

Learning progressions

This visual roadmap shows how foundational skills evolve into mathematical proficiency across K–5, ensuring instructional coherence from core instruction to intervention.

By mapping intervention topics directly to mCLASS Math Domains, educators are empowered to connect targeted support with their grade-level curriculum and facilitate seamless, data-driven tiered intervention. Topics across the grades are defined by major work of each grade. These are defined by research and the resources including:

- Achieve the Core: Focus by Grade Level
- Common Core State Standards for Mathematics (CCSS-M)
- National Council of Teachers of Mathematics (NCTM)

- National Assessment of Education Progress (NAEP)
- Trends in International Mathematics and Science Study (TIMSS)
- High-impact academic journals (e.g., Journal for Research in Mathematics Education, ZDM – Mathematics Education, Journal of Educational Psychology, Assessment for Effective Intervention), practitioner journals (e.g., Mathematics Teacher: Learning and Teaching PK–12), published books (e.g., Cognitively Guided Instruction [Carpenter et al., 2015] and Learning and Teaching Early Math: The Learning Trajectories Approach [Clements & Sarama, 2021]), and research from prolific researchers (e.g., Maria Blanton, Jo Boaler, Douglas Clements, Nancy C. Jordan, Bethany Rittle-Johnson, Robert S. Siegler, Margaret Smith, Mary Kay Stein).

Priority Math Domain	K	1	2	3	4	5
Counting and Cardinality (CC)	CC					
Algebraic Thinking (OA)	OA	OA	OA	OA	OA	
Number and Operations (NO)	NO	NO	NO	NO	NO	NO
Measurement and Data (MD)		MD	MD	MD	MD	MD
Fractions (F)				F	F	F

Intervention topics by grade

Grade K

- Counting and Cardinality Within 10
- Comparing Quantities Within 10
- Adding and Subtracting Within 10
- Introducing Addition and Subtraction Story Problems Within 10
- Composing and Decomposing Numbers Within 10
- Counting and Cardinality Within 20
- Composing and Decomposing Teen Numbers

Grade 1

- Fluently Adding and Subtracting Within 10
- Addition and Subtraction Story Problems Within 10
- Adding and Subtracting Within 20
- Addition and Subtraction Story Problems Within 20
- Place Value: Two-Digit Numbers
- Introducing Adding and Subtracting Within 100
- Length in Non-Standard Units
- Foundations of Multiplication

Grade 2

- Fluently Add and Subtract Within 20
- Adding and Subtracting Within 100
- Addition and Subtraction Story Problems Within 100
- Length in Standard Units
- Adding and Subtracting on the Number Line
- Place Value: Three-Digit Numbers
- Adding and Subtracting Within 1,000

Grade 3

- Multiplying within 100
- Area of Rectangles
- Fluently Adding and Subtracting Within 1,000
- Relating Multiplication to Division
- Multiplying and Dividing Within 100
- Introducing Fractions
- Introducing Fraction Equivalence and Comparison
- Length, Weight, and Liquid Volume

Grade 4

- Patterns, Factors, and Multiples
- Fraction Equivalence and Comparison
- Adding and Subtracting Fractions with Like Denominators
- Multiplying Fractions by Whole Numbers
- Place Value: Decimal and Multi-Digit Numbers
- Fluently Adding and Subtracting Multi-Digit Whole Numbers
- Multi-Step Problems Involving Measurement
- Multiplying Multi-Digit Whole Numbers
- Dividing Multi-Digit Whole Numbers

Grade 5

- Volume of Rectangular Prisms
- Fractions as Quotients
- Multiplying Fractions
- Dividing Fractions
- Multiplying and Dividing Multi-Digit Whole Numbers
- Adding and Subtracting Decimals
- Multiplying and Dividing Decimals
- Adding and Subtracting Fractions with Unlike Denominators

Topic map by domain: Grades K–5

Grade	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	Topic 8
K	CC Counting and Cardinality Within 10	CC Comparing Quantities Within 10	OA Adding and Subtracting Within 10	OA Introducing Addition and Subtraction Story Problems Within 10	OA Composing and Decomposing Numbers Within 10	CC Counting and Cardinality Within 20	NO Composing and Decomposing Teen Numbers	
1	OA Fluently Adding and Subtracting Within 10	OA Addition and Subtraction Story Problems Within 10	OA Adding and Subtracting Within 20	OA Addition and Subtraction Story Problems Within 20	NO Place Value: Two-Digit Numbers	NO Introducing Adding and Subtracting Within 100	MD Length in Non-Standard Units	
2	OA Fluently Adding and Subtracting Within 20	NO Adding and Subtracting Within 100	OA Addition and Subtraction Story Problems Within 100	MD Length in Standard Units	MD Adding and Subtracting on the Number Line	NO Place Value: Three-Digit Numbers	NO Adding and Subtracting Within 1,000	OA Foundations for Multiplication
3	OA Multiplying Within 100	MD Area of Rectangles	NO Fluently Adding and Subtracting within 1,000	OA Multiplying and Dividing Within 100	F Introducing Fractions	F Introducing Fraction Equivalence and Comparison	MD Length, Weight, and Liquid Volume	
4	OA Patterns, Factors, and Multiples	F Fraction Equivalence and Comparison	F Adding and Subtracting Fractions with Like Denominators	F Multiplying Fractions by Whole Numbers	NO Place Value: Decimal and Multi-Digit Numbers	NO Fluently Adding and Subtracting Multi-Digit Whole Numbers	MD Multi-Step Problems Involving Measurement	NO Dividing Multi-Digit Whole Numbers
5	MD Volume of Rectangular Prisms	F Fractions as Quotients	F Multiplying Fractions	F Dividing Fractions	NO Multiplying and Dividing Multi-Digit Whole Numbers	NO Adding and Subtracting Decimals	NO Multiplying and Dividing Decimals	F Adding and Subtracting Fractions with Unlike Denominators

Key:  **CC** - Counting and Cardinality  **OA** - Algebraic Thinking  **NO** - Number and Operations  **MD** - Measurement and Data  **F** - Fractions

Learning progressions

This visual roadmap shows how foundational skills evolve into mathematical proficiency across 6–8, ensuring instructional coherence from core instruction to intervention.

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Priority Math Domain	6	7	8
Geometry (G)		G	G
Ratios and Proportions (RP)	RP	RP	
Expressions and Equations (EE)	EE	EE	EE
Number System (NS)	NS	NS	
Statistics and Probability (SP)			SP
Functions (F)			F

Intervention topics by grade

Grade 6

- Intro to Ratio Reasoning
- Ratio Reasoning: Unit Conversion and Unit Rates
- Percentages
- Dividing Fractions
- Operations with Decimals
- Solving One-Step Equations
- Writing and Evaluating Equivalent Expressions
- Representing Relationships
- Integers, Inequalities, and the Coordinate Plane

Grade 7

- Scaled Copies and Scale Drawings
- Representing Proportional Relationships
- Proportional Relationships with Percentages
- Operations with Positive and Negative Numbers
- Solving Two-Step Equations
- Writing Equivalent Expressions
- Solving and Graphing Inequalities

Grade 8

- Rigid Transformations and Congruence
- Dilations and Similarity
- Linear Relationships and Slope
- Solving Linear Equations
- Solving Systems of Linear Equations
- Functions
- Two-Variable Data
- Exponent Properties and Scientific Notation
- Square Roots and Cube Roots
- The Pythagorean Theorem and Irrational Numbers

Topic map by domain: Grades 6–8

Grade	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5	Topic 6	Topic 7	Topic 8	Topic 9	Topic 10
6	RP Intro to Ratio Reasoning Coming November 2026	RP Ratio Reasoning: Unit Conversion and Unit Rates Coming November 2026	RP Percentages Coming November 2026	NS Dividing Fractions Coming July 2027	NS Operations with Decimals Coming July 2027	EE Solving One-Step Equations Coming November 2027	EE Writing and Evaluating Equivalent Expressions Coming November 2027	RP Representing Relationships Coming July 2027	NS Integers, Inequalities, and the Coordinate Plane Coming July 2027	
7	G Scaled Copies and Scale Drawings Coming July 2027	RP Representing Proportional Relationships Coming November 2026	RP Proportional Relationships with Percentages Coming November 2026	NS Operations with Positive and Negative Numbers Coming July 2027	EE Solving Two-Step Equations Coming March 2027	EE Writing Equivalent Expressions Coming March 2027	EE Solving and Graphing Inequalities Coming March 2027			
8	G Rigid Transformations and Congruence Coming July 2027	G Dilations and Similarity Coming July 2027	EE Linear Relationships and Slope	EE Solving Linear Equations Coming November 2026	EE Solving Systems of Linear Equations Coming November 2026	F Functions Coming March 2027	SP Two-Variable Data Coming July 2027	EE Exponent Properties and Scientific Notation Coming July 2027	EE Square Roots and Cube Roots Coming July 2027	G The Pythagorean Theorem and Irrational Numbers Coming July 2027

Key: G - Geometry RP - Ratios and Proportions EE - Expressions and Equations NS - Number System SP - Statistics and Probability F - Functions