Learning Progression   Grade 1
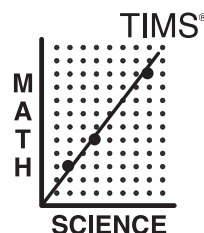
Math Trailblazers®

Fourth Edition

Math Trailblazers

Common Core State Standards

Math Trailblazers Grade 1 Learning Progression

Program Scope and Sequence

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MATH
SCIENCE

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The Learning Progression outlines the Key Ideas that guide the Math Trailblazers® program. These Key Ideas fall within five strands: Number, Algebra, Geometry, Measurement, and Data. Each Key Idea is listed, followed by a chart that details each unit that addresses that Key Idea. Under each unit number is a list of the specific Math Trailblazers Expectations that correlate with the larger Key Idea. Expectations are also correlated with Common Core State Standards for Mathematics, Standards for Mathematical Practice, and mathematical strands. Together, these elements provide a comprehensive Scope and Sequence for the Math Trailblazers curriculum.

Key Idea Number 1: Number Sense *continued*

Expectations

UNIT 6	UNIT 7	UNIT 8	UNIT 9
1.6.E1. Name the partitions of 10. [1.OA.6] [MP6] (N1)	1.7.E1. Represent and identify quantities using connecting links, coins, and symbols. [1.NBT.1, 1.NBT.2, 1.OA.6] (N1)	1.8.E1. Compare and order quantities (e.g., lengths, areas). [1.NBT.3, 1.MD.1] (N1)	1.9.E1. Count forward and backward by ones, twos, fives, and tens. [1.NBT.2, 1.OA.5] (N1, N2)
	1.7.E2. Connect representations of quantities (e.g., ten frames, connecting links, coins, and symbols). [1.NBT.1, 1.NBT.2] (N1)	1.8.E2. Use symbols (e.g., <, >, =) to show comparisons of quantities. [1.NBT.3] (N1, A2)	1.9.E2. Read and write numbers to 50. [1.NBT.1] (N1)
	1.7.E3. Skip count by fives and tens and count on to find the value of a set of coins. [1.OA.5] (N1)		1.9.E3. Identify, describe, and extend repeating patterns on the 100 Chart and in lines of objects. [1.NBT.2] [MP7, MP8] (N1, A1)
	1.7.E4. Group and count objects by twos, fives, and tens and count on to count the leftovers. [1.NBT.2, 1.OA.5] [MP2] (N1)		1.9.E4. Identify, describe, and extend growing patterns on the 100 Chart and on number lines. [1.OA.5, 1.NBT.2] [MP8] (N1, A1)
	1.7.E5. Compare and order quantities (e.g., lengths using comparative language: shorter, longer, shortest, longest). [1.NBT.3, 1.MD.1] [MP2] (N1)		1.9.E5. Identify the pattern unit in a repeating pattern. [1.OA.5, 1.NBT.2] [MP8] (N1, A1)
	1.7.E9. Measure and estimate length using nonstandard units (e.g., paper clips) and standard units (e.g., inches). [1.MD.2] (M2, N1)		1.9.E6. Represent patterns using objects, pictures, number lines, 100 Chart, words, and symbols. [1.OA.5, 1.NBT.] [MP7] (N1, A1)

NUMBER

Math Trailblazers Learning Progression **3**

- Key Idea: Every grade of the Math Trailblazers program is designed around the same set of Key Ideas. These Key Ideas appear as horizontal headers in the Learning Progression.

- Expectations: Expectations are listed by unit under the Key Ideas. These Expectations correlate with Key Ideas, but are more specific to the content taught in the listed unit

- Mathematical Strand: The Learning Progression is organized by mathematical strands, which are color-coded and listed vertically along the edge of each page

- Correlations: Each Expectation includes a list of codes indicating the correlations to the Common Core State Standards, the Standards for Mathematical Practice, and the mathematical strands.

1.3.E3. Compose and decompose numbers from 1–20 using counters, ten frames, number lines, diagrams, and number sentences. [1.NBT.2, 1.OA.5, 1.OA.6] [MP1, MP2] (N1, A3)

- Common Core State Standards
- Standards for Mathematical Practice
- Mathematical strands, numbered by Key Ideas

GRADE 1

Students develop strategies for adding and subtracting whole numbers. They use direct models, counting strategies, and reasoning strategies to model and solve a variety of join, separate, part-whole, and compare problems. Using these strategies, students further develop their understanding of the properties of and relationship between addition and subtraction. Students develop an understanding of the unit of 10 as they compose and decompose numbers through 200. They develop strategies to add and subtract multiples of ten. Students then compare and problem-solve with these larger numbers. Students use this understanding to measure length. Students analyze and describe two-dimensional and three-dimensional shapes, and partition shapes into equal shares to solve problems.

Key Idea Number 1: Number Sense
Understand the base-ten number system, recognize relationships among quantities and numbers, and represent numbers in multiple ways.

Expectations

UNIT 1	UNIT 3	UNIT 4	UNIT 5
1.1.E1. Count a collection of 0–20 objects. [K.CC.5, 1.NBT.1] (N1)	1.3.E1. Represent and identify quantities from 1–20 using ten frames, counters, tallies, number lines, and symbols. [1.NBT.1] [MP1, MP2, MP4] (N1)	1.4.E1. Compose and decompose numbers from 1–20 using counters, drawings, ten frames, number lines, diagrams, and number sentences. [1.NBT.1, 1.OA.6] (N1)	1.5.E1. Group and count objects by twos, fives, and tens. [1.NBT.2] (N1)
1.1.E2. Identify the quantity of a small collection of objects without counting. [K.CC.2] (N1)			1.5.E2. Skip count by fives and count on to find the value of a set of coins. [1.OA.5] (N1)
1.1.E3. Compare and order quantities using more, less, or about the same. [K.CC.6] [MP2, MP3] (N1, N3)	1.3.E2. Connect representations of quantities (e.g., ten frames, tallies, counters, number lines, symbols). [1.NBT.1, 1.NBT.2] [MP1, MP2, MP4] (N1)	1.4.E2. Identify even and odd quantities using groups of two and groups of two with a leftover. [1.NBT.1] [MP7] (N1, A1)	1.5.E3. Read and write numbers to 50. [1.NBT.1] (N1)
1.1.E4. Count on from a given number. [K.CC.2] (N1)			1.5.E4. Represent and identify quantities using counters, coins, number lines, ten frames, 100 Chart, pictures, data tables, and graphs. [1.NBT.1, 1.NBT.2, 1.OA.6] (N1, D2)
1.1.E5. Read and write numbers to 20. [K.CC.3, 1.NBT.1] (N1)	1.3.E3. Compose and decompose numbers from 1–20 using counters, ten frames, number lines, diagrams, and number sentences. [1.NBT.2, 1.OA.5, 1.OA.6] [MP1, MP2] (N1, A3)	1.4.E3. Represent quantities using a ten frame, counters, pictures, number lines, and symbols. [1.NBT.1] (N1)	
1.1.E6. Connect representations of quantities (e.g., tallies, number lines, counters, symbols). [K.CC.3] (N1)		1.4.E4. Connect representations of quantities (e.g., counters, pictures, symbols). [1.NBT.1] (N1)	1.5.E5. Connect representations of quantities (e.g., number lines, coins, counters, symbols, ten frames, data tables, graphs). [1.NBT.1, 1.NBT.2] (N1)
1.1.E7. Represent a quantity of objects on a number line, with counters, or with tallies. [K.CC.3] (N1)	1.3.E4. Recognize quantities by comparing them to the benchmarks five and ten using tallies, ten frames, number lines, and counters. [1.NBT.1, 1.NBT.2] [MP1, MP2, MP4] (N1)		

NUMBER

Key Idea Number 1: Number Sense *continued*

Expectations			
UNIT 6	**UNIT 7**	**UNIT 8**	**UNIT 9**
1.6.E1. Name the partitions of 10. [1.OA.6] [MP6] (N1)	1.7.E1. Represent and identify quantities using connecting links, coins, and symbols. [1.NBT.1, 1.NBT.2, 1.OA.6] (N1)	1.8.E1. Compare and order quantities (e.g., lengths, areas). [1.NBT.3, 1.MD.1] (N1)	1.9.E1. Count forward and backward by ones, twos, fives, and tens. [1.NBT.2, 1.OA.5] (N1, N2)
	1.7.E2. Connect representations of quantities (e.g., ten frames, connecting links, coins, and symbols). [1.NBT.1, 1.NBT.2] (N1)	1.8.E2. Use symbols (e.g., $<$, $>$, $=$) to show comparisons of quantities. [1.NBT.3] (N1, A2)	1.9.E2. Read and write numbers to 50. [1.NBT.1] (N1)
	1.7.E3. Skip count by fives and tens and count on to find the value of a set of coins. [1.OA.5] (N1)		1.9.E3. Identify, describe, and extend repeating patterns on the 100 Chart and in lines of objects. [1.NBT.2] [MP7, MP8] (N1, A1)
	1.7.E4. Group and count objects by twos, fives, and tens and count on to count the leftovers. [1.NBT.2, 1.OA.5] [MP2] (N1)		1.9.E4. Identify, describe, and extend growing patterns on the 100 Chart and on number lines. [1.OA.5, 1.NBT.2] [MP8] (N1, A1)
	1.7.E5. Compare and order quantities (e.g., lengths using comparative language: shorter, longer, shortest, longest). [1.NBT.3, 1.MD.1] [MP2] (N1)		1.9.E5. Identify the pattern unit in a repeating pattern. [1.OA.5, 1.NBT.2] [MP8] (N1, A1)
	1.7.E9. Measure and estimate length using nonstandard units (e.g., paper clips) and standard units (e.g., inches). [1.MD.2] (M2, N1)		1.9.E6. Represent patterns using objects, pictures, number lines, 100 Chart, words, and symbols. [1.OA.5, 1.NBT.] [MP7] (N1, A1)

NUMBER

Key Idea Number 1: Number Sense *continued*

Expectations

UNIT 10	UNIT 11	UNIT 12	UNIT 14
1.10.E1. Represent and identify numbers to 100 using counters, number lines, ten frames, 100 Chart, drawings, and symbols. [1.NBT.1, 1.NBT.2, 1.NBT.4, 1.NBT.5] (N1, A3)	1.11.E1. Partition 100 into groups of ten. [1.NBT.2] (N1)	1.12.E1. Represent doubles, near doubles, and halves using counters, pictures, and number sentences. [1.OA.1, 1.OA.2] [MP2, MP4] (N1, A3)	1.14.E1. Represent addition and subtraction problems using counters, number lines, ten frames, drawings, or number sentences. [1.OA.1] (N1, A3)
1.10.E2. Represent partitions of two-digit quantities as tens and leftover ones. [1.NBT.2] [MP2] (N1)	1.11.E2. Represent partitions of numbers using links, coins, 100 Chart, and number sentences. [1.OA.1, 1.OA.2] (N1)	1.12.E2. Represent addition and subtraction using stories, drawings, diagrams, counters, number sentences, number lines, or ten frames. [1.OA.1, 1.OA.2] [MP1, MP5] (N1, A3)	1.14.E2. Represent repeated addition and repeated subtraction using counters, drawings, and number sentences. [1.OA.1] [MP7, MP8] (N1, A3)
1.10.E3. Compare quantities and represent that relationship using less than, greater than, between (e.g., intervals), and closer to. [1.NBT.3] [MP2] (N1, A3)	1.11.E3. Represent addition and subtraction using number sentences [1.OA.1, 1.OA.2] (N1, A3)		
	1.11.E4. Read and write numbers to 100. [1.NBT.1] (N1)		
	1.11.E5. Identify numbers that are 10 more, 10 less, one more, and one less than a number using the 100 Chart and the number line. [1.NBT.5, 1.NBT.6] (N1)		
	1.11.E6. Use skip counting to find the value of a collection of pennies, nickels, dimes, and quarters. [1.OA5] (N1)		

NUMBER

Key Idea Number 1: Number Sense *continued*

Expectations

UNIT 15	UNIT 17		
1.15.E1. Represent and describe fractions ($\frac{1}{2}$ and $\frac{1}{4}$) using manipulatives, drawings, and symbols. [1.G.2, 1.G.3] [MP2, MP4] (N1)	1.17.E1. Represent and identify larger quantities (e.g., to 200) using groups of counters, drawings, symbols, number lines, number charts, and words. [1.NBT.1] [MP1, MP2, MP5] (N1)		
1.15.E2. Use words and numbers to name part of a whole (e.g., halves, fourths, half of, quarter of). [1.G.3] [MP6] (N1)	1.17.E2. Use and apply place value concepts to make connections among representations of numbers to 200. [1.NBT.2] [MP1, MP2, MP7] (N1)		
1.15.E3. Recognize that fractional parts of a whole may be different shapes but must be the same size. [1.G.3, 2.G.3] (N1, G3, G4)	1.17.E3. Use efficient grouping strategies to count a collection of up to 200 objects. [1.NBT.1, 1.NBT.2, 1.NBT.4, 1.NBT.5] [MP1, MP5, MP7] (N1)		
1.15.E4. Make connections among representations and symbols. [MP4] (N1, A3)			
1.15.E5. Partition a shape or set into two and four equal shares. [1.G.2, 1.G.3] [MP1, MP2, MP3] (N1, G3, G4)	1.17.E4. Read and write numbers to 200 using symbols. [1.NBT.1] (N1)		
1.15.E6. Recognize that decomposing into more equal shares creates smaller shares. [1.G.2, 1.G.3] [MP2] (N1, G3, G4)	1.17.E5. Use a benchmark to estimate a quantity of objects in a collection. [1.NBT.2] [MP2, MP5, MP6] (N1)		
1.15.E7. Recognize that the same fractional parts of different-sized wholes are not equal. [3.NF.3] [MP2] (N1, G4)	1.17.E6. Use symbols (e.g., $<$, $>$, $=$) to show comparisons of quantities. [1.NBT.3] [MP6] (N1, A2)		
	1.17.E7. Recognize that the equal sign represents the relationship between two equal quantities. [1.OA.7] [MP6] (N1, A3)		

NUMBER

Key Idea Number 2: Operations Understand the meaning of numerical operations and their application for solving problems.

Expectations

UNIT 3	UNIT 4	UNIT 5	UNIT 6
1.3.E5. Solve addition problems using the counting-on strategy. [1.OA.1, 1.OA.2, 1.OA.6] [MP1, MP2] (N2)	1.4.E5. Solve addition problems using the counting-on strategy. [1.OA.5, 1.OA.6] (N2)	1.5.E6. Divide a collection of objects into groups of a given size including groups of ten and count the leftovers. [1.OA.5, 1.NBT.2] [MP2] (N2)	1.6.E2. Represent addition and subtraction using stories, drawings, diagrams, counters, number sentences, number lines, or ten frames. [1.OA.1] [MP1, MP2, MP6] (N2, A3)
1.3.E6. Represent addition situations using drawings, diagrams, ten frames, counters, number lines, and number sentences. [1.OA.1, 1.OA.2, 1.OA.6] [MP1, MP2, MP4] (N2)	1.4.E6. Solve addition word problems (e.g., adding to, putting together, comparing) involving two or three whole numbers whose sum is less than or equal to 30 using tools (e.g., counters, number lines, calculators, diagrams, ten frames, calendars). [1.OA.1, 1.OA.2, 1.OA.6, 1.OA.8] [MP1, MP2, MP3, MP4, MP5, MP6, MP8] (N2)	1.5.E7. Solve addition word problems involving two or three whole numbers whose sum is less than 30 using tools (e.g., counters, diagrams, ten frames, data tables, bar graphs). [1.OA.2] [MP2] (N2, D4, A4)	1.6.E3. Find the related subtraction sentence for an addition sentence (e.g., fact families). [1.OA.8] [MP2] (N2, A3)
1.3.E7. Solve addition word problems (e.g., adding to, putting together, comparing) involving two or three whole numbers whose sum is less than or equal to 20 using counters and ten frames. [1.OA.1, 1.OA.2, 1.OA.6] [MP1, MP3, MP4, MP5] (N2)	1.4.E7. Represent addition situations with stories, drawings, diagrams, counters, number lines, and number sentences. [1.OA.7] [MP1, MP2, MP3, MP6, MP8] (N2, A3)		1.6.E4. Use strategies that apply the properties of addition (e.g. turn around, zero) to solve addition and subtraction problems. [1.OA.3] [MP2, MP7] (N2, A4)
			1.6.E5. Find the unknown whole number in an addition or subtraction equation relating three whole numbers. [1.OA.8] (N2, A4)
			1.6.E6. Solve word problems (e.g., join, separate/take away, part-whole, compare) involving two whole numbers whose answer is less than or equal to 10. [1.OA.1] [MP6] (N2)

UNIT 7	UNIT 8	UNIT 9	UNIT 12
1.7.E6. Solve addition problems involving length and whole numbers whose sums are less than 30 using tools (e.g., connecting links, tables, or graphs). [1.OA.2] [MP4, MP5] (N2, D3)	1.8.E3. Represent partitions of quantities using number sentences and area models. [1.OA.5] (N2, A3)	1.9. E1. Count forward and backward by ones, twos, fives, and tens. [1.NBT.2, 1.OA.5] (N1, N2)	1.12.E3. Solve word problems (e.g., join, separate/take away, part-whole, compare) involving two whole numbers whose sum is between 10 and 20. [1.OA.1, 1.OA.2, 1.OA.4, 1.OA.8] [MP1] (N2)
			1.12.E4. Recognize that the equal sign represents the relationship between two equal quantities. [1.OA.7] [MP1, MP2, MP4] (N2, A3)

UNIT 14		
1.14.E3. Solve repeated addition and repeated subtraction problems using drawings, skip counting, and invented strategies. [1.NBT.4, 1.NBT.6] (N2)		

NUMBER

Key Idea Number 3: Computation and Estimation Use efficient and flexible procedures to compute accurately and make reasonable estimates.

Expectations

UNIT 1	UNIT 6	UNIT 7	UNIT 8
1.1.E3. Compare and order quantities using more, less, or about the same. [K.CC.6] [MP2, MP3] (N1, N3)	1.6.E7. Add and subtract within 10 using invented, counting (e.g., counting on, counting up, counting back), and reasoning (e.g., making ten, using ten, using doubles) strategies. [1.OA.3, 1.OA.6] [MP2] (N3) 1.6.E8. Use mental math strategies to add (e.g., direct modeling, counting strategies, or reasoning from known facts) for the facts in Groups A and B. [1.OA.6] (N3)	1.7.E12. Use mental math strategies to add (direct modeling, counting strategies, or reasoning from known facts) for the facts in Group C with sums to ten. [1.OA.6] (N3)	1.8.E7. Use mental math strategies to add (e.g., direct modeling, counting strategies, or reasoning from known facts) for the facts in Group D with sums to ten. [1.OA.6] (N3)

UNIT 9	UNIT 10	UNIT 11	UNIT 12
1.9.E12. Demonstrate fluency with the addition facts in Groups A and B. [1.OA.6] (N3) 1.9.E13. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Groups A and B. [1.OA.8] (N3, A4)	1.10.E9. Demonstrate fluency with the addition facts with sums to ten in Group C. [1.OA.6] (N3) 1.10.E10. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts with sums to ten in Group C. [1.OA.8] (N3, A4)	1.11.E7. Solve addition and subtraction problems involving multiples of ten using links, coins, ten frames, and the 100 Chart. [1.OA.1, 1.OA.2] (N3) 1.11.E12. Demonstrate fluency with the addition facts with sums to ten in Group D. [1.OA.6] (N3) 1.11.E13. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts with sums to ten in Group D. [1.OA.8] (N3, A4)	1.12.E5. Use mental math strategies and reasoning strategies (e.g., using doubles, using ten, making ten) to solve addition problems with sums between 10 and 20 and the related subtraction problems. [1.OA.1, 1.OA.3, 1.OA.6] [MP2, MP3, MP5] (N3) 1.12.E6. Use strategies that apply the properties of addition (e.g., turn around, compose and decompose numbers) to solve addition and subtraction problems. [1.OA.1, 1.OA.3, 1.OA.6] [MP2, MP3, MP5] (N3, A4) 1.12.E7. Find the unknown whole number in an addition or subtraction equation relating three whole numbers. [1.OA.4, 1.OA.8] [MP1, MP2, MP4] (N3, A4) 1.12.E8. Demonstrate fluency with the addition facts in Group A (0 + 1, 1 + 1, 2 + 1, 3 + 1, 0 + 2, 2 + 2, 3 + 2, 4 + 2). [1.OA.6] (N3) 1.12.E9. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group A. [1.OA.3, 1.OA.4, 1.OA. 8] (N3, A4)

NUMBER

Key Idea Algebra 1: Identifying Patterns
Identify and describe patterns and relationships, including how a change in one variable relates to a change in a second variable.

Expectations

UNIT 4	UNIT 9	UNIT 14	
1.4.E2. Identify even and odd quantities using groups of two and groups of two with a leftover. [1.NBT.1] [MP7] (N1, A1)	1.9.E3. Identify, describe, and extend repeating patterns on the 100 Chart and in lines of objects. [1.NBT.2] [MP7, MP8] (N1, A1)	1.14.E6. Identify and describe patterns in addition and subtraction problems represented in a rule machine. [1.MD.4] [MP1, MP2, MP5] (D3, A1, A4)	
	1.9.E4. Identify, describe, and extend growing patterns on the 100 Chart and on number lines. [1.OA.5] [1.NBT.2] [MP8] (N1, A1)		
	1.9.E5. Identify the pattern unit in a repeating pattern. [1.OA.5] [1.NBT.2] [MP8] (N1, A1)		
	1.9.E6. Represent patterns using objects, pictures, number lines, 100 Chart, words, and symbols. [1.OA.5, 1.NBT.2] [MP7] (N1, A1)		

Key Idea Algebra 2: Tables and Graphs
Represent patterns and relationships with graphs, tables, and diagrams.

UNIT 3	UNIT 5	UNIT 7	UNIT 8
1.3.E8. Collect and organize information in a data table. [1.MD.4] [MP1, MP4] (D1, A2)	1.5.E8. Collect and organize information in a data table. [1.MD.4] (D1, A2)	1.7.E10. Make a bar graph to find information about a data set. [1.MD.4] [MP4] (D2, A2)	1.8.E2. Use symbols (e.g., $<$, $>$, $=$) to show comparisons of quantities. [1.NBT.3] (N1, A2)
	1.5.E9. Make a bar graph to find information about a data set. [1.MD.4] (D2, A2)		

UNIT 9	UNIT 10	UNIT 17	
1.9.E10. Read and describe patterns in data represented in a data table or bar graph. [1.MD.4] [MP1, MP5] (D3, A2)	1.10.E6. Collect and organize information in a data table. [1.MD.4] [MP2] (D1, A2)	1.17.E6. Use symbols (e.g., $<$, $>$, $=$) to show comparisons of quantities. [1.NBT.3] [MP6] (N1, A2)	
	1.10.E7. Make a bar graph. [1.MD.4] [MP4] (D2, A2)		

ALGEBRA

Key Idea Algebra 3: Symbols Represent patterns and relationships with symbols (includes using variables in formulas and as unknowns in equations).

Expectations

UNIT 3	UNIT 4	UNIT 5	UNIT 6
1.3.E3. Compose and decompose numbers from 1–20 using counters, ten frames, number lines, diagrams, and number sentences. [1.NBT.2, 1.OA.5, 1.OA.6] [MP1, MP2] (N1, A3)	1.4.E7. Represent addition situations with stories, drawings, diagrams, counters, number lines, and number sentences. [1.OA.7] [MP1, MP2, MP3, MP6, MP8] (N2, A3)	1.5.E10. Read a data table or bar graph to find information about a data set. [1.MD.4] (D3, A3)	1.6.E2. Represent addition and subtractions using stories, drawings, diagrams, counters, number sentences, number lines, or ten frames. [1.OA.1] [MP1, MP2, MP6] (N2, A3)
			1.6.E3. Find the related subtraction sentence for an addition sentence (e.g., fact families). [1.OA.8] [MP2] (N2, A3)

UNIT 7	UNIT 8	UNIT 10	
1.7.E11. Read a table or bar graph to find information about a data set. [1.MD.4] (D3, A3)	1.8.E3. Represent partitions of quantities using number sentences and area models. [1.OA.5] (N2, A3)	1.10.E1. Represent and identify numbers to 100 using counters, number lines, ten frames, 100 Chart, drawings, and symbols. [1.NBT.1, 1.NBT.2, 1.NBT.4, 1.NBT.5] (N1, A3)	1.11.E3. Represent addition and subtraction using number sentences. [1.OA.1, 1.OA.2] (N1, A3)
		1.10.E3. Compare quantities and represent that relationship using less than, greater than, between (e.g., intervals), and closer to. [1.NBT.3] [MP2] (N1, A3)	

Key Idea Algebra 3: Symbols *continued*

Expectations

UNIT 12	UNIT 13	UNIT 14	UNIT 15
1.12.E1. Represent doubles, near doubles, and halves using counters, pictures, and number sentences. [1.OA.1, 1.OA.2] [MP2, MP4] (N1, A3)	1.13.E2. Represent the volume of an object using symbols, connecting cubes, and number sentences. [1.OA.1, 1.OA.2] (M1, A3)	1.14.E1. Represent addition and subtraction problems using counters, number lines, ten frames, drawings, or number sentences. [1.OA.1] (N1, A3)	1.15.E4. Make connections among representations and symbols. [MP4] (N1, A3)
1.12.E2. Represent addition and subtraction using stories, drawings, diagrams, counters, number sentences, number lines, or ten frames. [1.OA.1, 1.OA.2] [MP1, MP5] (N1, A3)		1.14.E2. Represent repeated addition and repeated subtraction using counters, drawings, and number sentences. [1.OA.1] [MP7, MP8] (N1, A3)	
1.12.E4. Recognize that the equal sign represents the relationship between two equal quantities. [1.OA.7] [MP1, MP2, MP4] (N2, A3)			

UNIT 17
1.17.E7. Recognize that the equal sign represents the relationship between two equal quantities. [1.OA.7] [MP6] (N1, A3)

Key Idea Algebra 4: Using Patterns Apply relationships, properties, and patterns to solve problems, develop generalizations, or make predictions.

UNIT 5	Unit 6	UNIT 9	UNIT 10
1.5.E7. Solve addition word problems involving two or three whole numbers whose sum is less than 30 using tools (e.g., counters, diagrams, ten frames, data tables, or bar graphs). [1.OA.2] [MP2] (N2, D4, A4)	1.6.E4. Use strategies that apply the properties of addition (e.g., turn-around, zero) to solve addition and subtraction problems. [1.OA.3] [MP2, MP7] (N2, A4)	1.9.E11. Make predictions and solve problems about a data set represented in a data table or bar graph. [1.MD.4] [MP7] (D4, A4)	1.10.E8. Read a table or bar graph to make predictions and solve problems about a data set. [1.MD.4, 1.NBT.3, 1.NBT.4] [MP2] (D4, A4)
1.5.E11. Make predictions and generalizations about a data set using a data table and bar graph. [1.MD.4] (D4, A4)	1.6.E5. Find the unknown whole number in an addition or subtraction equation relating three whole numbers. [1.OA.8] (N2, A4)	1.9.E13. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Groups A and B. [1.OA.8] (N3, A4)	1.10.E10. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts with sums to ten in Group C. [1.OA.8] (N3, A4)

ALGEBRA

Key Idea Algebra 4: Using Patterns *continued*

Expectations

UNIT 11	UNIT 12	UNIT 13	UNIT 14
1.11.E13. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts with sums to ten in Group D. [1.OA.8] (N3, A4)	1.12.E6. Use strategies that apply the properties of addition (e.g., turn-around, compose and decompose numbers) to solve addition and subtraction problems. [1.OA.1, 1.OA.3, 1.OA.6] [MP2, MP3, MP5] (N3, A4)	1.13.E8. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group B. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)	1.14.E6. Identify and describe patterns in addition and subtraction problems represented in a rule machine. [1.MD.4] [MP1, MP2, MP5] (D3, A1, A4)
	1.12.E7. Find the unknown whole number in an addition or subtraction equation relating three whole numbers. [1.OA.4, 1.OA.8] [MP1, MP2, MP4] (N3, A4)		1.14.E7. Read a table or bar graph to make predictions and solve problems about a data set. [1.MD.4] [MP1, MP2, MP5] (D4, D3, A4)
	1.12.E9. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group A. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)		1.14.E10. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group C. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)

UNIT 15	UNIT 16	UNIT 17	
1.15.E10. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group D. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)	1.16.E7. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group E. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)	1.17.E12. Determine the unknown number in an addition or subtraction sentence relating three whole numbers for the facts in Group F. [1.OA.3, 1.OA.4, 1.OA.8] (N3, A4)	

ALGEBRA

Key Idea Geometry 1: Shapes Identify, describe, classify, and analyze 2- and 3-dimensional shapes based on their properties.

Expectations

UNIT 2	UNIT 9	UNIT 13	UNIT 16
1.2.E1. Identify and name two-dimensional shapes. [1.G.1] (G1)	1.9.E7. Compose shapes that have line symmetry. [1.G.2] (G1, G3)	1.13.E5. Recognize that different shapes can have the same volume. (G1)	1.16.E1.Identify and name three-dimensional shapes (e.g, cylinders, spheres, rectangular prisms). [1.G.1] [MP4] (G1)
1.2.E2. Describe the properties of two-dimensional shapes (e.g., number of sides, length of sides, number of corners). [1.G.1] (G1)			1.16.E2. Describe the properties of three-dimensional shapes (e.g., shape of faces, number of faces, number of edges, number of corners). [1.G.1] [MP4] (G1)
1.2.E3. Compare and contrast two-dimensional shapes using their properties (e.g., number of sides, length of sides, number of corners). [1.G.1] [MP2] (G1)			1.16.E3. Compare and contrast three-dimensional objects using their properties (e.g, shape of faces, number of faces, number of edges, number of corners). [1.G.1, 1.G.2] [MP4] (G1)
1.2.E4. Compose and decompose two-dimensional shapes using pattern blocks. [1.G.2] [MP5] (G1)			1.16.E4. Compose and decompose three-dimensional shapes. [1.G.1, 1.G.2] [MP5] (G1)

Key Idea Geometry 3: Motion Apply transformations (slides, flips and turns) and use symmetry to analyze mathematical situations.

UNIT 9	UNIT 15		
1.9.E7. Compose shapes that have line symmetry. [1.G.2] (G1, G3)	1.15.E3. Recognize that fractional parts of a whole may be different shapes but must be the same size. [1.G.3, 2.G.3] (N1, G3, G4)		
	1.15.E5. Partition a shape or set into two and four equal shares. [1.G.2, 1.G.3] [MP1, MP2, MP3] (N1,G3, G4)		
	1.15.E6. Recognize that decomposing into more equal shares creates smaller shares. [1.G.2, 1.G.3] [MP2] (N1, G3, G4)		

GEOMETRY

Key Idea Geometry 4: Geometric Reasoning Use visualization, spatial reasoning, and geometric modeling to solve problems.

Expectations			
UNIT 2	**UNIT 13**	**UNIT 15**	**UNIT 16**
1.2.E5. Justify visual and spatial reasoning by identifying the properties of shapes. [1.G.1, 1.G.2] [MP3, MP5] (G4)	1.13.E3. Measure and estimate volume by building models and counting cubic units. [MP1, MP4] (M2, G4)	1.15.E3. Recognize that fractional parts of a whole may be different shapes but must be the same size. [1.G.3, 2.G.3] (N1, G3, G4)	1.16.E5. Justify visual and spatial reasoning by identifying properties of three-dimensional shapes. [1.G.1] [MP3] (G4)
	1.13.E6. Justify a solution using visual and spatial reasoning. [MP3, MP4] (G4)	1.15.E5. Partition a shape or set into two and four equal shares. [1.G.2, 1.G.3] [MP1, MP2, MP3] (N1, G3, G4)	
		1.15.E6. Recognize that decomposing into more equal shares creates smaller shares. [1.G.2, 1.G.3] [MP2] (N1, G3, G4)	
		1.15.E7. Recognize that the same fractional parts of different-sized wholes are not equal. [3.NF.3] [MP2] (N1, G4)	

Key Idea Measurement 1: Measurement Concepts Understand measurable attributes of objects or situations (length, area, mass, volume, size, time) and the units, systems, and processes of measurement.

Expectations

UNIT 7	UNIT 8	UNIT 9	UNIT 10
1.7.E7. Recognize that the measure of a length is dependent on the size of the unit of measure (e.g., a pencil is 4 large paper clips or 6 small paper clips). [1.MD.2] [MP2, MP6] (M1)	1.8.E4. Recognize that different shapes can have the same area. [3.MD.6] [MP1, MP6] (M1)	1.9.E8. Identify the hours on an analog clock. [1.MD.3] [MP2, MP6] (M1)	1.10.E4. Recognize that the measure of a volume is dependent on the size of the unit of measure (e.g., a cup is 40 large beans or 80 small beans). [1.MD.4] [MP2, MP6] (M1)
1.7.E8. Connect activities and events to the passage of time using actions, drawings, and stories. [1.MD.2] (M1)			

UNIT 11	UNIT 13		
1.11.E8. Recognize the relationship between larger and smaller units of measure (e.g., 1 hour is 60 minutes; 1 dime is 2 nickels). (M1)	1.13.E2. Represent the volume of an object using symbols, connecting cubes, and number sentences. [1.OA.1, 1.OA.2] (M1, A3)		
1.11.E9. Recognize that the measure of a length is dependent on the size of the unit of measure (e.g., a pencil is 4 large paper clips or 6 small paper clips). [1.MD.2] [MP2, MP6] (M1)			

Key Idea Measurement 2: Measurement Skills Use measurement tools, appropriate techniques, and formulas to determine measurements.

UNIT 1	UNIT 7	UNIT 8	UNIT 9
1.1.E8. Measure length with non-standard units (e.g., links). [K.MD.2, 1.MD.2] [MP5, MP6] (M2)	1.7.E9. Measure and estimate length using nonstandard units (e.g., paper clips) and standard units (e.g., inches). [1.MD.2] (M2, N1)	1.8.E5. Measure length in inches. [1.MD.2] (M2)	1.9.E9. Tell the approximate time using the hour hand. [1.MD.3] [MP2, MP6] (M2)
		1.8.E6. Find the area of a shape by counting square units and nonstandard units using efficient counting strategies. [1.NBT.1, 3.MD.6] [MP1, MP5, MP6] (M2)	

UNIT 10	UNIT 11	UNIT 13	
1.10.E5. Measure volume using nonstandard units. [1.MD.4] (M2)	1.11.E10. Read and write time to the nearest hour and half hour using an analog clock. [1.MD.3] (M2)	1.13.E3. Measure and estimate volume by building models and counting cubic units. [MP1, MP4] (M2, G4)	
	1.11.E11. Estimate lengths using non-standard and standard units (e.g., links, inches). [1.MD.2, 1.MD.4] (M2)	1.13.E4. Read and write time to the nearest hour and half hour using analog and digital clocks. [1.MD.3] (M2)	

MEASUREMENT

Key Idea Data 1: Data Collection Select, collect, and organize data to answer questions, solve problems, and make predictions.

Expectations

UNIT 3	UNIT 5	UNIT 10	
1.3.E8. Collect and organize information in a data table. [1.MD.4] [MP1, MP4] (D1, A2)	1.5.E8. Collect and organize information in a data table. [1.MD.4] (D1, A2)	1.10.E6. Collect and organize information in a data table. [1.MD.4] [MP2] (D1, A2)	

Key Idea Data 2: Data Representation Select and create appropriate representations, including tables and graphs, for organizing, displaying, and analyzing data.

UNIT 5	UNIT 7	UNIT 10	
1.5.E4. Represent and identify quantities using counters, coins, number lines, ten frames, 100 Chart, pictures, data tables, and graphs. [1.NBT.1, 1.NBT.2, 1.OA.6] (N1, D2)	1.7.E10. Make a bar graph to find information about a data set. [1.MD.4] [MP4] (D2, A2)	1.10.E7. Make a bar graph. [1.MD.4] [MP4] (D2, A2)	
1.5.E9. Make a bar graph to find information about a data set. [1.MD.4] (D2, A2)			

Key Idea Data 3: Data Description Describe a data set by interpreting graphs, identifying patterns, and using statistical measures; e.g, average and range.

UNIT 3	UNIT 5	UNIT 7	UNIT 9
1.3.E9. Read a data table or bar graph to find information about a data set. [1.MD.4] [MP1, MP3, MP4] (D3)	1.5.E10. Read a data table or bar graph to find information about a data set. [1.MD.4] (D3, A3)	1.7.E6. Solve addition problems involving length and whole numbers whose sums are less than 30 using tools (e.g., connecting links, tables, or graphs). [1.OA.2] [MP4, MP5] (N2, D3)	1.9.E10. Read and describe patterns in data represented in a data table or bar graph. [1.MD.4] [MP1, MP5] (D3, A2)
		1.7.E11. Read a table or bar graph to find information about a data set. [1.MD.4] (D3, A3)	

UNIT 14			
1.14.E6. Identify and describe patterns in addition and subtraction problems represented in a rule machine. [1.MD.4] [MP1, MP2, MP5] (D3, A1, A4)			
1.14.E7. Read a table or bar graph to make predictions and solve problems about a data set. [1.MD.4] [MP1, MP2, MP5] (D4, D3, A4)			

DATA

Key Idea Data 4: Using Data Apply relationships and patterns in data to solve problems, develop generalizations, and make predictions.

Expectations			
UNIT 5	**UNIT 9**	**UNIT 10**	**UNIT 14**
1.5.E7. Solve addition word problems involving two or three whole numbers whose sum is less than 30 using tools (e.g., counters, diagrams, ten frames, data tables, or bar graphs). [1.OA.2] [MP2] (N2, D4, A4)	1.9.E11. Make predictions and solve problems about a data set represented in a data table or bar graph. [1.MD.4] [MP7] (D4, A4)	1.10.E8. Read a table or bar graph to make predictions and solve problems about a data set. [1.MD.4, 1.NBT.3, 1.NBT.4] [MP2] (D4, A4)	1.14.E7. Read a table or bar graph to make predictions and solve problems about a data set. [1.MD.4] [MP1, MP2, MP5] (D4, D3, A4)
1.5.E11. Make predictions and generalizations about a data set using a data table and bar graph. [1.MD.4] (D4, A4)			

DATA

Notes

Notes

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