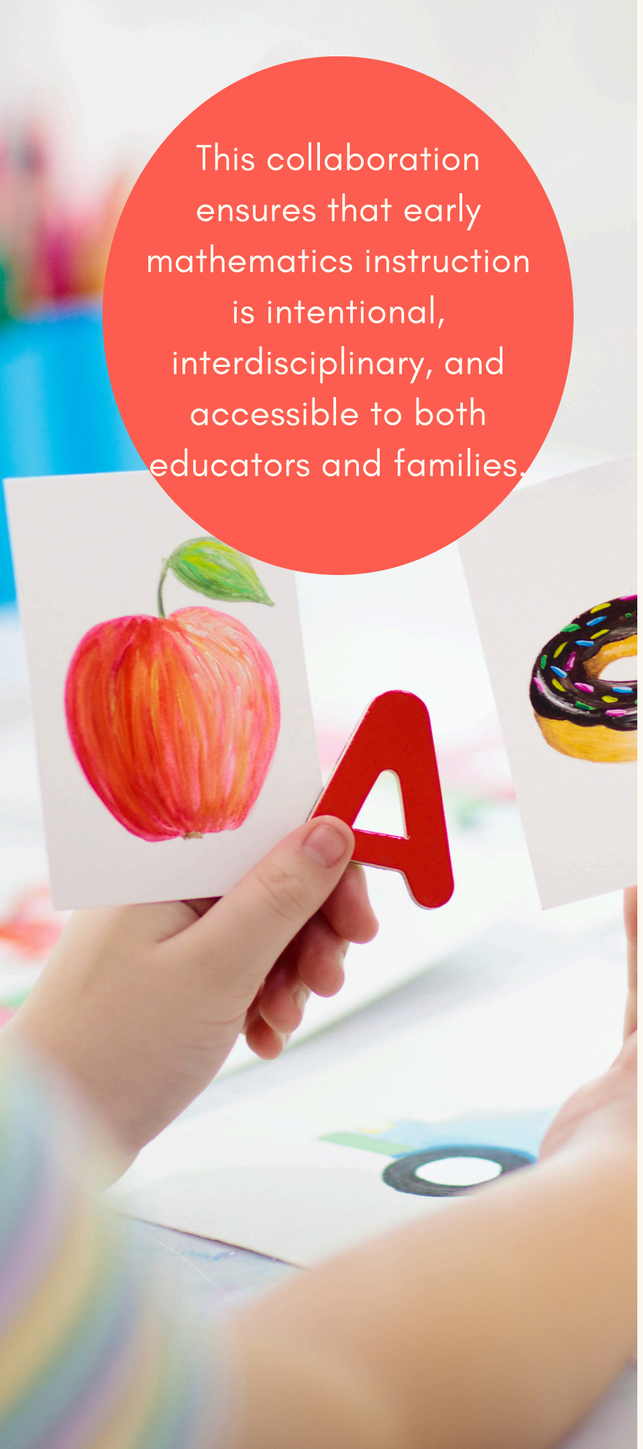
We are actively partnering with the Indian Education for All (IEFA) Team to strengthen the integration of Montana's Indigenous histories, cultural practices, and lived experiences within mathematics education. Our collaboration focuses on:

- Developing IEFA-Integrated Instructional Examples - Creating and refining standards examples embedded with cultural relevance, ensuring they authentically reflect Montana's Indigenous perspectives.
- Reviewing for Cultural Responsiveness & Relevancy - Conducting critical reviews of instructional materials to ensure accurate, respectful, and meaningful integration of Indigenous knowledge within mathematics instruction.
- Professional Learning & Educator Support - Designing coaching and training resources that equip educators with practical strategies for embedding mathematics within cultural contexts relevant to Montana's Indigenous Peoples.
- Statewide OPI-Reviewed Lesson Bank - Curating a Montana educator-created, OPI-reviewed collection of high-quality IEFA-integrated math lesson plans that highlight effective instructional strategies while elevating the expertise of our state's educators.
- External Collaboration Opportunities - Working to review IEFA examples with members of MACIE and have connected with CKST and Stone Child College to support reviewing documents as well.

SIPL Collaboration

We are actively collaborating within the Standards, Instruction, and Professional Learning (SIPL) Team to enhance instructional coherence, accessibility, and professional development for Montana educators. Our work includes:

- Ensuring Continuity Across Content Standards Guidance – Aligning mathematics guidance with other content areas to maintain consistency and clarity across disciplines.
- Optimizing Satchel for Educators – Formatting Satchel to support instructional needs by presenting standards, examples, and associations in a clear, user-friendly format that integrates with grading systems like Infinite Campus to enhance usability.
- Developing Professional Learning – Creating high-impact professional learning opportunities that help educators implement standards effectively in their classrooms.
- Evaluating & Providing Guidance on Instructional Materials – Evaluating and improving our resources for supporting districts and schools in selecting high-quality instructional resources that align with best practices and new standards and expectations.
- Expanding the Teacher Learning Hub – Generating and housing new online courses to provide on-demand, standards-aligned professional development for Montana educators.



This collaboration ensures that early mathematics instruction is intentional, interdisciplinary, and accessible to both educators and families.

Early Learning Collaboration

We are actively working with the Early Literacy Team to strengthen the connection between early literacy and mathematics through:

- Expanding the Early Literacy Series – Developing a session that demonstrates the interplay between early literacy and math, emphasizing how integrated instruction enhances student outcomes in both reading and mathematics.

- Professional Learning for PK-3 Educators – Creating targeted training that highlights strategies for integrating math and literacy in early childhood education. This session equips educators with practical tools to build instructional capacity and includes resources for addressing data science in third grade—a growing focus in both the standards and broader educational conversations.

- Future Educator-Family Guides – Drafting plans for companion educator-family resources that connect mathematics, science, and ELA standards with grade-appropriate texts. These guides will support educators with instructional strategies while providing families with interactive home activities that foster meaningful partnership in their child's learning.

This collaboration ensures that Montana educators are equipped to teach data science in a way that is accessible, relevant, and aligned with state standards, while also fostering a sustainable teacher-leader model for long-term impact.

Data Science for Everyone

We have partnered with Data Science for Everyone (DS4E) to equip Montana educators with the knowledge and resources needed to integrate data science and data fluency effectively across grade levels and content areas. Our partnership includes:

- Montana-Specific Webinars - Delivering standards-aligned professional learning focused on the data science and data fluency components within Montana's new mathematics standards, along with integration strategies across subjects and grade levels.
- In-Person Summer Institute or Roadshow - Hosting an immersive, hands-on professional learning experience for educators, with an optional scaffolding extension into a second year to deepen implementation.
- On-Demand Teacher Learning Hub Resources - Curating accessible, high-quality instructional materials on data science and fluency for Montana teachers to reference anytime.
- Cultivating Teacher-Leaders - Developing a network of educators who will receive specialized training to build capacity within their districts and provide ongoing peer-to-peer professional development.

Wait... there's more!

- MFPE Conference
- STEM Summer Institute
- Data Science for Everyone Summer Institute
- Montana OPI Summer Institute
- Self-Paced teacher Learning Hub on Mathematical Practices
- Self-Paced Teacher Learning Hub Modules on New Standards
- Ready-Made PLC Plans for Schools
- Support aligning Math Content Standards to MAST Schedules
- Understanding MAST Math Misconceptions Professional Learning

Whatever else comes our way!

English Language Arts and Literacy Content Standards Revisions Timeline

REVISION
2023-2024

NRC
2024-2025

BPE
2025

GUIDANCE DEVELOPMENT
2025-2027

IMPLEMENTATION
JULY 2027

NEEDS ASSESSMENT AND IMPLEMENTATION PLANNING
2024 - 2027

POST ROLLOUT REVIEW AND REVISION
ONGOING

ELA & Literacy Revisions Overview

Key Objectives of the Revision:

- **Enhancing Early Literacy:** The revised standards align with evidence-based practices to support students in reaching reading proficiency by 3rd grade. They emphasize the five essential components of reading development—phonemic awareness, phonics, fluency, vocabulary, and comprehension—to ensure a strong literacy foundation.
- **Simplification & Clarity:** The updated standards reduce redundancy, use clear and concise language, and are structured for ease of use by educators, families, and the community.
- **Integration of Research:** The updates incorporate the latest research in literacy instruction, including the Science of Reading, to support effective teaching at all grade levels.
- **Authentic Integration of Indian Education for All:** Adopted "Indigenous Peoples" terminology aligning to Mathematics standards, added consistent references to Montana Indigenous texts, and created a Research and Inquiry standard to strengthen related skills and knowledge.

ELA & Literacy Revisions Overview

Shifts in Standards:

- **Foundational Reading Standards**
  - Expanded in K-5, including a new strand focused on encoding and increased phonemic awareness. Introduced cursive writing in 2nd grade.
  - Extended into secondary grades with new standards for fluency, multisyllabic decoding and morphology.
- **Reading Standards Structure**
  - Removed the false distinction between Reading Literature and Reading Informational Texts. Combined into one set of reading standards that cover both fiction and nonfiction, with informational text as one genre.
- **Simplification and Redundancy Removal**
  - Repealed interdisciplinary ELA and Literacy Standards (ARM 10.53.411–10.53.413), shifting interdisciplinary approaches to guidance documents. Content is NOT removed, just no longer duplicated.
  - Repealed College and Career Readiness Anchor Standards, as they duplicated end goals already embedded in the standards. Content is *NOT* removed, just no longer duplicated.

ELA & Literacy Revisions Overview

Shifts in Standards:

- **Restructuring for Consistency:** Standards are now organized by grade level rather than domain, and adjustments including embedding language standards into relevant reading, writing, and speaking/listening sections and adding a new Research & Inquiry domain including standards from writing
- **Establish Literacy Practices:** Modeled after the Math Practices, new literacy practices emphasize transferable reading, writing, and communication skills essential for post-secondary success.
- **Guidance Documents**: Similar to the math revisions, examples and elaborations have been moved to guidance documents, giving educators flexibility while ensuring essential concepts remain in ARM.
- **Enhanced Accessibility:** The standards have been refined to remove unnecessary language, improve readability, and include a glossary for key terms.

ELA & Literacy Revisions Overview

Literacy Practices: Modeled after the Math Practices, new literacy practices emphasize transferable reading, writing, and communication skills essential for post-secondary success.

- **Broad Literacy Engagement:** Routinely read a wide range of literary and informational texts for varied purposes.
- **Collaboration:** Work with others using active and effective communication skills.
- **Creativity**: Express ideas, deepen understanding, and make connections through creative engagement.
- **Critical Thinking:** Analyze, reason, problem solve, and make informed decisions.
- **Cultural Considerations:** Acknowledge and respect diverse cultural perspectives, including Montana Indigenous Peoples.
- **Effective Communication**: Clearly express ideas through speaking and writing across multiple genres.
- **Strategic Technology Use:** Responsibly use technology to access, evaluate, and communicate information.
- **Student Agency:** Take an active role in learning, applying feedback to connect skills and knowledge to real-world use.

ELA & Literacy Guidance Vision

The guidance aims to provide Montana educators, students, and families with clear, culturally responsive direction for implementing the English Language Arts and literacy standards. It will be grounded in the **Science of Reading and evidence-based practices** to ensure literacy instruction is both rigorous and meaningful. **Indian Education for All (IEFA) and local cultural perspectives** will be woven throughout, affirming student identities and connecting learning to lived experiences. By highlighting multiple pathways, the guidance will prepare students to **read, speak, and think critically**, while also developing them as strong, **confident writers**—skills essential for success in higher education, the workforce, trades, and military service. **It will clarify expectations**, reduce uncertainty in interpreting the standards, and give educators **concrete tools for effective instruction and assessment** that reflect authentic literacy growth and achievement.

ELA & Literacy Guidance

The Task Force and Negotiated Rulemaking Committee agree that guidance is essential. Work has begun to develop documents and will continue to grow as needs arise. Resources will support all partner groups — families, support staff, educators, and administrators.

- **1. Instruction & Practice Elaborations**
  - Oral practice strategies and scaffolds for standards
  - Decoding/encoding and fluency strategies and grade-level accuracy
  - Vocabulary tiers, word-learning, and example lessons
  - Writing development and literacy practices
- **2. Standards & Alignment**
  - Grade-level expectations and defining features
  - Vertical alignment PK-12 and standard elaborations
  - Crosswalk from 2011 standards; attention to language changes
  - Integration of Science of Reading principles into standards implementation
- **3. Resources & Connections**
  - Multiple sources, diverse media, and Library Media Standards
  - Cultural connections
  - Connecting literacy to home and supporting families
  - Supporting students with disabilities, inclusive strategies, and differentiated instruction
- **4. Assessment, Technology & Implementation**
  - Formative/summative assessments and proficiency indicators
  - Tools for monitoring growth and guiding instruction
  - Digital literacy integration
  - Professional learning, mentorship, and community partnerships

Thank you!

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