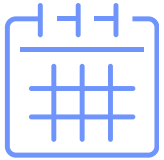# Montana Alternate Student Testing Pilot Math Assessment Training: MasteryGuide
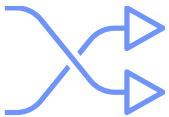
New Meridian

2023-2024

Summary of MasteryGuide for Montana

13 testlets throughout the year

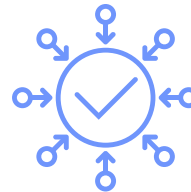Administered in a single class period

Flexibly aligns to local instruction

Machine scored for real-time classroom feedback

Measures fine-grained, instructionally relevant standards to inform instruction

Aggregates to a summative, year-end score

Math Test Design Overview

- The MasteryGuide Assessment includes 12 testlets per grade. Each testlet consists of 10 single- or multi-part items

- Some testlets for grades 6, 7, and 8 will have an approved, digital calculator available in the Kite Student Platform. Calculator availability depends on the state Math standards to which the testlet is aligned.

- Each testlet is expected to be completed in less than 30 minutes, and most students should be able to complete two testlets in a 45-minute class period.

- The number and order of testlets in each administration window is dependent on your local curriculum scope and sequence.

Content Coverage

Content Coverage

12 Content Strands in Each Grade

Grade 3

- Concepts of Multiplication and Division
- Multiplication and Division Equations
- Multiply and Divide Within 100
- Time, Liquid Volume, and Mass
- Real-World Problems and Patterns
- Place Value and Operations in Base Ten
- Understand Fractions as Numbers
- Compare and Find Equivalent Fractions
- Unit Squares and Square Units
- Solve Area Problems
- Data and Graphing
- Two-Dimensional Geometric Figures

Grade 4

- Place Value in the Base Ten System
- Addition and Subtraction Algorithms
- Extend Concepts of Multiplication
- Multi-Digit Multiplication
- Multi-Digit Division
- Real-World Problems and Patterns
- Compare and Find Equivalent Fractions
- Add and Subtract Fractions
- Multiply Fractions
- Decimal Fractions
- Solve Measurement Problems
- Angles and Geometry

Content Coverage

12 Content Strands in Each Grade

Grade 5

- Numerical Expressions
- Place Value and Powers of Ten
- Represent and Compare Decimals
- Multiply and Divide Whole Numbers
- Operations with Decimals
- Add and Subtract Fractions
- Multiply Fractions
- Division with Fractions
- Unit Cubes and Cubic Units
- Solve Volume Problems
- Understand the First Quadrant
- Attributes of Geometric Figures

Grade 6

- Concepts of Ratios and Unit Rates*
- Percents and Measurement Conversions*
- Divide Fractions
- Computational Fluency
- Rational Numbers and Absolute Value*
- Algebraic Expressions and Exponents*
- Equivalent Expressions*
- Variables in Expressions and Equations*
- Write and Interpret Inequalities*
- Solve Problems with Area and Volume*
- The Coordinate Plane*
- Concepts of Statistics*

*calculator available

Content Coverage

12 Content Strands in Each Grade

Grade 7

- Ratios and Proportional Relationships*
- Solve Problems with Ratio and Proportion*
- Add and Subtract Rational Numbers
- Multiply and Divide Rational Numbers
- Expressions with Rational Numbers*
- Solving Equations*
- Solving Inequalities*
- Solve Problems with Rational Numbers*
- Angle Relationships and Triangles*
- Solve Problems with Geometric Figures*
- Measures of Center and Variability*
- Probability*

Grade 8

- Understand and Use Irrational Numbers
- Exponent Rules and Scientific Notation
- Understand Functions*
- Compare and Interpret Functions*
- Construct Functions*
- Linear Equations in One Variable*
- Proportional Relationships and Lines*
- Systems of Equations*
- Pythagorean Theorem*
- Geometric Transformations*
- Similarity and Congruence*
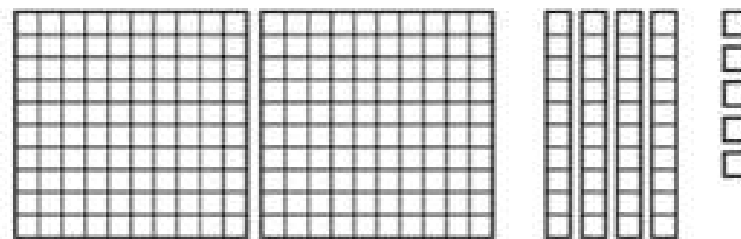- Bivariate Data*

*calculator available

Item Details

Item Types

- Multiple Choice – Single Select
- Multiple Choice – Multiple Select
- Fill-in-the-Blank
- Equation Editor
- Inline Choice
- Match Table Grid
- Gap Match
- Graphic Gap Match
- Hot Spot
- Sequencing

Sample Item

11. Max uses base-ten blocks to make this model of a number.

a. First, Max says the ☐ is 0.01. What number does the model show? _____

b. Then, Max changes the values of the blocks so the same model shows a new number. Now, the ☐ is 10 times the value it was before. What number does the model show now? _____

12. Which expression shows one way to represent the number 2,506 in expanded form?

A. $(2 \times 10^4) + (5 \times 10^3) + (6 \times 10^2)$

B. $(2 \times 10^4) + (5 \times 10^2) + (6 \times 10^1)$

C. $(2 \times 10^3) + (5 \times 10^2) + (6 \times 10^1)$

D. $(2 \times 10^3) + (5 \times 10^2) + (6 \times 10^0)$

Engagement Opportunities

Engagement and Feedback Opportunities

Scheduled throughout the year

- 1:1 interviews
  - Educators
  - Students
  - Parents
  - Administrators
- Monthly listening sessions/office hours
- Focus groups
  - Educators
  - Administrators
- Post-administration Surveys
  - Educators
  - Students
- Item Review Cadres
  - October
  - March
  - June

Contact Information

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Thank You!

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