

# math expressions

Scope and Sequence  
Grades K–6



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## SCOPE AND SEQUENCE MATRIX

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	K	1	2	3	4	5	6
<b>Number Concepts</b>							
Compare numbers	•						
Count by ones	•						
Count by tens	•						
Count objects	•						
Count sets of objects	•						
Find how many in all	•						
Order numbers	•						
Ordinal numbers	•						
Use one-to-one correspondence to count	•						
Write numbers	•						

<b>Place Value and Operations</b>							
<b>Addition</b>							
Add decimals						•	◆
Add whole numbers	•	•	•	•	•		
Addition strategies		•	•	•			
Estimate decimal sums						•	
Estimation in 3-digit addition			•				
Properties of addition		•	•	◆	◆	•	◆
<b>Counting Sequence</b>							
Count backward			•				
Count forward	•	•	•				
Model whole numbers	•	•	•				
Read whole numbers	•	•	•				
Skip count	•	•	•				
Write whole numbers	•	•	•				

• Investigate and Analyze   ◆ Apply and Extend



	K	1	2	3	4	5	6
<b>Division</b>							
Divide decimals						•	◆
Divide whole numbers					•	•	◆
Division strategies					•	•	
Remainders					•	•	
<b>Multiplication</b>							
Area and array models				•	•		
Equations					•	◆	◆
Multiples of ten				•			
Multiplication strategies					•		
Multiply decimals						•	◆
Multiply whole numbers				•	•	•	
Properties of multiplication					•	◆	◆
Scale and multiplication						•	
<b>Place Value of Decimals</b>							
Compare and order decimals					•	•	
Decimal notation					•	•	
Read decimals					•	•	
Round decimals					•	•	
Write decimals in different forms						•	
<b>Place Value of Whole Numbers</b>							
Compare whole numbers	•	•	•	•	•		
Decompose into tens and ones	•	•					
Expanded form				•	•		
Exponents						•	◆
Make a ten	•	•	•				
Model whole numbers	•	•	•		•		

• Investigate and Analyze   ◆ Apply and Extend

	K	1	2	3	4	5	6
Order whole numbers	•	•	•		•		
Place-value models	•	•	•		•		
Powers of ten						•	◆
<b>Subtraction</b>							
Estimate decimal differences						•	
Estimation in 3-digit subtraction			•				
Subtract decimals						•	
Subtract whole numbers	•	•	•	•	•		
Subtraction strategies		•	•	•			

## Fractions and Operations

### Addition with Fractions


Add fractions					•	•	◆
Add mixed numbers					•	•	◆
Benchmark fractions						•	
Rename fractions and mixed numbers to add					•	◆	
Visual fraction models					•	◆	

### Decimal Fractions

Compare decimal fractions					•	•	
Decimal notation					•	◆	
Equivalent fractions and decimals					•	•	
Equivalent fractions, decimals, percents						•	◆
Money and decimals					•		
Place value of decimals					•	•	
Write decimals					•	•	

### Division with Fractions

Divide unit fractions						•	
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	K	1	2	3	4	5	6
Fractions as division						•	
Interpret division with fractions						•	
Visual fraction models						•	◆
<b>Fraction Equivalence</b>							
Common denominators					•	◆	
Compare and order fractions				•	•	•	
Equivalent fractions				•	•	•	◆
Equivalent fractions, decimals, percents						•	◆
Simplest form					•	◆	
On the number line				•	•	◆	
Use regions				•			
<b>Multiplication with Fractions</b>							
Distributive Property						•	
Find area of a rectangle with fractional measurements						•	
Multiples of unit fractions					•	•	
Multiply fractions					•	•	
Multiply mixed numbers					•	•	
Scale and multiplication of fractions						•	
Visual fraction models					•	•	
<b>Read and Write Fractions</b>							
Fractions				•			
Relate fractions to time, money, measurement				•			
Whole numbers as fractions				•			
<b>Subtraction of Fractions</b>							
Benchmark fractions						•	
Estimate differences						•	
Subtract fractions					•	•	◆

• Investigate and Analyze   ◆ Apply and Extend

	K	1	2	3	4	5	6
Subtract mixed numbers					•	•	◆
Subtraction with renaming					•	•	
Visual fraction models					•	•	
<b>Understand Fractions</b>							
Part of a group				•			
Part of a partitioned whole				•			
On the number line				•	•	◆	
Unit fractions				•	◆	◆	
Whole numbers and fractions				•	◆		

## Ratio, Proportion, and Percent

### Concept of Ratio

Density							•
Fractions and ratio							•
Model ratios							•
Notation for ratio							•
Rate language							•
Write ratios							•

### Rate and Ratio Reasoning

Convert measurements							•
Distance, rate, time formula							•
Equivalent ratios							•
Percent						•	•
Unit rate							•

	K	1	2	3	4	5	6
<b>Whole Numbers, Fractions, and Integers</b>							
<b>Addition and Subtraction of Decimals</b>							
Add decimals							•
Estimate solutions							•
Subtract decimals							•
<b>Common Factors and Multiples</b>							
Greatest common factor							•
Least common multiple							•
Prime factorization							•
<b>Division with Fractions</b>							
Divide fractions							•
Divide mixed numbers							•
Estimate solutions							•
Reciprocal and inverse operations							•
Visual fraction models							•
<b>Division with Whole Numbers and Decimals</b>							
Divide decimals							•
Divide whole numbers							•
Estimate solutions							•
<b>Multiplication</b>							
Estimate solutions							•
Multiply decimals							•
<b>Rational Numbers</b>							
Absolute value							•
Compare and order rational numbers							•
Find distance							•



	K	1	2	3	4	5	6
Graph on the coordinate plane						•	•
Negative and positive numbers							•
Opposites							•
Plot on the number line							•
Reflection on the axes							•

## Algebraic Reasoning and Operations

### Addition

Add whole numbers	•	•	•	•			
Addition strategies		•	•				
Additive comparison					•		
Basic facts		•	•	◆			
Decompose numbers	•	•					
Equal symbol	•	•					
Equations	•	•	•	•	•	•	
Estimate sums			•	•	◆		
Expressions	•						
Inverse of subtraction	•	•	◆				
Missing addend	•	•	◆				
Model addition	•	•	◆				
Multi-step word problems			•	•	•		
Plus symbol	•	•					
Real-world problems	•	•	•				
Three addends		•	•				
Word problems		•	•	•			
Write number sentences		•	•				




	K	1	2	3	4	5	6
<b>Division</b>							
Basic facts				•	•		
Division strategies				•			
Equations					•	•	
Measurement quantities				•			
Model division				•			
Multi-step word problems					•	◆	
Relationship with multiplication				•	◆		
Remainders					•	◆	
Strategies to divide				•	•		
Understand division				•	•		
<b>Factors and Multiples</b>							
Common factors					•		◆
Common multiples					•		◆
Divisibility rules					•		
Even and odd numbers					•		
Factors					•	◆	
Multiples					•	◆	
Prime numbers					•	◆	
<b>Multiplication</b>							
Arrays and area models			•	•	•		
Basic facts				•	•		
Equal groups			•	•			
Equations				•	•	•	
Even and odd numbers			•	•	◆	◆	
Measurement quantities				•			
Model multiplication				•	•		

• Investigate and Analyze   ◆ Apply and Extend

	K	1	2	3	4	5	6
Multiplication strategies				•			
Multiplicative comparison					•	•	
Relationship with division				•			
Strategies to multiply				•	◆		
Understand multiplication			•	•	•		
<b>Number and Shape Patterns</b>							
Even and odd numbers			•	•	•		
Generate two numerical patterns						•	
Graph two numerical patterns on the coordinate plane						•	
Identify, generate, explain number patterns	•	•	•	•	•		
Identify, generate, explain shape patterns	•	•					
Patterns on facts tables				•			
Skip-counting patterns				•			
Use or write a rule				•	•	•	
<b>Numerical Expressions</b>							
Evaluate numerical expressions					•	•	
Interpret numerical expressions					•	•	
Order of operations					•	•	
Write numerical expressions					•	•	
<b>Properties of Operations</b>							
Additive Identity Property		•	•	•	•	◆	◆
Associative Property of Addition		•	•	•	•	◆	◆
Associative Property of Multiplication				•	•	◆	◆
Commutative Property of Addition		•	•	•	•	◆	◆
Commutative Property of Multiplication				•	•	◆	◆
Distributive Property				•	•	◆	◆

• Investigate and Analyze   ◆ Apply and Extend



	K	1	2	3	4	5	6
Identity Property of Multiplication				•	•	◆	◆
Zero Property of Multiplication				•	•	◆	◆
<b>Subtraction</b>							
Basic facts		•	•	◆			
Decompose numbers	•	•					
Equal symbol	•	•					
Equations	•	•	•	•	•	•	
Estimate differences				•	◆	◆	
Expressions	•	◆					
Inverse of addition	•	•					
Minus symbol	•	•					
Missing numbers in subtraction	•	•					
Model subtraction	•	•					
Multi-step word problems			•	•	•		
Subtract whole numbers	•	•	•	•			
Subtract zero		•					
Subtraction strategies		•	•				
Word problems		•	•	•			
Write number sentences	•	•	•				

## Algebra and Quantitative Reasoning

### Algebraic Expressions

Equivalent algebraic expressions							•
Evaluate algebraic expressions					•	•	•
Identify parts of expressions							•
Model algebraic expressions							•
Write algebraic expressions							•

	K	1	2	3	4	5	6
<b>Dependent and Independent Variables</b>							
Analyze relationships between variables							•
Express relationships between variables							•
Graph relationships							•
Linear equations							•
Translate between equations and table values							•
<b>Equations</b>							
Linear equations on the coordinate plane						•	•
Meaning of equality						•	•
Model equations						•	•
Solve one-variable equations						•	•
Symbols showing relations						•	•
<b>Inequalities</b>							
Graph inequalities with one variable							•
Identify solutions							•
Solutions of inequalities on the number line							•
Solutions of inequalities using substitution							•
Symbols showing relations							•
Write inequalities						•	•
<b>Numerical Expressions</b>							
Write numerical expressions							•
Evaluate numerical expressions							•



	K	1	2	3	4	5	6
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## Measurement and Data Analysis

### MEASUREMENT

#### Length and Distance

Add lengths			•				
Benchmarks and relative size					•		
Choose appropriate tool and unit		•	•		•		
Compare lengths	•	•	•				
Convert units			•		•	•	
Customary system			•		•		
Estimate length			•		◆		
Measure distance around an object				•			
Measure length		•	•		•		
Measurements on a line plot			•				
Metric system			•		•		
Order lengths		•	•				
Real-world problems	•	•			•		
Subtract lengths			•				
Transitive property		•					

#### Liquid Volume and Capacity

Benchmarks and relative size				•	•		
Choose the appropriate tool and unit					•		
Compare capacities	•						
Convert units					•	•	
Customary system					•		
Estimate capacity							•
Estimate liquid volume				•	•		
Measure liquid volume				•	•		

• Investigate and Analyze ◆ Apply and Extend



	K	1	2	3	4	5	6
Metric system					•		
Word problems				•	•	•	
<b>Mass and Weight</b>							
Benchmarks and relative size				•	•		
Compare weights	•						
Choose the appropriate tool and unit				•	•		
Convert units					•	•	
Customary system					•		
Estimate mass				•			
Estimate weight							•
Measure mass				•	•		
Metric system					•		
Order weights	•						
Word problems				•	•	•	
<b>Money</b>							
Count coins and bills			•				
Decimal point in money amounts			•				
Decimals and money			•		•		
Equivalent values		•	•				
Fractions and money				•	•		
Identify coins and bills	•	•	•				
Operations with money					•		
Place value with pennies and dimes		•					
Symbolic notation			•				
<b>Temperature</b>							
Analog thermometer				•	•		
Estimate temperature				•			



	K	1	2	3	4	5	6
Fahrenheit and Celsius				•			
Read temperature				•			
<b>Time</b>							
A.M. and P.M.			•	•			
Clocks		•	•	•			
Convert units				•	•		
Elapsed time				•	•	◆	
Equivalent units			•				
Fractions and time				•	•		
Tell time		•	•	•			
Units of time			•	•	•		
<b>Data</b>							
Classify and count objects	•						
<b>Interpret Data</b>							
Bar graph		•	•	•	•	•	
Circle graph							•
Compare data		•		•	•	◆	◆
Double-bar graph						•	
Draw conclusions			•	•	•		
Frequency table				•	•	•	◆
Line plot			•	•	•	•	◆
Measurement data on a line plot			•	•	•	◆	
Measures of central tendency						•	•
Picture graph		•	•	•			
Scale						•	
Tally chart				•			
<b>Represent data</b>							
Bar graph		•	•	•	•	•	

• Investigate and Analyze   ◆ Apply and Extend



	K	1	2	3	4	5	6
Circle graph							•
Double-bar graph						•	
Frequency table				•	•	•	◆
Line plot			•	•	•	•	◆
Measurement data on a line plot			•	•	•	•	
Picture graph		•	•	•			
Scale						•	
Tally chart				•			

## GEOMETRIC MEASUREMENT

### Angles

Concept of angle					•		
Related to circles					•		
Measure angles with a protractor					•		
Measure angles using an equation					•		
Sketch angles					•		


### Area

Concept of area				•			
Estimate area of irregular figures							•
Find area of a complex figure				•	•		
Find area of a parallelogram						•	
Find area of a rectangle				•	•	•	
Find area of a triangle						•	
Formula for area					•	•	◆
Relate area to multiplication and division				•	◆	◆	
Relate area to perimeter				•	•	◆	
Units of area				•	•	◆	

	K	1	2	3	4	5	6
<b>Circle</b>							
Find circumference of a circle							•
Find area of a circle							•
Find circumference of a circle							•
<b>Perimeter</b>							
Compare area and perimeter				•			
Estimate perimeter of irregular figures							•
Find perimeter of a polygon				•			
Find perimeter of a rectangle				•	•		
Formula for perimeter					•		
Linear and area measures				•			
Relate area to perimeter				•			
<b>Triangles</b>							
Area of a triangle						•	
Missing angle measure							•
Sum of interior angles							•
<b>Volume</b>							
Attribute in solid figures						•	
Compare volumes						•	
Estimate volume						•	
Formula for volume						•	◆
Measure volume						•	
Model volume						•	
Volume as additive						•	
<b>Geometry</b>							
<b>Area</b>							
Changing dimensions and area							•

	K	1	2	3	4	5	6
Find area of a composite figure							•
Find area of a parallelogram							•
Find area of a regular polygon							•
Find area of a trapezoid							•
Find area of a triangle							•
Formulas for area							•
<b>Coordinate Plane</b>							
Define a coordinate system						•	
Graph in the first quadrant						•	
Ordered pairs						•	
<b>Surface Area</b>							
Find surface area of a cube							•
Find surface area of a prism						•	•
Find surface area of a pyramid							•
Nets						•	•
<b>Three-Dimensional Shapes</b>							
Attributes of three-dimensional shapes	•	•	•				
Classify shapes		•	•			•	
Compose and decompose shapes	•	•	•				
Identify and describe shapes	•	•	•				
Identify shapes in the environment	•	•					
Make and draw shapes		•	•				
Sort shapes	•	•	•				
<b>Two-Dimensional Shapes</b>							
Angles				•	•	•	
Attributes of two-dimensional shapes	•	•	•	•			
Circles							•
Classify angles				•	•		

• Investigate and Analyze ♦ Apply and Extend



	K	1	2	3	4	5	6
Classify polygons				•	•	•	
Classify quadrilaterals				•	•	•	
Classify shapes		•	•	•			
Classify triangles by angles				•	•	•	
Classify triangles by sides				•	•		
Compose and decompose shapes	•	•	•	•			
Congruency						•	
Equal parts		•	•				
Identify and describe shapes	•	•	•	•			
Identify shapes in the environment	•						
Intersecting lines							•
Line symmetry					•		
Lines				•	•		
Model and draw shapes	•	•	•	•			
Partition shapes		•	•	•			
Sort shapes	•	•	•				
Translations, reflections, rotations					•		
Triangles			•	•	•		
<b>Volume</b>							
Formula for volume							•
Fractional side lengths and volume							•
Rectangular prism							•
Use cubes to find volume							•

## Statistics and Probability

### Display Data

Box plot							•
Dot plot							•

• Investigate and Analyze ♦ Apply and Extend

	K	1	2	3	4	5	6
Frequency table							•
Histogram							•
<b>Probability</b>							
Calculate experimental probability							•
Determine probability							•
Likelihood							•
Probability experiments							•
Represent probability							•
Sample space							•
<b>Statistical Questions</b>							
Describe data collections							•
Distribution of data							•
Measure of center							•
Measure of variation							•
Recognize statistical questions							•
<b>Summarize Data</b>							
Box plot							•
Describe data collections							•
Describe distributions							•
Dot plot							•
Effects of outliers							•
Frequency table							•
Histogram							•
Interpret data displays							•
Mean as fair share and balance point							•
Measures of variability							•

## NOTES



## NOTES

# math expressions

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