

Scope and Sequence for *Primary Mathematics*

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S: Standards edition, *Earlybird Kindergarten* or *Primary Mathematics*

U: U.S. edition, *Primary Mathematics*

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Whole Numbers														
Understand and use ordinal numbers to describe position.			S U											
Count objects in a set, read and write numerals to 10.	S		S U											
Compare two or more sets of objects up to 10 and identify which set is equal to, more than, or less than the other.	S		S U											
Compare two sets of objects up to 10 and determine how many more or less are in one set than the other.		S	S U											
Count and identify 1 more than or 1 less than a number within 10.	S		S U											
Use place-value models to represent numbers to 30.		S												
Count objects in a set, read, and write numerals to 30.		S												
Count and identify 1 more than or 1 less than a number within 30.		S	S U											
Understand number order and know that larger numbers describe sets with more objects in them than smaller numbers.	S	S	S U											
Count, read, and write whole numbers to 20.			S U											
Compare numbers within 20.			S U	S U										
Use place-value models to represent numbers to 100.		S		S U										
Read, write in words, standard, and expanded notation, identify place values of digits for numbers within 100.				S U										
Count and identify 1 more than, 1 less than, 10 more than, 10 less than a number within 100.				S U										
Compare numbers within 100 and use the symbols $<$, $+$, $>$.				S	U									
Make reasonable estimates when comparing numbers and sets of objects within 100.				S										
Describe and extend regular number patterns within 100, including counting by 2's and 20's.				S U										
Use place-value models to represent numbers to 1000.					S U									
Read, write in words, standard, and expanded notation, identify place values of digits, and compare and order numbers within 1000.					S U									
Describe and extend regular number patterns within 1000.					S U									

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Compare numbers within 1000 and use the symbols $<$, $+$, $>$.					S	U								
Use place-value models to represent numbers to 10,000.							S	U						
Read, write in words, standard, and expanded notation, identify place values of digits, and compare and order numbers within 10,000.							S	U						
Count on and back in steps of 1, 10, 100, and 1000 and complete or extend regular number patterns within 10,000.							S	U						
Round numbers within 100,000 to the nearest 10 or 100							S		U					
Round numbers within 10,000 to the nearest 10, 100, or 1000.							S			U				
Use place-value models to represent numbers to 100,000.									S	U				
Read, write in words, standard, and expanded notation, identify place values of digits, and compare and order numbers within 100,000.									S	U				
Complete or extend regular number patterns for numbers within 100,000.									S	U				
Use place-value models to represent numbers to 1,000,000.									S		U			
Use place-value models to represent numbers to 1,000,000,000.									S					
Read, write in words, standard, and expanded notation, identify place values of digits, and compare and order numbers within 1,000,000,000.									S					
Complete or extend regular number patterns for numbers within 1,000,000,000.									S					
Round numbers within 1,000,000,000 to the nearest 10, 100 or 1000									S					
Read, write in words, standard, and expanded notation, identify place values of digits, and round numbers in the billions.											S			
Round large numbers to the nearest 10, 100, 1000, 10,000, or 100,000.											S			
Addition and Subtraction of Whole Numbers														
Understand number bonds and part-whole concept.		S	S	U										
Understand the meaning of addition (missing whole, putting together, counting on, simple addition stories).		S	S	U	S	U								
Understand the meaning of subtraction (missing part, taking away, counting back, simple subtraction stories).		S	S	U	S	U								

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Use concrete objects to determine the answer to addition and subtraction problems for two numbers within 10.		S												
Recognize when an estimate is reasonable.		S												
Add/Subtract numbers within 20.			S	U										
Use inverse relationship between addition and subtraction.			S	U	S	U	S	U						
Learn addition and subtraction facts within 20.			S	U										
Compare numbers by using subtraction to find the difference.				S	U	S	U							
Add/Subtract numbers within 100.				S	U									
Count by 2's, and 5's within 100.		S												
Count by 10's within 100.		S	S	U										
Find the sum of three 1-digit numbers.				S	U									
Add/Subtract numbers within 1000.					S	U								
Add/Subtract numbers within 10,000.							S	U	S	U				
Use estimation to verify the reasonableness of calculated results in addition and subtraction, check subtraction problems using addition.							S		S	U	S	U		
Determine whether an estimate is sufficient for a specific problem situation.									S	U				
Add/subtract numbers in the billions.											S			
Multiplication and Division of Whole Numbers														
Use repeated addition and arrays to solve multiplication problems within 40.				S	U	S	U							
Use sharing and grouping to divide.				S	U	S	U							
Relate division to multiplication.					S	U	S	U	S	U	S	U		
Recognize and extend regular linear patterns.				S	U	S	U	S	U	S	U	S	U	
Multiply/divide by 2's and 3's.					S	U								
Learn multiplication/division facts for 2's and 3's.					S	U								
Multiply/divide by 4's, 5's, and 10's.							S	U						
Learn multiplication/division facts for 4's, 5's, and 10's.							S	U						
Use repeated subtraction to divide and find the remainder.							S							
Understand quotient and remainder.								S	U					
Understand the properties of 0 and 1 in multiplication and division.								S	U					
Multiply/Divide by 6's, 7's, 8's, and 9's.								S	U					
Learn multiplication/division facts for 6's, 7's, 8's, and 9's.								S	U					
Multiply numbers within 1000 by a 1-digit number.								S	U					

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Multiply numbers within 10,000 by a 1-digit number.							S		S U					
Divide numbers within 1000 by a 1-digit number, including situations where there is a remainder.							S U							
Divide numbers within 10,000 by a 1-digit number, including situations where there is a remainder.							S		S U					
Multiply numbers within 10,000 by a 2-digit number.									S U		S U			
Divide numbers within 10,000 by a 2-digit number.											S U			
Multiply/divide numbers within 1,000,000 by tens, hundreds, or thousands.											S			
Use estimation to verify the reasonableness of calculated results in multiplication and division problems.							S		S U		S U			
Check division problems using multiplication.							S		S		S			
Find the factors and common factors of whole numbers within 100.									S U		S U			
Find the greatest common factor of up to 3 numbers within 100.											S			
Identify prime numbers.									S		S			
Determine the prime factors of numbers within 100 and write the numbers as products of prime numbers, using exponents.											S			
Find multiples and common multiples of whole numbers within 100.									S U		S U			
Find the lowest common multiple of up to 3 numbers within 100.											S			
Use divisibility rules for 2, 3, 5, 6, 9, and 10.									S U		S			
Use order of operations to solve mathematical expressions with or without parentheses.									S		S U			
Understand the distributive property.											S			
Mental Math Strategies														
Use the commutative and associative properties to perform mental calculations and check results.			S U	S U	S U	S U	S U		S U		S U			
Use the distributive property to perform mental calculations and check results.							S U		S U		S U			
Add 1-digit numbers involving renaming (e.g. $7 + 5$) by making a ten.			S U											
Subtract 1-digit numbers involving renaming (e.g. $14 - 8$) by subtracting from a ten.			S U											
Add/Subtract numbers within 100.				S U	S U	S U	S U							
Add/Subtract 1's, 10's, or 100's to numbers within 1000.					S U	S U	S U	S U						
Subtract from 100.						S U								
Subtract from 1000.								S U	S					

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Add/Subtract a number close to 100 (e.g. 98).						S U	S							
Add/subtract a number close to 1000 (e.g. 998).									S					
Add/subtract a number close to a multiple of 100 (e.g. 498).											S			
Add and subtract money in compound units (dollars and cents) when the cents are multiples of 5 or close to \$1.00.						S U	U	S						
Add/Subtract measurements in compound units.								S U						
Add/Subtract tenths, hundredths, or thousandths to or from decimal numbers.										S U				
Multiply and divide tens, hundreds, and thousands by a 1-digit number.							S U							
Multiply by 99 or by 25.									S		S			
Multiply 10's by 10's or 100's.									S U					
Multiply by a number one less than a multiple of 10 or 100 (e.g. 49, 499).											S			
Fractions														
Recognize and name halves and fourths.				S U		S U								
Recognize, write, name, and illustrate fractions of a whole (denominators 1-12).						S U								
Find the fraction with the same denominator to make a whole with another fraction.						S U								
Compare and order unit fractions.						S U								
Compare and order fractions with the same denominator or with the same numerator.								S U						
Find equivalent fractions and simplest form of a fraction.								S U	S					
Compare and order fractions with different denominators.								S U	S		S			
Recognize and name the fraction of a set.						S		S U						
Find the value given the fraction of a set, using objects or drawings.						S		S U						
Find the fraction of a set where the answer is a whole number.								S U	S U					
Find the fraction of a set where the answer is a mixed number.									U		S			
Find coin amounts as a fraction of a dollar.								S						
Find fraction of a set for measurements (e.g. 10 minutes as a fraction of one hour).									S U		S U			
Add/Subtract like fractions.								S	U					
Add/Subtract related fractions.									S U					
Add/Subtract unlike fractions.											S U			

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Understand mixed numbers and improper fractions, convert between them, locate them on a number line.									S U					
Relate division to fractions.									S		S U			
Add/subtract mixed numbers.											S U			
Multiply a fraction by a whole number.									S U		S U			
Multiply a fraction by a fraction.											S U			
Divide a fraction by a whole number.											S U			U
Divide a whole number or a fraction by a fraction.											S			U
Apply order of operations with or without parentheses to problems involving fractions.														U
Money														
Identify and know the value of coins and use the cent symbol.		S U		S U										
Identify and know the value of bills and use the dollar symbol.				S U										
Count combinations of coins.		S U		S U										
Count combinations of bills.				S U										
Count combinations of bills and coins to \$10.00.						S U								
Use decimal notation for money.						S U								
Use decimal notation to add and subtract money within \$10.00.						S U								
Use decimal notation to add and subtract money within \$100.00.								U S						
Multiply and divide money amounts in decimal notation.								S						
Decimals														
Understand tenths, hundredths, thousandths, locate decimal numbers on a number line, compare decimal numbers.										S U		S U		
Convert a decimal to a fraction and simplify.										S U		S U		
Convert a fraction to a decimal number (denominators are a factor of 10, 100, or 1000).										S U		S U		
Compare and order decimal numbers of up to 3 decimal places and fractions.										S U		S U		
Round decimal numbers of up to 2 decimal places to the nearest whole number or to 1-decimal place.										S U				
Round decimal numbers up to 3 decimal places to the nearest whole number, to 1-decimal place, or to 2-decimal places.												S U		
Add/Subtract decimal numbers of up to 2 decimal places.										S U				
Add/Subtract decimal numbers of up to 3 decimal places.												S U		

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Multiply/Divide decimal numbers of up to 2 decimal places by a whole number.										S U		S U		
Find the quotient of a division problem correct to 1 decimal place.										S U				
Find the quotient of a division problem correct to 2-decimal places.												S U		
Convert fractions to decimals correct to 2-decimal places.												S U		
Multiply/Divide decimal number by tens, hundreds, or thousands.												S U		
Multiply/divide a decimal number by a 2-digit whole number.												S U		
Multiply/divide a whole number or a decimal by a decimal.												S		
Use estimation to verify the reasonableness of calculated results in problems involving decimal numbers.										S U		S U		
Time														
Understand sequence of events.		S												
Demonstrate an understanding of the concept of time (morning, afternoon, evening, today, yesterday, tomorrow, week, year).		S												
Name the days of the week.		S												
Understand the calendar as a tool for measuring time.		S												
Tell time to the hour (analog clock face).		S												
Relate time to events.		S		S U										
Tell time to the half-hour (analog clock face).				S U										
Tell time to the nearest 5-minute mark (analog clock face).						S U								
Tell time to the minute (analog clock face).								S U						
Estimate reasonable time intervals.						S								
Find the duration of time intervals.						S U		S U						
Find starting or ending times, given a time and the interval.						S U		S U						
Know relationships of time (years, months, days, weeks, hours, seconds).						S U		S U						
Convert between of units of time.								S U		S U	S U	S U		
Length, Weight, Mass, and Capacity														
Compare and measure length and weight by making direct comparisons with reference objects.	S		S U											
Compare and measure capacity by making direct comparisons with reference objects.	S		S											

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Compare and measure length, and weight using nonstandard units.	S		S U		S									
Compare and measure capacity using nonstandard units.	S		S		S U									
Measure and estimate length of objects in meters and centimeters, yards, feet, and inches.					S U			S U						
Understand and estimate length in kilometers and miles.								S U						
Compare measurements made using different units.					S U									
Measure and estimate weight in kilograms, grams, pounds, and ounces.					S U			S U						
Measure and estimate capacity in liters, cups, pints, quarts, half-gallon, and gallon.						S U		S U						
Measure and estimate capacity in milliliters.								S U						
Convert units within a metric system using multiplication.								S U			S U			
Add/subtract measurements in compound units.								S U		S				
Multiply/divide measurements in compound units.										S U				
Convert fractional measurements to a different unit or a compound unit, within a measuring system.											S U			
Convert units involving decimals within a measuring system.												S U		
Perimeter, Area, and Volume														
Find the perimeter of polygons.								S U						
Find the area of shapes by covering them with unit squares or by counting squares.						U		S U	S U		S			
Understand and use units of area, such as square centimeter and square inch.								S U	S U		S			
Find the area, perimeter, and unknown sides of rectangles.									S U		S			
Find the area and perimeter of composite figures made from squares and rectangles.									S U		S			
Derive the formula for area of a triangle and find the area of triangles.											S U			
Derive the formula for area of a parallelogram and find the area of parallelograms.											S			
Find the surface area of cubes and rectangular prisms.											S			
Count unit cubes in 2-dimensional representations of 3-dimensional solids.								S		U				
Find the volume of solid figures by counting cubic units.								S		S U				
Understand and use units of volume, such as cubic centimeter and cubic inch.										S U		S U		
Find the volume of rectangular prisms.										S U		S U		

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Find the side of a rectangular prism given the volume and two sides or area of one side.												S U		
Understand the relationship between cubic centimeters, milliliters, and liters.										S U		S U		
Solve problems involving the change in height of liquids and volume of liquids in rectangular tanks, including rate problems.												S U		
Find the volume of solids by displacement.												S U		
Solve multistep problems involving the volume of liquids and solids.														U
Identify the radius and diameter of a circle, find one given the other.									S					U
Derive the formula for circumference of a circle and find circumference when given the radius or diameter.														U
Derive the formula for area of a circle and find area when given the radius or diameter.														U
Find the perimeter and area of compound figures involving squares, rectangles, triangles, and half-circles or quarter circles.														U
Geometry														
Give and follow directions about location.			S											
Arrange and describe objects in space by proximity, position, and direction.			S											
Identify, describe, and categorize common 2-dimensional and 3-dimensional objects.	S													
Identify, describe, and categorize common 2-dimensional shapes, including the faces of 3-dimensional objects.	S		S U		S U									
Identify common 2-dimensional shapes within compound shapes, combine shapes to form common shapes.			S U		S U									
Describe and classify common 3-dimensional shapes according to number and shape of faces, edges, and vertices.	S				S U		S	S					U	
Describe and extend repeating patterns involving objects, colors, or shapes.	S													
Describe and extend repeating patterns involving color and shapes.			S U		S U									
Describe and extend repeating patterns involving combination of shapes (compound shapes).					S U									
Identify common 3-dimensional shapes within compound shapes.							S U							
Identify intersecting and parallel lines.							S							

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Identify and describe polygons.								S						
Identify attributes of triangles and quadrilaterals.								S	S	U		SU		
Identify right angles and compare angles to right angles.								SU						
Identify acute, obtuse, and right angles and relate 90° , 180° , 270° , and 360° with quarter, half, three-quarter, and whole turn.									SU					
Measure and construct angles.									SU			SU		
Identify perpendicular and parallel lines.									SU					
Name different types of triangles and quadrilaterals.									S	U				
Find the lengths of unknown sides given the length of other sides or the perimeter of triangles and quadrilaterals.									S					
Know and use angle properties of intersecting lines, triangles, parallelograms, rhombuses, and trapezoids to solve problems involving finding unknown angles.												SU		U
Construct triangles, parallelograms, and rhombuses with specified angles.												SU		
Visualize, describe, and draw geometric solids.									S		S			U
Identify nets of solids, or solids of nets.									S					U
Identify congruent figures									S					
Create tessellations.									S			U		
Identify figures that have line symmetry.										SU				
Identify figures that have rotational symmetry.										S				
Understand the coordinate grid, locate points, and write ordered pairs (first quadrant).										S		S		
Understand the coordinate grid, locate points, write ordered pairs (all four quadrants).												S		
Find the length of horizontal and vertical lines on the coordinate grid.										S				
Data Analysis and Probability														
Identify, sort, and classify objects by common attributes (e.g. appearance, size, shape, color, pattern, function).	S	S												
Identify objects that do not belong to a particular group.	S													
Sort objects and data by common attributes.			SU	SU										
Collect, organize, and represent data using objects, pictures, picture graphs, and bar graphs (within 10).	S													
Represent and compare data using picture graphs				SU		S								
Represent and compare data bar graphs.				S		S	U		U					
Represent and compare data using tally charts.				S		S								

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Collect, organize, and analyze data using tables and bar graphs.						S	S		U	S				
Collect, organize, and analyze data using tally charts.						S	S			S				
Ask and solve questions related to data representation, including finding the range and mode.						S	U	S	U	S		S	U	
Collect, organize, and analyze data using line plots.							S			S		S		
Collect, organize, and analyze data using line graphs.										S		S	U	
Collect, organize, and analyze data using coordinate graphs										S		S		
Collect, organize and display data in pie charts.												S		U
Collect, organize and display data in histograms.												S		
Identify the mode and median of categorical data.										S				
Understand, find, and compare mean, median, and mode.												S		
Identify ordered pairs of data from a graph.										S		S		
Identify whether common events are certain, likely, unlikely, or impossible.							S							
Record the possible outcomes for a simple event and systematically keep track of the outcome when it is repeated many times.							S							
Summarize and display results of simple probability experiments, use the results to predict future events.							S							
Represent possible outcomes for simple probability experiments.									S					
Express all possible outcome of experimental probability situations verbally and numerically and as fractions.									S					
Percentage														
Understand and use percent.												S	U	
Find decimal and fraction equivalents for percentages.												S	U	
Write fractions as percentages.												S	U	
Solve problems involving percentage of a quantity.												S	U	U
Solve problems involving part of a whole as a percentage.														U
Solve problems involving one quantity as a percentage of another.														U
Solve percentage problems using a unitary method.														U
Ratio/Average/Rate/Speed														
Understand and use ratios to solve problems.												S	U	
Find equivalent ratios.												S	U	
Find the average of a set of data.													S	U

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Find a data value given the average and the other values.												S U		
Understand rates and solve problems involving rates.												S U		
Relate ratios to fractions.													U	
Relate ratios to proportions.													U	
Solve problems involving changing ratios.													U	
Understand and use speed and average speed to solve problems.													U	
Word Problems														
Make addition/subtraction stories from problem situations.			S U											
Write equations and solve simple addition/subtraction stories.			S U	S U										
Solve simple multiplication/division problems using objects and pictures.				S U										
Write equations and solve one-step word problems involving addition/subtraction.				S U	S U	S U								
Write equations and solve one-step word problems involving multiplication/division.					S U	S U								
Solve simple word problems involving fraction of a set.						S U								
Solve 2-step word problems which involve the four operations on whole numbers.							S U		S U					
Solve 2-step word problems which involve fraction of a set.									S U					
Solve 2-step word problems which involve decimals and fractions.										S U				
Solve multi-step word problems involving all four operations on whole numbers, fractions, decimals, percentage, ratios.											S U	S U	U	U
Solve multi-step word problems involving average, rate, and percentage.												S U	U	U
Solve multi-step word problems involving speed and average speed.													U	U
Solve challenging word problems.														U
Algebra														
Solve problems involving numeric equations or inequalities.		S	S U	S U	S U		S U							
Select appropriate operational symbol to make an expression true.			S U	S U	S U		S U							
Use boxes and other symbols to stand for unknown numbers in expressions and equations.			S U	S U	S U	S U	S U	S U	S U	S U				

	KA	KB	1A	1B	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B
Use letters to stand for unknown numbers in equations and solve for the unknown numbers using properties of the four operations.									S		S			
Represent unknown quantities with bar diagrams and solve word problems using bar diagrams.							S	U	S	U	S	U		
Use bar diagrams to solve complex word problems involving whole numbers and fractions.									S	U	S	U	S	U
Use bar diagrams to solve complex word problems.										S	U	S	U	S
Solve word problems involving the functional relationship between two quantities.							S	S	S	S	S	S		
Use and interpret formulas to answer questions about quantities and their relationships.									S		S			
Write simple equations involving related changes in quantities (e.g. $y = 3x + 5$) and solve for the dependent value when given the independent value.										S		S		
Write and evaluate simple algebraic expressions in one variable using substitution.												S	U	
Use the distributive property in expressions with variables.												S		
Simplify algebraic expressions in one variable.												S	U	
Solve problems involving simple linear functions with whole numbers values, write the equation, and graph the resulting ordered pairs on a grid.										S				
Understand and interpret negative numbers, locate negative numbers on a number line, compare and order integers.									S			S		
Recognize and extend regular number patterns that include negative numbers.									S					
Find the numerical value of negative numbers.												S		
Add and subtract positive and negative integers.												S		
Solve problems involving linear functions with integer values, write the equation, and graph the resulting ordered pairs on a grid.												S		