marshall cavendish education

PRIMARY MATHEMATICS

Scope and Sequence

Grades K – 6

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS			
Sets and Numbers	Use concrete models and pictures to create sets with given numbers of objects to 20. [**Chapters 1, 2, 3, 6, and 7**]	Use concrete and pictorial models to create a set with a given number of objects. (Up to 120) [**Chapters 1, 4, and 8**] Group objects and numbers up to 120 in tens and ones. [**Chapters 1, 4, and 8**] Use cardinal numbers up to 120. [**Chapters 1, 4, and 8**]	Use concrete and pictorial models to create a set with a given number of objects. (Up to 1,000) [**Chapter 1**] Group objects and numbers up to 1,000 into hundreds, tens, and ones. [**Chapter 1**] Group objects into equal sized groups. [**Chapter 6**]
Number Representation	Use numbers to represent quantities to 20. [**Chapters 1, 2, 3, 6, and 7**]. Write numerals to represent numbers 0 to 20. [**Chapters 2, 3, 5, 6, and 7**]	Use number bonds to represent number combinations. [**Chapters 1, 2, 3, and 5**]	Use base-ten blocks to create equivalent representations of numbers. [**Chapter 1**]

	Grade 3	Grade 4	Grade 5	Grade 6
NUMBER AND OPERATIONS				
Sets and Numbers	Use concrete and pictorial models to create a set with a given number of objects. (Up to 10,000) [**Chapter 1**] Group objects and numbers up to 10,000 into thousands, hundreds, tens, and ones. [**Chapter 1**] Group objects into equal sized groups. [**Chapters 3 and 4**]	Use concrete and pictorial models to create a set with a given number of objects. (Up to 1,000,000) [**Chapter 1**] Group objects and numbers up to 1,000,000 into hundred thousands, ten thousands, thousands, hundreds, tens, and ones. [**Chapter 1**]	Group objects and numbers up to 10 million into millions, hundred thousands, ten thousands, thousands, hundreds, tens, and ones. [**Chapter 1**]	Understand that positive and negative numbers can be used to describe quantities having opposite directions or values. **[Chapter 3]** Use positive and negative numbers to represent quantities in real-world contexts. **[Chapter 3]** Understand rational numbers as points on the number line. **[Chapter 3]** Extend number lines to represent points with negative coordinates; locate negative integers on a horizontal or vertical number line. **[Chapters 3, 10]** Use negative numbers to identify and locate points in all four quadrants of the coordinate plane. **[Chapter 10]** Understand that the absolute value of a number is its distance from 0 on the number line. **[Chapter 3]** Interpret the absolute value of a rational number as magnitude for a positive or negative quantity in a given context. **[Chapter 3]**
Number Representation	Represent numbers to 10,000 in different equivalent forms (base-ten, number discs, bar models). [**Chapters 1, 2, and 4**]	Represent numbers to 1,000,000 in various contexts. [**Chapter 1**]	Express numbers to 10 million in various forms. [**Chapter 1**] Use exponents to denote powers of 10. [**Chapter 1**]	Represent fractions, decimals and integers on a number line. **[Chapter 3]** Relate the square of a whole number to the area of a square, and the cube of a number to the volume of a cube. **[Chapter 1]** Find the square or cube of a number. **[Chapter 1]**

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	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS			
Count	Explore count sequence and number names to 100. [**Chapters 1, 2, 3, 7, and 12**] Count on and back from a given number. [**Chapters 2, 3, 7, and 12**] Realize that, when counting, the last number named tells how many. [**Chapters 1, 2, 3, 7, and 12**] While counting objects, say one number name per item. [**Chapters 1, 2, 3, 7, and 12**] Count numbers of items in sets from different starting points; count sets accurately regardless of arrangements of objects. [**Chapters 1, 2, 3, 7, and 12**] Relate each successive number name to a quantity that is one greater. [**Chapters 2, 3, 7, and 12**] Count up to 20 objects in a set. [**Chapters 1, 2, 3, and 7**] Count on to and back from 20. [**Chapter 7**] Count by tens to 100. [**Chapter 12**]	Count within 120. [**Chapters 1, 4, and 8**] Count by 1s and 10s forward and backward to 100. [**Chapters 1, 4, and 8**]	Count within 1,000. [**Chapter 1**] Count by multiples of ones, tens, and hundreds. [**Chapter 1**]
Compare and Order	Compare and order sets and numbers up to 20 using counting and matching strategies. [**Chapter 5**]	Compare and order whole numbers to 100. [**Chapters 1, 3, 4, 5, 6, and 8**] Compare and order using the terms same, more, fewer, greater than, less than, equal to, greatest, and least. [**Chapters 1, 3, 4, 5, 6, 8, 9, and 10**]	Compare and order whole numbers to 1,000. [**Chapter 1**] Use <, >, and = to compare two 2-digit numbers. [**Chapter 1**]
Compose and Decompose Numbers	Compose and decompose numbers less than or equal to 10 into pairs in more than one way. [**Chapter 6**] Compose and decompose numbers less than or equal to 20 into pairs in more than one way. [**Chapters 6 and 7**] Compose and decompose numbers from 11 to 19 into 10 ones and some further ones and 20 as 2 tens. [**Chapter 7**]	Make groups of 10 and count on to tell the number. [**Chapters 1, 4, and 8**] Use number bonds to add and subtract. [**Chapters 2, 3, 5, and 9**]	Write multi-digit numbers in expanded form. [**Chapter 1**]

	Grade 3	Grade 4	Grade 5	Grade 6
NUMBER AND OPERATIONS				
Count	Count within 10,000. [**Chapter 1**] Count by thousands, hundreds, tens, and ones. [**Chapter 1**]	Count within 1,000,000. [**Chapter 1**] Count by hundred thousands, ten thousands, thousands, hundreds, tens, and ones. [**Chapter 1**]	Count by millions and thousands. [**Chapter 1**]	
Compare and Order	Compare and order whole numbers to 10,000. [**Chapter 1**]	Compare and order whole numbers to 1,000,000. [**Chapter 1**]	Compare and order whole numbers to 10 million. [**Chapter 1**]	Write, interpret, and explain statements of order for fractions and integers. **[Chapter 3]** Interpret statements of inequality as statements about the relative position of two numbers on a number line. **[Chapter 3]** Distinguish comparisons of absolute value. **[Chapter 3]**
Compose and Decompose Numbers	Write multi-digit numbers in expanded form. [**Chapter 1**]	Write multi-digit numbers in expanded form. [**Chapter 1**]	Write multi-digit numbers in expanded form. [**Chapter 1**]	

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS (CONTINUED)			
Place Value	Compose and decompose numbers from 11 to 19 into ten ones and some further ones and 20 as 2 tens. [**Chapter 7**] Explore numbers 21 to 100 as tens and ones. [**Chapter 12**]	Use base-ten blocks and place-value charts to represent numbers to 120. [**Chapters 1, 2, 3, 4, 5, 8, and 9**] Write numbers to 120 in standard and word forms. [**Chapters 1, 4, and 8**]	Use place-value models to represent numbers to 1,000. [**Chapter 1**] Write numbers to 1,000 in standard, expanded, and word forms. [**Chapter 1**]
Fraction Concepts		Partition shapes into two to four equal shares. [**Chapter 11**] Describe the shares using the terms halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. [**Chapter 11**] Understand that dividing a shape into more equal shares makes smaller shares. [**Chapter 11**]	Partition circles and rectangles into unit fractions halves, thirds, and fourths. [**Chapter 9**]
Money		Identify and relate coin values (penny, nickel, dime, quarter). [**Chapter 8**] Count and make simple coin combinations. [**Chapter 8**]	Identify $1, $5, $10, $20, and $100 bills. [**Chapter 1**] Count and make combinations of coins and bills. [**Chapter 1**] Compare money amounts. [**Chapter 1**] Solve word problems involving money, using $ and ¢ appropriately. [**Chapter 1**]
Decimal Concepts			Use the dollar sign and decimal point. [**Chapter 1**]

NUMBER AND OPERATIONS (CONTINUED)

	Grade 3	Grade 4	Grade 5	Grade 6
Place Value	Use place-value models to read, write, and represent numbers to 10,000. [**Chapter 1**] Write numbers to 10,000 in standard, expanded, and word forms. [**Chapter 1**]	Use place-value models to read, write, and represent numbers to 1,000,000. [**Chapter 1**] Write numbers to 1,000,000 in standard, expanded, and word forms. [**Chapter 1**]	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to the right and $\frac{1}{10}$ of what it represents in the place to its left for whole numbers to 10 million. [**Chapter 1**]	
Fraction Concepts	Understand the meanings and uses of fractions including fraction as part of a set. [**Chapter 7**] Understand that the size of a fractional part is relative to the size of the whole. [**Chapter 7**] Compare and order fractions using models, and number lines. [**Chapter 7**] Recognize equivalent fractions through the use of models and number lines. [**Chapter 7**] Write whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. [**Chapter 7**] Find a fraction of a set. [**Chapter 7**]	Recognize, write, name, and illustrate mixed numbers and improper fractions in various forms. [**Chapter 6**] Generate equivalent fractions. [**Chapter 6**] Compare nonequivalent fractions by creating common denominators or numerators, or by comparing with benchmark fractions. Use <, >, and = symbols. [**Chapter 5**] Convert among mixed numbers and improper fractions. [**Chapter 6**]	Understand how to convert fractions to decimals. [**Chapter 4**] Understand the relationships between fractions and division expressions. [**Chapter 4**]	
Money	Add and subtract money. [**Chapter 2**] Solve real-world problems involving addition and subtraction of money. [**Chapter 2**]			
Decimal Concepts		Model decimals using tenths and hundredths. Understand decimal notation through hundredths as an extension of the base-ten system. [**Chapter 7**] Read and write decimals that are greater than or less than 1. [**Chapter 7**] Compare and order decimals. [**Chapter 7**] Identify equivalent fractions and decimals. [**Chapter 7**] Use the dollar sign and decimal point in money amounts. [**Chapter 7**]	Model decimals using thousandths. [**Chapter 6**] Understand place value concepts through thousandths. [**Chapter 6**] Understand how to convert decimals to fractions. [**Chapter 6**]	

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS (CONTINUED)			
Whole Number Computation: Addition and Subtraction	Model joining and separating sets. [**Chapters 9, 10, and 11**] Use +, −, and = to write number sentences for addition and subtraction stories. [**Chapters 9, 10, and 11**]	Model addition and subtraction situations. [**Chapters 2, 3, 5, 6, and 9**] Add and subtract within 20, using appropriate models, numbers, and symbols. [**Chapters 2, 3, 5, and 6**] Understand the meaning of the equal sign; decide if number sentences involving addition and subtraction are true or false. [**Chapters 2, 3, 5, 6, and 9**] Use the order, grouping, and zero properties to develop addition and subtraction fact strategies. [**Chapters 2, 3, 5, 6, and 9**] Add and subtract up to two 2-digit numbers with and without regrouping. [**Chapters 5, 6, and 9**]	Model addition and subtraction within 1,000 using place-value strategies. [**Chapters 2 and 3**] Recall addition and subtraction facts. [**Chapters 2 and 3**] Use different methods to develop fluency in adding and subtracting multi-digit numbers. [**Chapters 2 and 3**] Add and subtract whole numbers to 1,000. [**Chapters 2 and 3**]
Whole Number Computation: Addition and Subtraction Real-World Problems	Represent and solve addition and subtraction stories with manipulatives, actions, drawings, and number sentences. [**Chapters 9, 10, and 11**]	Create addition and subtraction stories. [**Chapters 2, 3, 5, 6, and 9**] Solve addition and subtraction problems using basic facts. [**Chapters 2, 3, 5, 6, and 9**]	Solve multi-digit addition and subtraction problems by using a bar model. [**Chapter 4**]
Develop Fluency with Addition and Subtraction to 5 or 10	Practice addition and subtraction in different contexts with words, models, fingers, and numerals. [**Chapters 9, 10, and 11**]	Practice addition and subtraction within 10. [**Chapters 2 and 3**]	
Whole Number Computation: Multiplication and Division Concepts		Add the same number to find the total number of items in equal groups. [**Chapter 8**]	Represent multiplication as repeated addition. [**Chapter 6**] Use × and = symbols to represent multiplication equations. [**Chapter 6**]

	Grade 3	Grade 4	Grade 5	Grade 6
NUMBER AND OPERATIONS (CONTINUED)				
Whole Number Computation: Addition and Subtraction	Model regrouping in addition and subtraction using place-value strategies. [**Chapter 2**] Add and subtract whole numbers to 10,000. [**Chapter 2**]	Model regrouping in addition and subtraction using place-value strategies. [**Chapter 2**] Fluently add and subtract multi-digit whole numbers using the standard algorithm. [**Chapter 2**]	Model order of operations with whole numbers. [**Chapter 2**]	
Whole Number Computation: Addition and Subtraction Real-World Problems	Solve addition and subtraction problems with greater numbers by using a bar model. [**Chapter 2**]	Solve addition and subtraction problems with greater numbers by using a bar model. [**Chapter 2**]	Solve problems using order of operations. [**Chapter 2**]	
Develop Fluency with Addition and Subtraction to 5 or 10				
Whole Number Computation: Multiplication and Division Concepts	Multiply and divide up to 2-digit numbers by any number from 2 to 10. [**Chapters 3 and 4**] Represent multiplication in different ways (repeated addition, arrays, and area models). [**Chapters 3 and 4**] Model division in different ways (repeated subtraction, sharing, grouping). [**Chapters 3 and 4**] Recall related multiplication facts in division. [**Chapters 3 and 4**] Use the ×, ÷, and = symbols to represent multiplication and division equations. [**Chapters 3 and 4**]	Illustrate and explain multiplication and division by using equations, rectangular arrays, and/or area models. [**Chapter 3**] Understand factors and multiples. [**Chapter 3**]	Model order of operations with whole numbers. [**Chapter 2**]	

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS (CONTINUED)			
Whole Number Computation: Multiplication and Division Algorithms			
Whole Number Computation: Multiplication and Division Real-World Problems			Solve multiplication word problems. [**Chapter 6**]
Fraction Computation			

	Grade 3	Grade 4	Grade 5	Grade 6
NUMBER AND OPERATIONS (CONTINUED)				
Whole Number Computation: Multiplication and Division Algorithms	Multiply 2-digit numbers by a 1-digit number, with and without renaming. [**Chapter 4**] Apply properties of addition and multiplication to multiply (partial products). [**Chapter 4**]	Develop fluency in multiplying multi-digit numbers. [**Chapter 3**] Multiply a 4-digit whole number by a 1-digit whole number, and multiply two 2-digit numbers using strategies based on place value. [**Chapter 3**] Divide a 4-digit number by a 1-digit number, with and without a remainder. [**Chapters 3 and 4**]	Multiply multi-digit numbers. [**Chapter 2**] Find quotients involving multi-digit dividends. [**Chapter 2**]	
Whole Number Computation: Multiplication and Division Real-World Problems	Use bar models to represent multiplication and division situations. [**Chapters 3 and 4**] Solve one- and two-step multiplication and division problems. [**Chapters 3 and 4**]	Multiply or divide to solve word problems involving multiplicative comparison by using drawings and equations with a symbol for the unknown number to represent the problem. [**Chapters 3 and 4**] Solve multi-digit multiplication and division problems. [**Chapters 3 and 4**] Solve division problems that involve interpreting the remainder. [**Chapters 3 and 4**] Apply understanding of models for multiplication and division. [**Chapters 3 and 4**]	Compare the size of a product to one factor without multiplication. [**Chapter 2**] Solve multiplication and division problems. [**Chapter 2**] Determine the most useful form of the quotient and interpret the remainder. [**Chapter 2**]	
Fraction Computation	Express a fraction as the sum of repeated unit fractions. [**Chapter 7**] Express a whole as the sum of two like fractions. [**Chapter 7**]	Add and subtract like fractions. [**Chapter 3**] Solve word problems involving multiplication of a fraction by a whole number. [**Chapter 3**]	Add and subtract unlike fractions and mixed numbers. [**Chapter 3**] Multiply proper fractions, improper fractions, mixed numbers, and whole numbers. [**Chapter 4**] Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. [**Chapter 3**] Divide fractions by whole numbers. [**Chapter 4**] Divide a whole number by a unit fraction. [**Chapter 4**] Solve word problems with addition, subtraction, multiplication, and division of fractions. [**Chapters 3 and 4**]	Interpret and compute quotients of fractions. **[Chapter 2]** Represent situations involving multiplication and division of fractions using models, such as bar models and area models. **[Chapters 2, 4, 5, 6, 8, 9, 11, 12]** Solve real-world problems involving division of fractions by fractions. **[Chapter 2]**

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
NUMBER AND OPERATIONS (CONTINUED)			
Decimal Computation			Solve addition and subtraction word problems involving money. [**Chapter 1**]
Estimation and Mental Math		Use mental math strategies to add and subtract. [**Chapters 2, 3, and 5**]	Use mental math strategies to add and subtract. [**Chapters 2 and 3**]
ALGEBRA / EXPRESSIONS AND EQUATIONS			
Patterns	Describe and extend repeating shape patterns. [**Chapter 4**] Find missing terms in repeating patterns. [**Chapter 12**] Count by 10s. [**Chapter 12**]	Identify, describe, and extend two- and three-dimensional shape patterns. [**Chapter 11**] Identify a rule for sorting objects. [**Chapter 11**] Identify and extend repeating patterns. [**Chapters 4, 8, and 11**] Find missing terms in repeating patterns. [**Chapters 4, 8, and 11**]	Describe, extend, and create two-dimensional shape patterns. [**Chapter 9**] Skip count by 2s, 5s, and 10s. [**Chapters 1, 2, and 3**] Identify rules for number patterns. [**Chapter 1**]
Properties		Use the Associative and Commutative Properties of Addition. [**Chapters 2, 5, and 9**] Additive identity property of 0. [**Chapters 2, 5, and 9**]	Understand that addition and subtraction are inverse operations. [**Chapter 3**] Use the Associative Property, Identity Property, and Commutative Property as addition strategies. [**Chapters 2 and 3**]
Number Theory			Determine whether a group of objects has an odd or even number of members. [**Chapter 6**] Identify odd and even numbers. [**Chapter 6**]

	Grade 3	Grade 4	Grade 5	Grade 6
NUMBER AND OPERATIONS (CONTINUED)				
Decimal Computation	Add and subtract money amounts. [**Chapter 2**]	Add and subtract money amounts. [**Chapter 2**]	Model order of operations with decimals. [**Chapter 7**]	Fluently multiply and divide multi-digit decimals using standard algorithms. **[Chapter 2]** Represent situations involving multiplication and division of decimals using models, such as bar models and area models. **[Chapters 2, 4, 5, 6, 8, 9, 11, 12]** Solve problems by multiplying and dividing decimals. **[Chapters 2, 4, 5, 6, 8, 9, 11, 12]**
Estimation and Mental Math	Use mental math strategies to add, subtract, multiply, and divide. **[Chapters 2, 3, 4, and 5]** Use mental computation and estimation to assess the reasonableness of answers. **[Chapters 2, 3, 4, 5, and 6]** Use rounding to estimate sums and differences. [**Chapters 2 and 3**]	Use mental math and estimation strategies to find sums, differences, products, and quotients. [**Chapters 1, 2, and 4**] Decide whether an estimate or exact answer is needed. [**Chapters 1, 2, and 4**]	Use estimation and mental math to estimate sums, differences, products, and quotients. [**Chapters 2 and 6**] Round decimals. [**Chapter 6**] Estimate sums and differences with fractions and decimals. [**Chapters 4 and 6**] Estimate products and quotients with decimals. [**Chapter 6**]	Estimate answers to percent problems to check reasonableness. **[Chapter 6]**
ALGEBRA / EXPRESSIONS AND EQUATIONS				
Patterns	Create and describe addition, multiplication, and division patterns. [**Chapters 1, 3, and 4**] Skip count by 2s to 10s. [**Chapters 3 and 4**] Analyze number and counting patterns. [**Chapters 1, 3, and 4**]	Identify, describe, and extend numerical and nonnumerical patterns. [**Chapters 1 and 7**] Use a rule to describe a sequence of numbers or objects. [**Chapters 1 and 7**]	Identify, describe, and extend numerical patterns involving all operations. [**Chapter 12**] Find rules to complete number patterns. [**Chapter 12**] Form and graph ordered pairs of corresponding terms from two numerical patterns. [**Chapter 12**]	
Properties	Understand that multiplication and division are related. [**Chapters 3 and 4**] Create and explain multiplication and division patterns. [**Chapters 3 and 4**] Model, define, and explain properties of multiplication. [**Chapter 3**]	Understand prime and composite numbers. [**Chapter 3**]	Explain patterns in the number of zeroes and in the placement of the decimal point when multiplying a number by a power of 10. [**Chapter 7**]	Use the distributive property to factor the sum of two whole numbers, or algebraic terms with whole-number coefficients. **[Chapter 7]**
Number Theory		Find the greatest common factor and least common multiple. [**Chapter 3**] Determine if a whole number is prime or composite. [**Chapter 3**]	Apply the least common multiple concept to finding a common denominator for two fractions. [**Chapter 4**]	Write a composite number as a product of its prime factors. **[Chapter 1]** Find the greatest common factor or least common multiple of two whole numbers. **[Chapter 1]**

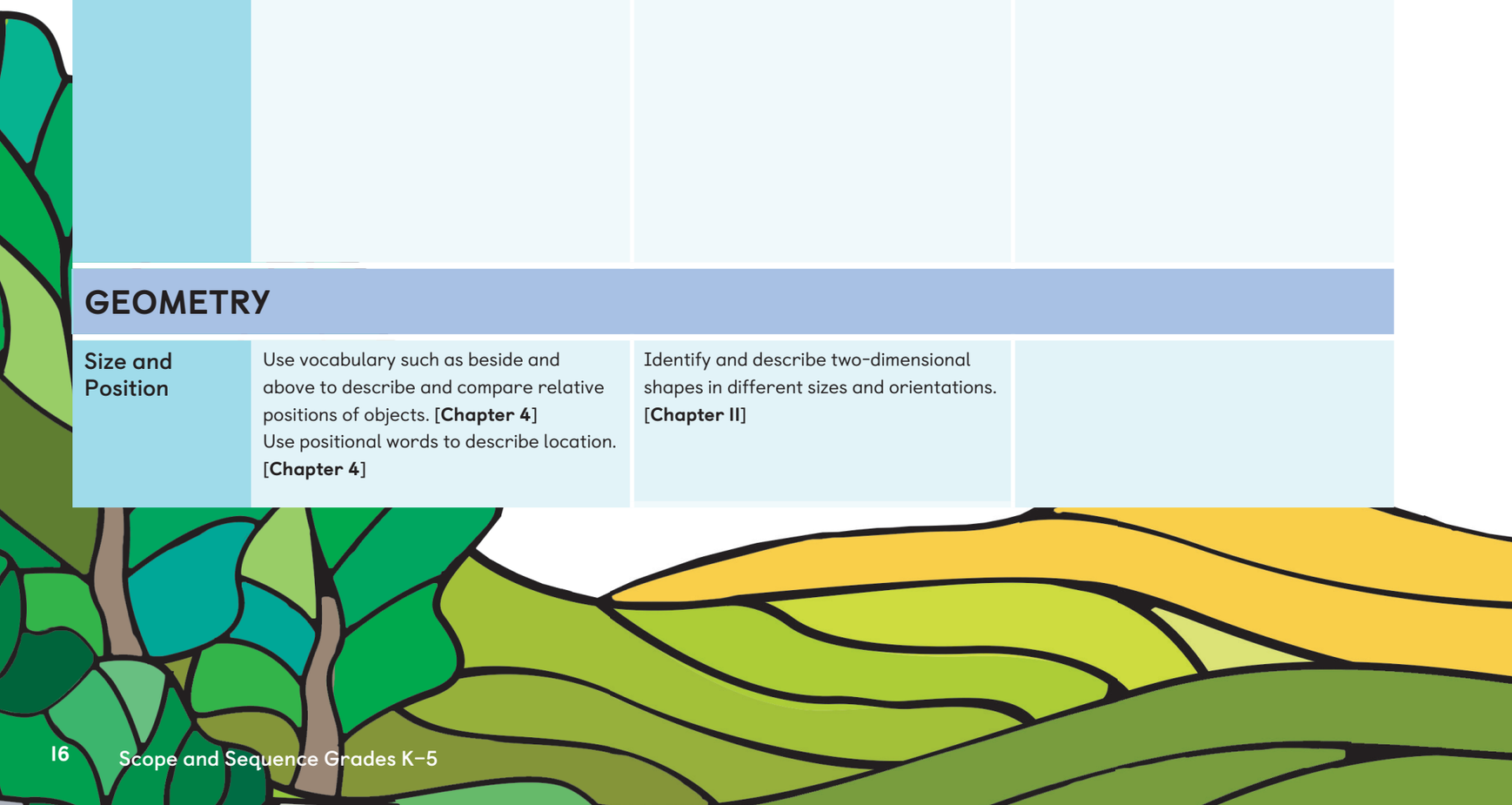
Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
ALGEBRA / EXPRESSIONS AND EQUATIONS (CONTINUED)			
Functional Relationships		Understand the relationships between the numbers in fact families. [**Chapters 3 and 5**]	Recognize how bar models show relationships between numbers and unknowns in number sentences. [**Chapter 4**]
Expressions/ Models	Use objects, fingers, drawings, and symbols to represent numbers. [**Chapters 1, 2, 3, 6, 7, and 12**] Use a variety of concrete (objects, fingers), pictorial, and symbolic models for addition and subtraction. [**Chapters 9, 10, and 11**] Use objects to represent geometric figures. [**Chapter 4**]	Use a variety of concrete, pictorial, and symbolic models for addition and subtraction. [**Chapters 2, 3, 5, and 9**]	Use a variety of concrete, pictorial, and symbolic models for addition, subtraction, and multiplication. [**Chapters 2, 3, 4, and 6**]
Number Sentences and Equations	Model addition and subtraction stories with addition and subtraction number sentences. [**Chapters 9, 10, and 11**]	Model addition and subtraction situations by writing addition and subtraction number sentences. [**Chapters 2, 3, 5, and 9**]	Model addition, subtraction, and multiplication situations by writing the respective equations. [**Chapters 2, 3, 4, and 6**] Use equations to represent real-world problems. [**Chapters 4 and 6**] Determine the value of missing quantities in equations. [**Chapters 2, 3, 4, and 6**]

	Grade 3	Grade 4	Grade 5	Grade 6
ALGEBRA / EXPRESSIONS AND EQUATIONS (CONTINUED)				
Functional Relationships	Understand the relationships between the numbers in multiplication-division fact families. [**Chapter 4**]	Understand the relationships between the numbers and symbols in formulas for area and perimeter. [**Chapter 8**]	Understand the relationships between the numbers and symbols in formulas for volume. [**Chapter 9**] Describe number relationships in context. Graph ordered pairs and equations from tables of values. [**Chapter 11**]	Use variables to write equations representing two real-world quantities that change in relation to one another. **[Chapter 8]** Analyze the relationship between an independent and dependent variable using graphs, tables, and equations. **[Chapter 8]**
Expressions/ Models	Use a variety of concrete, pictorial, and symbolic models for multi-digit addition, subtraction, multiplication, and division. [**Chapters 2, 3, and 4**] Represent two-step word problems with unknown quantities. [**Chapters 2, 3, 4, 6, 8, and 9**]	Use a variety of concrete, pictorial, and symbolic models for the four operations with whole numbers, fractions, and decimals. [**Chapters 2, 3, 4, 5, 6, and 7**]	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. [**Chapter 2**] Write and simplify numerical expressions. [**Chapter 2**] Evaluate numerical expressions with two or more operations using the order of operations. [**Chapter 2**]	Write and evaluate numerical expressions and geometric formulas involving whole-number exponents. **[Chapters 7 and 8]** Write and evaluate algebraic expressions using the order of operations. **[Chapters 7 and 8]** Identify parts of an expression using terms such as sum, term, product, and coefficient. **[Chapter 7]** Use the properties of addition and multiplication to write equivalent expressions, including factoring a common factor from a sum. **[Chapters 7 and 8]** Identify equivalent expressions and like and unlike terms of an expression. **[Chapter 7]** Solve problems using variable expressions in real-world contexts. **[Chapters 7 and 8]**
Number Sentences and Equations	Write addition, subtraction, multiplication, and division equations. [**Chapters 2, 3, 4, 6, 8, and 9**] Write and solve equations for one- and two-step real-world problems. [**Chapters 2, 3, 4, 6, 8, and 9**] Determine the missing parts (quantities or symbols) in equations. [**Chapters 2, 3, 4, 6, 8, and 9**]	Write and solve equations for multi-step word problems. [**Chapters 2 and 3**] Determine the missing parts (quantities or symbols) in equations. [**Chapters 2 and 3**]	Write and solve equations for multi-step word problems. [**Chapters 2, 3, 5, 8, and 11**] Write and solve equations. [**Chapters 2, 3, 5, 8, and 11**] Graph linear equations. [**Chapter 11**]	Use substitution to identify value(s) that make an equation or inequality true. **[Chapter 8]**

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
ALGEBRA / EXPRESSIONS AND EQUATIONS (CONTINUED)			
Equality and Inequality	Understand the meaning of the = sign in number sentences. [**Chapters 9, 10, and 11**]	Partition shapes into two to four equal shares. [**Chapter 11**]	Use and create models that demonstrate equality or inequality. [**Chapter 1**] Use <, >, and = to write equations or inequalities. [**Chapter 1**]
The Coordinate Plane			
GEOMETRY			
Size and Position	Use vocabulary such as beside and above to describe and compare relative positions of objects. [**Chapter 4**] Use positional words to describe location. [**Chapter 4**]	Identify and describe two-dimensional shapes in different sizes and orientations. [**Chapter 11**]	



	Grade 3	Grade 4	Grade 5	Grade 6
ALGEBRA / EXPRESSIONS AND EQUATIONS (CONTINUED)				
Equality and Inequality	Use and create models that demonstrate equality or inequality. [**Chapter 1**] Use <, >, and = to write equations or inequalities. [**Chapters 1 and 7**]	Understand equality and inequality. [**Chapters 1, 2, 3, 5, 6, and 7**]	Understand equality and inequality. [**Chapter 1**] Write and interpret statements of equality and inequality. [**Chapter 1**]	Write and solve addition and multiplication equations to solve real-world problems. **[Chapter 8]** Write and evaluate an inequality of the form x < c or x > c to represent a real-world situation. **[Chapter 8]** Recognize that an inequality of the form x < c or x > c has an infinite number of solutions and represent the solutions on a number line. **[Chapter 8]**
The Coordinate Plane			Identify and plot points in the first quadrant of the coordinate plane. [**Chapter 11**] Make a table of values from an equation, and plot the points these ordered pairs form in the coordinate plane. [**Chapter 11**]	Use negative numbers to identify and locate points in all four quadrants of the coordinate plane. **[Chapter 10]** Find the length of horizontal and vertical segments in the coordinate plane. **[Chapter 10]** Use tables and graphs to represent linear equations. **[Chapter 8]** Solve real-world problems by graphing points in all four quadrants of the coordinate plane. **[Chapter 10]** Plot pairs of equivalent rates represented in the coordinate plane. **[Chapter 4]** Draw polygons in the coordinate plane given the coordinates of the vertices. **[Chapter 10]**
GEOMETRY				
Size and Position				

Scope and Sequence Grades K – 6

	Kindergarten	Grade I	Grade 2
GEOMETRY (CONTINUED)			
Lines and Angles			Identify lines and curves. [**Chapter 9**]
Two-Dimensional Shapes / Polygons	Describe, compare, and name two-dimensional shapes regardless of their orientations and overall sizes. [**Chapter 4**] Name flat shapes that make up surfaces of real-world objects. [**Chapter 4**] Sort and classify two-dimensional shapes. [**Chapter 4**] Combine simple shapes to form larger shapes and pictures. [**Chapter 4**] Make and extend two-dimensional shape patterns. [**Chapter 4**]	Identify real-world two-dimensional shapes. [**Chapter II**] Identify and describe attributes and properties of two-dimensional shapes. [**Chapter II**] Sort and classify two-dimensional shapes based on attributes. [**Chapter II**] Compose and decompose two-dimensional shapes. [**Chapter II**]	Recognize and draw shapes based on specified attributes. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. [**Chapter 9**] Identify lines and curves. [**Chapter 9**] Compose and decompose two-dimensional shapes. [**Chapter 9**]
Three-Dimensional Shapes / Solid Figures	Analyze, describe, compare, name, and sort solid shapes. [**Chapter 4**] Understand that the surfaces of three-dimensional shapes are made up of two-dimensional shapes. [**Chapter 4**] Identify, describe, sort, and classify three-dimensional shapes. [**Chapter 4**] Identify solid figures that slide, stack, and roll. [**Chapter 4**]	Identify real-world three-dimensional shapes. [**Chapter II**] Identify two-dimensional shapes in three-dimensional shapes. [**Chapter II**] Sort and classify three-dimensional shapes. [**Chapter II**] Recognize shapes from different perspectives. [**Chapter II**] Compose and decompose three-dimensional shapes. [**Chapter II**]	Identify, describe, sort, and classify three-dimensional shapes. [**Chapter 9**] Identify solid figures that slide, stack, and roll. [**Chapter 9**]

	Grade 3	Grade 4	Grade 5	Grade 6
GEOMETRY (CONTINUED)				
Lines and Angles	Illustrate an angle as an amount of turning. [**Chapter 11**] Name angles. [**Chapter 11**] Identify right angles and compare angles to right angles. [**Chapter 11**]	Identify perpendicular and parallel lines. [**Chapter 9**] Estimate before measuring angles [**Chapter 9**] Draw perpendicular and parallel lines. [**Chapter 9**] Draw and measure angles. [**Chapter 9**] Understand the relationship between angles and circular measurement (360°). [**Chapter 9**] Recognize that angle can be broken down into smaller parts. [**Chapter 9**] Understand how to work with angles on a straight line. [**Chapter 9**] Understand how to work with angles at a point. [**Chapter 9**] Apply the sum of the angles on a straight line to solve problems. [**Chapter 9**]		Find the lengths of horizontal and vertical segments on a coordinate plane. **[Chapter 10]**
Two-Dimensional Shapes / Polygons	Describe, analyze, compare, and classify two-dimensional shapes by their sides and angles. [**Chapter 11**] Classify and sort polygons and quadrilaterals by specified attributes and properties. [**Chapter 11**] Measure and compare the area and perimeter of plane figures in square units. [**Chapter 6**]	Apply the properties of squares and rectangles. [**Chapters 8 and 9**] Find unknown angle measures and side lengths of squares and rectangles. [**Chapters 8 and 9**] Understand the relationships between the numbers and symbols in formulas for area and perimeter. [**Chapter 8**]	Apply the properties of right, isosceles, and equilateral triangles. [**Chapter 10**] Apply the properties of a parallelogram, rhombus, and trapezoid. [**Chapter 10**]	Identify regular polygons on the coordinate plane. **[Chapter 10]** Draw polygons in the coordinate plane given the coordinates of the vertices. **[Chapter 10]** Use coordinates to find the length of horizontal or vertical sides of polygons. **[Chapter 10]**
Three-Dimensional Shapes / Solid Figures			Create a solid figure using unit cubes. [**Chapter 9**]	

Scope and Sequence Grades K – 6

	Kindergarten	Grade I	Grade 2
GEOMETRY (CONTINUED)			
Congruence and Symmetry			
Coordinate Geometry			
Circles	Identify and describe two-dimensional shapes such as circles. [**Chapter 4**]	Compose two-dimensional shapes such as half-circles and quarter-circles. [**Chapter II**]	
MEASUREMENT			
Length and Distance	Compare lengths (long, short, longer, shorter). [**Chapter 8**] Describe and compare lengths and heights using nonstandard units. [**Chapter 8**] Develop a background for measurement by comparing and using nonstandard units. [**Chapter 8**]	Compare the lengths of two objects by comparing each with a third length (transitivity). [**Chapter 7**] Use a start line to measure length. [**Chapter 7**] Measure lengths using nonstandard units. [**Chapter 7**] Explain the need for equal-length units to measure. [**Chapter 7**] Count length units in groups of tens and ones. [**Chapter 7**] Compare measurements made using different units. [**Chapter 7**] Understand the inverse relationship between the size of a unit and the number of units. [**Chapter 7**]	Demonstrate linear measure as an iteration of units. [**Chapter 5**] Use rulers to measure length. [**Chapter 5**] Estimate and measure length. [**Chapter 5**] Measure length in meters, centimeters, feet, and inches. [**Chapter 5**] Use units of different length to measure an object twice; describe how the two measurements relate to the size of the unit chosen. [**Chapter 5**] Compare and measure lengths using customary and metric units. [**Chapter 5**] Demonstrate partitioning and transitivity in relation to length. [**Chapter 5**] Solve problems involving estimating, measuring, and computing length. [**Chapter 5**] Solve addition and subtraction word problems involving length. [**Chapter 5**]
Weight/Mass	Compare objects by weight. [**Chapter 8**]		

	Grade 3	Grade 4	Grade 5	Grade 6
GEOMETRY (CONTINUED)				
Congruence and Symmetry		Recognize line symmetry. [**Chapter 9**]		
Coordinate Geometry			Develop coordinate readiness with tables and line graphs. [**Chapter 11**] Plot points on a coordinate grid (first quadrant only). [**Chapter 11**]	
Circles		Understand the relationship between angles and circular measurement (360°). [**Chapter 9**]		
MEASUREMENT				
Length and Distance	Solve real-world problems in measurement. [**Chapters 2, 3, and 4**]	Convert from larger to smaller customary units of length. [**Chapters 10 and 11**] Convert from larger to smaller metric units of length. [**Chapters 10 and 11**] Solve real-world problems involving length. [**Chapters 10 and 11**]	Use measurement conversions of length in solving real-world problems. [**Chapters 1, 2, 3, and 8**]	
Weight/Mass	Select appropriate units and tools to estimate and measure masses of objects in kilograms or grams. [**Chapter 8**] Compare masses in kilograms or grams. [**Chapter 8**] Solve addition, subtraction, multiplication, or division word problems involving mass in kilograms or grams. [**Chapter 8**]	Convert from larger to smaller customary units of weight/mass. [**Chapters 10 and 11**] Convert from larger to smaller metric units of weight/mass. [**Chapters 10 and 11**] Solve real-world problems involving weight/mass. [**Chapters 10 and 11**]	Use measurement conversions of weight/mass in solving real-world problems. [**Chapters 1, 2, 3, and 8**]	

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
MEASUREMENT (CONTINUED)			
Capacity/ Volume			
Time		Tell time to the hour and half-hour on analog and digital clocks. [**Chapter 12**] Estimate time to the hour or half-hour. [**Chapter 12**]	Tell and write time using A.M. and P.M. [**Chapter 7**] Tell time to five minutes. [**Chapter 7**] Identify elapsed time of one hour or half hour. [**Chapter 7**]
Angles			Recognize and draw shapes given a number of angles. [**Chapter 9**]
Perimeter			

	Grade 3	Grade 4	Grade 5	Grade 6
MEASUREMENT (CONTINUED)				
Capacity/ Volume	Select appropriate tools and units to estimate and measure volume and capacity in liters. [**Chapter 9**] Compare volume or capacity in liters. [**Chapter 9**] Solve addition, subtraction, multiplication, or division word problems involving volume or capacity in liters. [**Chapter 9**]	Convert from larger to smaller customary units of capacity. [**Chapters 10 and 11**] Convert from larger to smaller metric units of capacity. [**Chapters 10 and 11**] Solve real-world problems involving capacity. [**Chapters 10 and 11**]	Use measurement conversions of capacity/volume in solving real-world problems. Estimate and measure volume in cubic units. [**Chapter 9**] Recognize volume as additive and find the volumes of prisms and solid figures. [**Chapter 9**] Use formulas to find the volume of rectangular prisms and other solid figures. [**Chapter 9**]	
Time	Tell time to the minute. [**Chapter 5**] Convert between hours and minutes. [**Chapter 5**] Determine elapsed time, start time, and end time. [**Chapter 5**] Add and subtract units of time. [**Chapter 5**]	Convert from larger to smaller customary units of time. [**Chapters 10 and 11**]		
Angles	Compare angles to right angles. [**Chapter 11**]	Estimate and measure angles in whole-number degrees with a protractor. [**Chapter 9**] Classify angles by angle measure and recognize angle measure as additive. [**Chapter 9**] Relate $\frac{1}{4}$-, $\frac{1}{2}$-, $\frac{3}{4}$-, and full turns to the number of right angles. [**Chapter 9**] Understand the relationship between angles and the 360 degrees of the measure of a circle. [**Chapter 9**] Apply the idea that the sum of angles on a straight line is 180°. [**Chapter 9**] Apply the idea that vertical angles are equal in measure. [**Chapter 9**] Apply the idea that the sum of angles at a point is 360°. [**Chapter 9**]		
Perimeter	Measure perimeter of plane figures. [**Chapter 6**] Choose the appropriate tool, unit, and strategy to measure perimeter. [**Chapter 6**]	Find the perimeter of squares, rectangles, and composite figures. [**Chapter 8**] Solve problems involving the perimeter of squares, rectangles, and composite figures. [**Chapter 8**]		

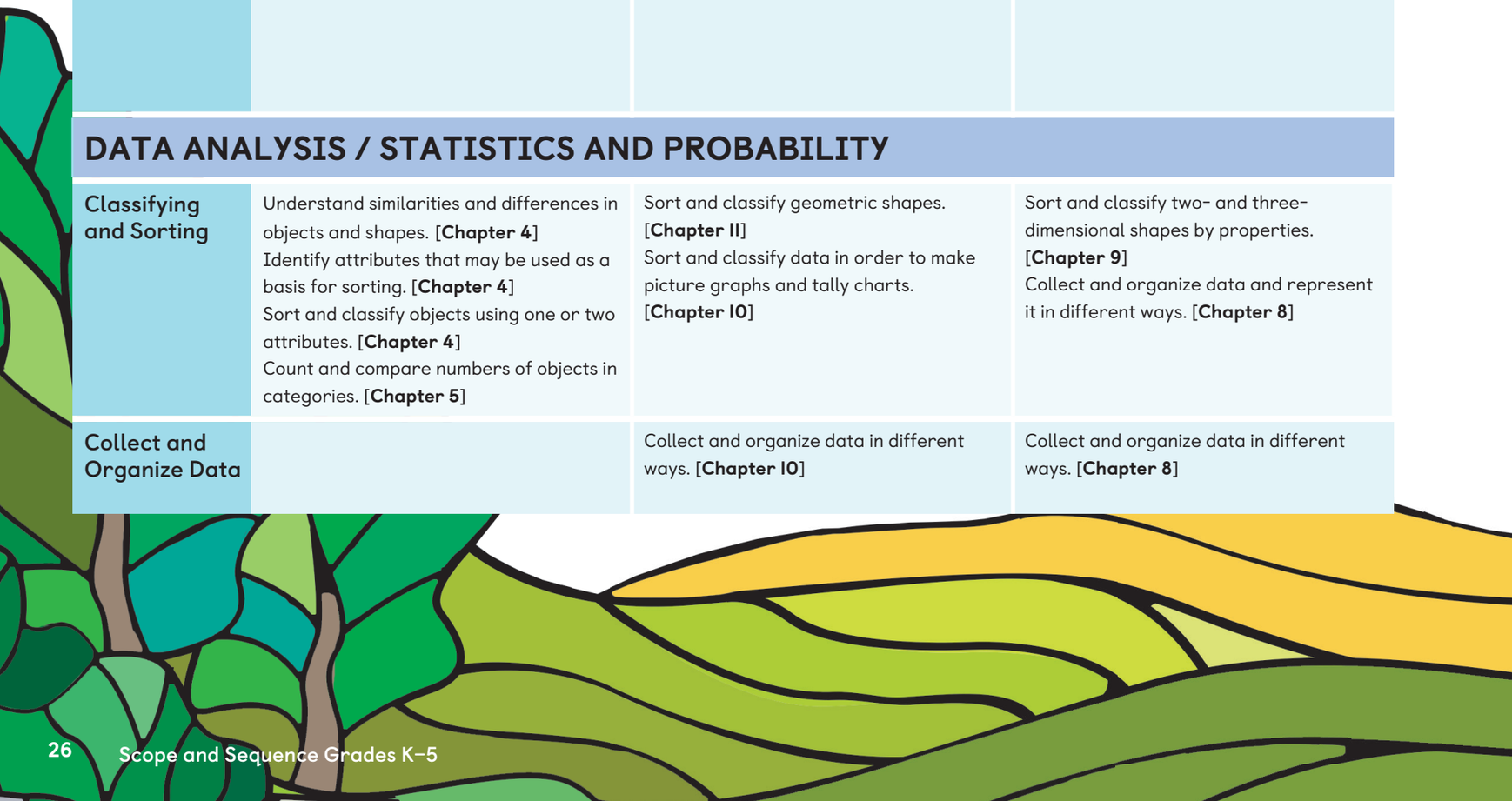
Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
MEASUREMENT (CONTINUED)			
Area		Compose and decompose two-dimensional shapes (foundation for understanding area). [**Chapter 11**]	Develop foundations for understanding area. [**Chapter 9**]
Surface Area and Volume			
RATIOS AND PROPORTIONAL RELATIONSHIPS			
Ratios			

	Grade 3	Grade 4	Grade 5	Grade 6
MEASUREMENT (CONTINUED)				
Area	Find and compare the area of plane figures in different square units. [**Chapter 9**] Draw different plane figures with the same area. [**Chapter 9**] Estimate area of small and large surfaces. Compare the area and perimeter of two plane figures. [**Chapter 9**] Find the area of rectangles and composite figures. [**Chapter 9**]	Connect area measure to the area model for multiplication; use it to justify the formula for the area of a rectangle. [**Chapter 8**] Estimate and measure area in square units. [**Chapter 8**] Select appropriate units, strategies, and tools to solve area. [**Chapter 8**] Recognize area as additive. [**Chapter 8**] Solve problems involving the area of squares, rectangles, and composite figures. [**Chapter 8**]		Find the area of triangles, parallelograms, trapezoids, and regular polygons by decomposing into rectangles or triangles. **[Chapter 9]** Find a missing dimension of a plane figure given its area and other dimension(s). **[Chapter 9]** Solve real-world problems involving the areas of triangles, parallelograms, trapezoids, and regular polygons. **[Chapter 9]**
Surface Area and Volume			Estimate and measure volume in cubic units. [**Chapter 9**]	Represent prisms and pyramids with triangular or rectangular faces using nets. **[Chapter 11]** Use nets of prisms and pyramids to find the surface areas. **[Chapter 11]** Find the volume of a rectangular prism with fractional edge lengths, and relate this to the formula V =Lwh. **[Chapter 11]** Find the volume of prisms using the formulas V = Bh. **[Chapter 11]** Solve real-world problems involving surface area and volume of prisms. **[Chapter 11]**
RATIOS AND PROPORTIONAL RELATIONSHIPS				
Ratios				Understand the concept of ratio and use ratio language to describe proportional relationships. **[Chapter 4]** Find the missing term in a pair of equivalent ratios or in a ratio table. **[Chapter 4]** Plot pairs of equivalent rates in the coordinate plane. **[Chapter 4]** Use tables to compare ratios. **[Chapter 4]** Solve multi-step real-world problems involving ratios using bar models. **[Chapter 4]**

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
RATIOS AND PROPORTIONAL RELATIONSHIPS (CONTINUED)			
Representing Ratios			
Rates			
Percents			
DATA ANALYSIS / STATISTICS AND PROBABILITY			
Classifying and Sorting	Understand similarities and differences in objects and shapes. [**Chapter 4**] Identify attributes that may be used as a basis for sorting. [**Chapter 4**] Sort and classify objects using one or two attributes. [**Chapter 4**] Count and compare numbers of objects in categories. [**Chapter 5**]	Sort and classify geometric shapes. [**Chapter 11**] Sort and classify data in order to make picture graphs and tally charts. [**Chapter 10**]	Sort and classify two- and three-dimensional shapes by properties. [**Chapter 9**] Collect and organize data and represent it in different ways. [**Chapter 8**]
Collect and Organize Data		Collect and organize data in different ways. [**Chapter 10**]	Collect and organize data in different ways. [**Chapter 8**]



	Grade 3	Grade 4	Grade 5	Grade 6
RATIOS AND PROPORTIONAL RELATIONSHIPS (CONTINUED)				
Representing Ratios				Use multiplication or division to write equivalent ratios. **[Chapter 4]** Make tables of equivalent ratios. **[Chapter 4]** Use bar models to solve problems involving ratios of three quantities. **[Chapter 4]**
Rates				Understand the concept of a unit rate a/b associated with a ratio a : b ($b \neq 0$), and use rate language in proportional situations. **[Chapter 5]** Compute and compare unit rates using the division algorithm. **[Chapter 5]** Solve unit rate problems, including unit pricing and constant speed. **[Chapter 5]**
Percents				Solve percent problems involving simple interest, tax, markups, discounts, and commissions. **[Chapter 6]** Convert fractions to percents. **[Chapter 6]** Find a percent of a number. **[Chapter 6]**
DATA ANALYSIS / STATISTICS AND PROBABILITY				
Classifying and Sorting	Classify and sort polygons and quadrilaterals by specified attributes and properties. [**Chapter 11**] Collect and organize data and represent it in different ways. [**Chapter 10**]	Construct line plots. [**Chapter 6**]		Represent data in frequency tables, dot plots and histograms. **[Chapter 12]** Display a data set in a box plot. **[Chapter 12]**
Collect and Organize Data	Collect and organize data and represent it in different ways. [**Chapter 10**]			

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
DATA ANALYSIS / STATISTICS AND PROBABILITY (CONTINUED)			
Represent Data		Represent data in picture graphs and tally charts. [**Chapter 10**]	Represent measurement data in a line plot using whole numbers. [**Chapter 8**]
Interpret/ Analyze Data		Interpret data in picture graphs and tally charts. [**Chapter 10**] Solve problems involving data. [**Chapter 10**]	Solve problem situations using graphs. [**Chapter 8**]
MAKING SENSE IN SOLVING PROBLEMS			
Build Skills Through Problem Solving	Build skills in comparing sets, and addition and subtraction encountering, discussing, and solving problems.	Build skills in addition, subtraction, and measurement through problem solving.	Build skills in addition, subtraction, multiplication, and measurement through problem solving.
Solve Real-World Problems	Solve real-world problems involving sorting, counting, and addition and subtraction.	Solve real-world problems involving addition and subtraction. Determine coins needed for various purchases.	Solve real-world problems involving addition, subtraction, multiplication, and measurement.

	Grade 3	Grade 4	Grade 5	Grade 6
DATA ANALYSIS / STATISTICS AND PROBABILITY (CONTINUED)				
Represent Data	Represent measurement data in a line plot where the horizontal scale is marked in whole numbers, halves, or quarters. [**Chapter 10**]	Make a line plot to display a data set of measurements in fractions of a unit. [**Chapter 6**]	Make a line plot to display a data set of measurements in fractions of a unit. [**Chapter 7**]	
Interpret/ Analyze Data	Interpret picture graphs and bar graphs with scales. [**Chapter 10**] Use bar graphs, picture graphs, and line plots to solve real-world problems. [**Chapter 10**]	Interpret line plots. [**Chapter 6**]	Interpret line graphs and line plots. [**Chapter 11**] Interpret a line plot to solve problems involving addition, subtraction, multiplication, and division of fractions. [**Chapter 11**]	Recognize a statistical question. **[Chapter 12]** Understand that a data set has a distribution, which can be described by its center and shape. **[Chapter 12]** Recognize that a measure of center summarizes all values of a data set with a single number. **[Chapter 12]** Identify measures of center of a data set and calculate each, and know when each is most useful. **[Chapter 12]** Describe the overall shape of a distribution, and relate the choice of a center to the shape of the distribution. **[Chapter 12]** Solve real-world problems involving the mean or median, such as finding a missing data value given the mean. **[Chapter 12]** Compute measures of variability for a data set: quartiles, interquartile range and mean absolution deviation. **[Chapter 12]**
MAKING SENSE IN SOLVING PROBLEMS				
Build Skills Through Problem Solving	Build skills in addition, subtraction, multiplication, division, and measurement through problem solving.	Build skills in multiplication, division, fraction concepts, data analysis, and measurement through problem solving.	Build skills in multiplication, division, fraction concepts, decimals, geometry, data analysis, and measurement through problem solving.	Build skills in multiplication and division of fractions and decimals, ratios, and percents; algebra, data analysis, and geometry and measurement through problem-solving.
Solve Real-World Problems	Solve real-world problems involving addition, subtraction, multiplication, division, and measurement.	Solve real-world problems involving addition, subtraction, multiplication, division, and measurement.	Solve real-world problems involving multiplication, division, concepts with whole numbers, fractions, and decimals, data analysis, and measurement.	Solve real-world problems involving multiplication, division, concepts with fractions, decimals, ratios, and percents; data analysis, geometry, and measurement.

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
MAKING SENSE IN SOLVING PROBLEMS (CONTINUED)			
Use Appropriate Strategies and Thinking Skills to Solve Problems	Decide on number sentences to fit addition and subtraction situations.	Apply problem-solving strategies in Think! and Problem Solving activities.	Apply problem-solving strategies in Think! and Problem Solving activities.
Apply and Explain Problem Solving	Solve real-world problems and describe methods for doing so. Explain why solutions make sense and are correct.	Apply and explain problem-solving processes in Think! and other activities.	Apply and explain problem-solving processes in Think! and other activities.
REASONING			
Explore Concepts	Use models to explain reasoning.	Explore concepts more deeply and justify reasoning. Apply thinking skills in Think! and Problem Solving activities.	Explore concepts more deeply and justify reasoning in Think!, Math Talk, and Activities. Apply thinking skills in Think!, Math Talk, Heuristics, and problem solving.
Investigate Mathematical Ideas	Apply counting and comparing skills in a wide variety of contexts; use numerals to convey information. Investigate ideas with two- and three-dimensional shapes. Investigate measurement concepts.	Further investigate mathematical ideas by completing critical thinking skills activities.	Further investigate mathematical ideas by completing critical thinking skills activities.
Identify, Demonstrate, and Express Regularity in Reasoning	Explain ways of identifying equal sets or explain which set has more or fewer. Use a balance to determine weights of objects in nonstandard units. Demonstrate that only a few big objects fit into small spaces and many small objects fit into big spaces. Describe, sort, and classify two- and three-dimensional shapes. Interpret data in tally charts and bar graphs. Identify and extend repeating shape patterns.	Explore transitivity by comparing lengths of three different objects. Identify and describe attributes and properties of two- and three-dimensional shapes. Interpret picture graphs, tally charts, and bar graphs. Identify and extend growing number patterns and repeating shape patterns.	Demonstrate the inverse relationship between the size of a unit and the number of units. Identify, describe, sort, and classify two- and three-dimensional shapes. Identify rules for number patterns. Explain why solutions make sense and are correct. Resist counter-suggestions about answers.

	Grade 3	Grade 4	Grade 5	Grade 6
MAKING SENSE IN SOLVING PROBLEMS (CONTINUED)				
Use Appropriate Strategies and Thinking Skills to Solve Problems	Apply problem-solving strategies in Think! and Problem Solving activities.	Use appropriate strategies to solve real-world problems.	Use appropriate strategies to solve real-world problems.	Discuss mathematical ideas, use appropriate strategies, solve real-world problems, and explain solution methods in class.
Apply and Explain Problem Solving	Apply and explain problem-solving processes in Think! and other activities.	Apply and explain problem-solving processes in Think! and other activities.	Apply and explain problem-solving processes in Think! and other activities.	Apply and explain problem-solving processes in Think! and other activities.
REASONING				
Explore Concepts	Explore concepts more deeply and justify reasoning in Think!, Math Talk, and Activities. Apply thinking skills in Think!, Math Talk, Heuristics, and problem solving.	Explore concepts more deeply and justify reasoning in Think!, Math Talk, and Activities. Apply thinking skills in Think!, Math Talk, Heuristics, and problem solving.	Explore concepts more deeply and justify reasoning in Think!, Math Talk, and Activities. Apply thinking skills in Think!, Math Talk, Heuristics, and problem solving.	Explore concepts more deeply and justify reasoning in Think!, Math Talk and Activities. Apply thinking skills in Think!, Math Talk, Heuristics and problem solving.
Investigate Mathematical Ideas	Further investigate mathematical ideas by completing critical thinking skills activities.	Further investigate mathematical ideas by completing critical thinking skills activities.	Further investigate mathematical ideas by completing critical thinking skills activities.	Further investigate mathematical ideas by completing critical thinking skills activities.
Identify, Demonstrate, and Express Regularity in Reasoning	Classify and identify two-dimensional shapes as polygons. Interpret picture and bar graphs with scales and line plots. Create and explain multiplication and division patterns. Explain why solutions make sense and correct. Resist counter-suggestions about answers.	Demonstrate the relationship between fractions on a number line and rulers marked with halves and fourths of an inch. Analyze line plots with fractions of a unit. Identify, describe, and extend numerical and nonnumerical patterns. Explain why solutions make sense and are correct. Resist counter-suggestions about answers.	Use properties of squares and rectangles to solve problems. Use properties of triangles and four-sided figures to solve problems. Make and analyze a line plot to represent a data set of measurements in fractions of a unit. Identify, describe, and extend numerical patterns involving all operations. Explain why solutions make sense and are correct. Resist counter-suggestions about answers.	Continue to use bar models to solve real-world problems involving multiplication, division, concepts with fractions, decimals, ratios, and percents; data analysis, geometry and measurement. Apply the properties of operations to generate equivalent numerical and algebraic expressions. Apply standard algorithms for addition, subtraction, multiplication, and division of whole numbers and decimals. Apply standard algorithms for multiplication and division with fractions. Apply concept of prime factorization to finding square roots and cube roots of perfect squares and perfect cubes.

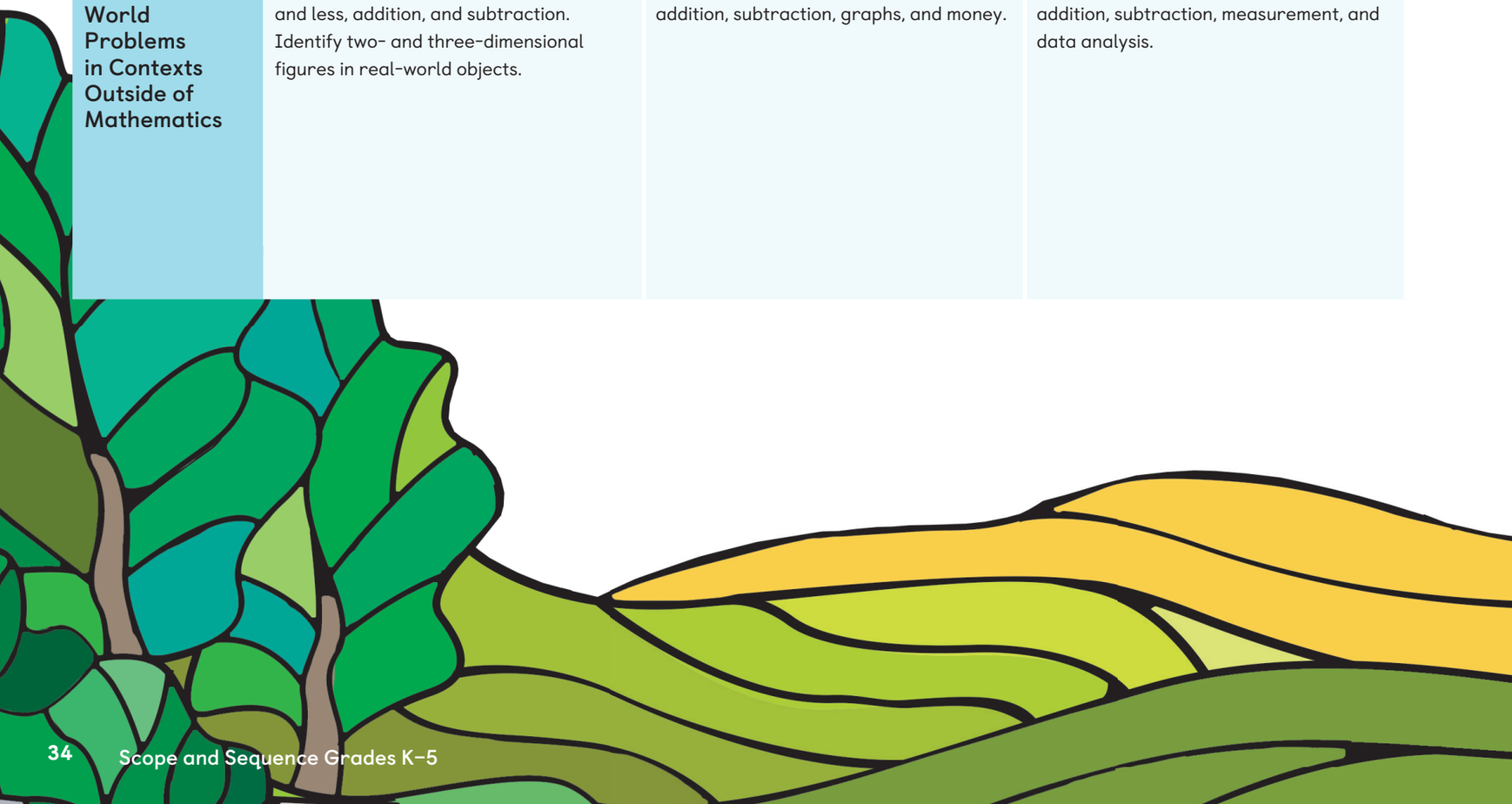
Scope and Sequence Grades K – 6

	Kindergarten	Grade I	Grade 2
REASONING (CONTINUED)			
Use a Variety of Reasoning Skills	Sort and classify using attributes. Identify similarities and differences. Determine numbers given clues; explain and justify answers. Analyze two- and three-dimensional shapes; identify their attributes and name them based on their attributes.	Recognize shapes from different perspectives. Use the Commutative and Associative properties, and tens and ones to solve two-digit addition and subtraction problems.	Identify solid figures that slide, stack, and roll. Explore the inverse relationship between addition and subtraction.
COMMUNICATION			
Consolidate Mathematical Thinking	Consolidate thinking in independent activities.	Present mathematical thinking through Math Talk and Think!	Present mathematical thinking through Math Talk and Think!
Communicate with Peers, Teachers, and Others	Discuss mathematical ideas in paired and small group activities as well as activities led by the teacher.	Discuss mathematical ideas in Math Talk, Think!, Activities, and STEAM Project work.	Discuss mathematical ideas in Math Talk, Think!, Activities, and STEAM Project work.
Share Mathematical Thinking	Share mathematical ideas in paired and small group activities.	Share mathematical ideas in paired and small group activities.	Share mathematical ideas in paired and small group activities.
Construct Arguments and Express Mathematics Ideas	Express ideas with words and gestures – in paired and small group activities as well as activities led by the teacher. Use models and pictures as stimuli for explaining thinking.	Express ideas in Think! and Math Talk, and some tasks in Practice On Your Own.	Express ideas in Think! and Math Talk, and some tasks in Practice On Your Own.
CONNECTIONS AND STRUCTURE			
Look for and Use Structure to Recognize Connections in Mathematical Ideas	Understand the connection between quantities and written numerals. Use numbers to describe properties of geometric shapes. Use counting and numbers while measuring in nonstandard units.	Relate counting to addition and subtraction. Understand the relationships between the numbers in fact families. Connect addition and multiplication (repeated addition). Recognize and apply different strategies for adding and subtracting I- and 2-digit numbers.	Examine and apply the inverse relationship between addition and subtraction. Connect geometric concepts with unit fractions of halves and fourths.

	Grade 3	Grade 4	Grade 5	Grade 6
REASONING (CONTINUED)				
Use a Variety of Reasoning Skills	Model, define, and explain properties of multiplication. Explore the inverse relationship between multiplication and division. Use estimation to check reasonableness.	Use properties of squares and rectangles to solve problems about area and perimeter. Explore the relationship between models for multiplication and division for whole numbers. Use estimation to check reasonableness (whole-number addition, subtraction, multiplication, and division).	Use properties to classify triangles and quadrilaterals. Apply understanding of models for multiplication and division of fractions and decimals by whole numbers. Use number properties (including the distributive property) to check reasonableness of results.	Develop and apply formulas for finding the area of triangles, parallelograms, trapezoids, and regular polygons. Develop and apply other formulas such as the distance formula.
COMMUNICATION				
Consolidate Mathematical Thinking	Present mathematical thinking through Math Talk and Think!	Present mathematical thinking through Math Talk and Think!	Present mathematical thinking through Math Talk and Think!	Present mathematical thinking through Math Talk and Think!
Communicate with Peers, Teachers, and Others	Discuss mathematical ideas in Math Talk, Think!, Activities, and STEAM Project Work.	Discuss mathematical ideas in Math Talk, Think!, Activities, and STEAM Project Work.	Discuss mathematical ideas in Math Talk, Think!, Activities, and STEAM Project Work.	Discuss mathematical ideas in Math Talk, Think, Activities, and STEAM Project Work.
Share Mathematical Thinking	Share mathematical ideas in paired and small group activities.	Share mathematical ideas in paired and small group activities.	Share mathematical ideas in paired and small group activities.	Share mathematical ideas in paired and small group activities.
Construct Arguments and Express Mathematics Ideas	Express ideas in Think! and Math Talk, and some tasks in Practice On Your Own.	Express ideas in Think! and Math Talk, and some tasks in Practice On Your Own.	Express ideas in Think! and Math Talk, and some tasks in Practice On Your Own.	Express ideas in Think! and Math Talk and some tasks in Practice on Your Own.
CONNECTIONS AND STRUCTURE				
Look for and Use Structure to Recognize Connections in Mathematical Ideas	Apply the inverse relationship between multiplication and division. Understand that the size of a fractional part is relative to the size of the whole. Connect subtraction and division (repeated subtraction). Recognize and apply different strategies for multiplication and division facts. Understand the relationships between the numbers in multiplication-division fact families.	Demonstrate that decimal notation is an extension of the base-ten system. Examine the relationship between fractions and decimals. Make connections among multiplication, division, factors, and multiples. Connect the units of customary capacity to one another.	Understand the relationship between fractions and division. Understand the relationship among fractions, and decimals, as ways to represent parts of a whole. Understand the relationship between fractions and division. Convert among mixed numbers and improper fractions.	Relate ratios, fractions, and rates. Understand that ratios can represent part-to-part as well as part-to-whole relationships. Convert among fractions, decimals, and percents.

Scope and Sequence Grades K – 6

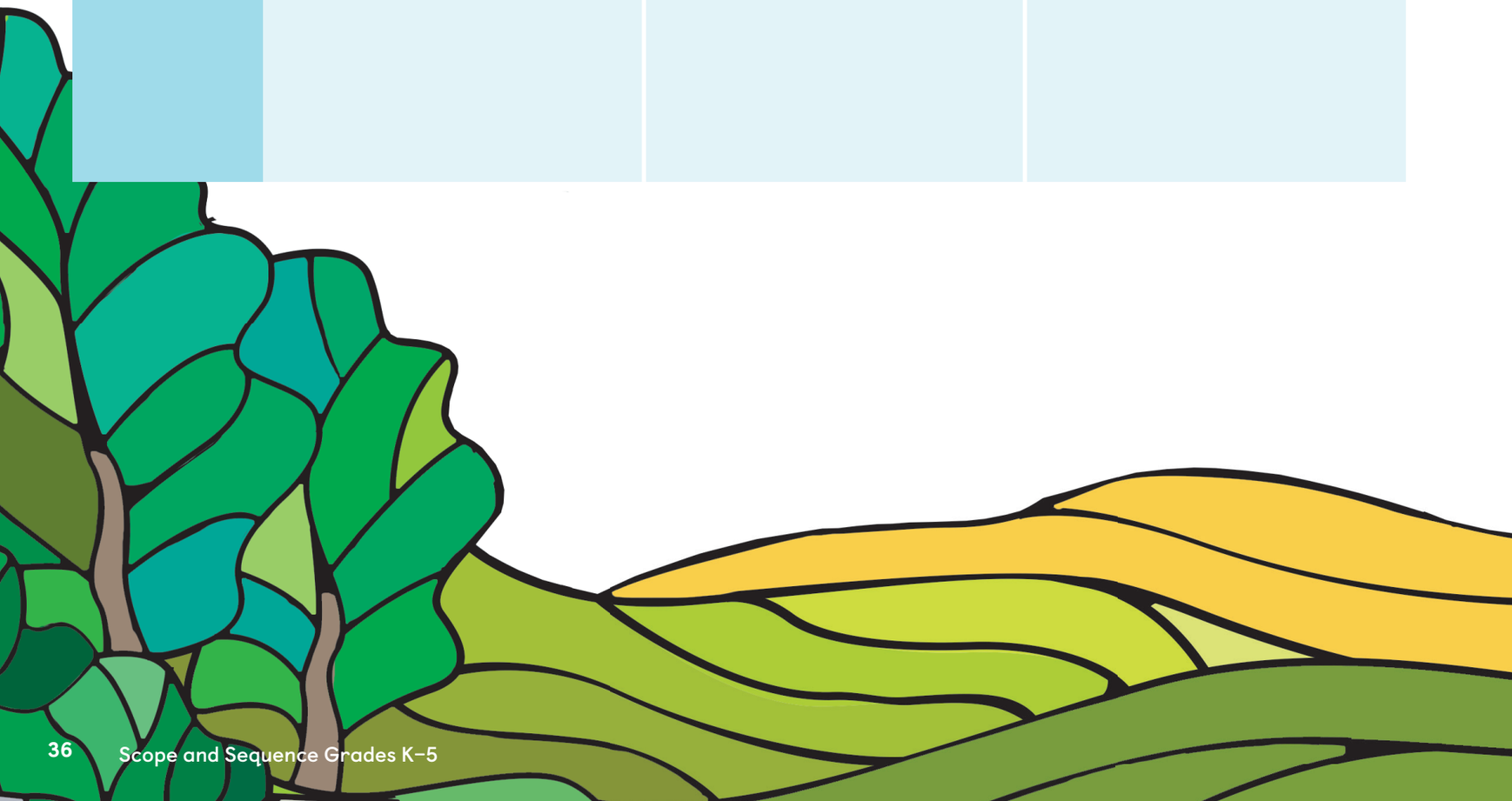
	Kindergarten	Grade 1	Grade 2
CONNECTIONS AND STRUCTURE (CONTINUED)			
Look for and Use Structure to Recognize Connections in Mathematical Ideas	Understand the connection between quantities and written numerals. Use numbers to describe properties of geometric shapes. Use counting and numbers while measuring in nonstandard units.	Relate counting to addition and subtraction. Understand the relationships between the numbers in fact families. Connect addition and multiplication (repeated addition). Recognize and apply different strategies for adding and subtracting 1- and 2-digit numbers.	Examine and apply the inverse relationship between addition and subtraction. Connect geometric concepts with unit fractions of halves and fourths.
Understand How Concepts Build on One Another	Explore relationships among counting, ordering, and ordinal numbers. Compare and relate attributes of two- and three-dimensional figures. Use a variety of measurement attributes to compare objects.	Learn how place-value concepts apply to regrouping in addition and subtraction.	Understand how patterns can be described using numbers, operations, and data displays. Recognize the relationship between bar models, number sentences, and number patterns.
Solve Real-World Problems in Contexts Outside of Mathematics	Solve real-world problems involving more and less, addition, and subtraction. Identify two- and three-dimensional figures in real-world objects.	Solve real-world problems involving addition, subtraction, graphs, and money.	Solve real-world problems involving addition, subtraction, measurement, and data analysis.



	Grade 3	Grade 4	Grade 5	Grade 6
CONNECTIONS AND STRUCTURE (CONTINUED)				
Look for and Use Structure to Recognize Connections in Mathematical Ideas	Apply the inverse relationship between multiplication and division. Understand that the size of a fractional part is relative to the size of the whole. Connect subtraction and division (repeated subtraction). Recognize and apply different strategies for multiplication and division facts. Understand the relationships between the numbers in multiplication-division fact families.	Demonstrate that decimal notation is an extension of the base-ten system. Examine the relationship between fractions and decimals. Make connections among multiplication, division, factors, and multiples. Connect the units of customary capacity to one another.	Understand the relationship between fractions and division. Understand the relationship among fractions, and decimals, as ways to represent parts of a whole. Understand the relationship between fractions and division. Convert among mixed numbers and improper fractions.	Relate ratios, fractions, and rates. Understand that ratios can represent part-to-part as well as part-to-whole relationships. Convert among fractions, decimals, and percents.
Understand How Concepts Build on One Another	Understand the meanings and uses of fractions including fraction of a set. Use addition, subtraction, multiplication, and division to construct and analyze graphs and line plots.	Describe number relationships in context. Identify equivalent fractions and decimals. Make connections among the greatest common factor, least common multiple, and operations with fractions.	Identify equivalent fractions, mixed numbers, and decimals. Make connections among operations with fractions and decimals.	Make connections between ratios, fractions, and rates. Make connections between squares and square roots, cubes and cube roots.
Solve Real-World Problems in Contexts Outside of Mathematics	Solve real-world problems involving addition, subtraction, multiplication, division, and measurement. Solve real-world problems related to money.	Solve real-world problems involving multiplication, division, fraction concepts, data analysis, and measurement.	Solve real-world problems involving multiplication, division, fraction, decimal, ratio, and percent concepts; data analysis, and measurement. Solve real-world problems involving all four operations with whole numbers, fractions, and decimals; algebra, geometry, measurement, and data analysis.	Solve real-world problems involving multiplication, division, concepts with fractions, decimals, ratios, and percents; data analysis, geometry, and measurement.

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
REPRESENTING AND MODELING MATHEMATICS			
Use Representations to Attend to Precision	Use concrete models to create a set with a given number of objects to 20. Use numbers to represent quantities up to 20. Use picture cards to communicate understanding of comparisons (bigger, taller, smaller). Understand the meaning of the +, −, and = symbols in number sentences. Model addition and subtraction stories with addition and subtraction number sentences. Represent addition and subtraction stories.	Use concrete and pictorial models to create a set with a given number of objects. (Up to 120) Represent numbers to 100 on a number line. Use number bonds to represent numbers. Understand equality and inequality. Use the +, −, and = symbols to represent real-world addition and subtraction situations. Represent numerical data using picture graphs, tally charts, and bar graphs. Represent sharing equally and making equal groups. Identify, describe, and extend two- and three-dimensional shape patterns. Identify a rule for sorting objects. Identify and extend repeating patterns.	Use concrete and pictorial models to create a set with a given number of objects. (Up to 1,000) Represent numbers to 1,000 on a number line. Use symbolic notation (<, >) to compare numbers. Use bar models to represent addition and subtraction situations. Represent numerical data using picture graphs, tally charts, bar graphs, and line plots. Use the ×, ÷, and = symbols to represent multiplication situations. Represent division as repeated subtraction equations. Describe, extend, and create two-dimensional shape patterns. Identify rules for number patterns.

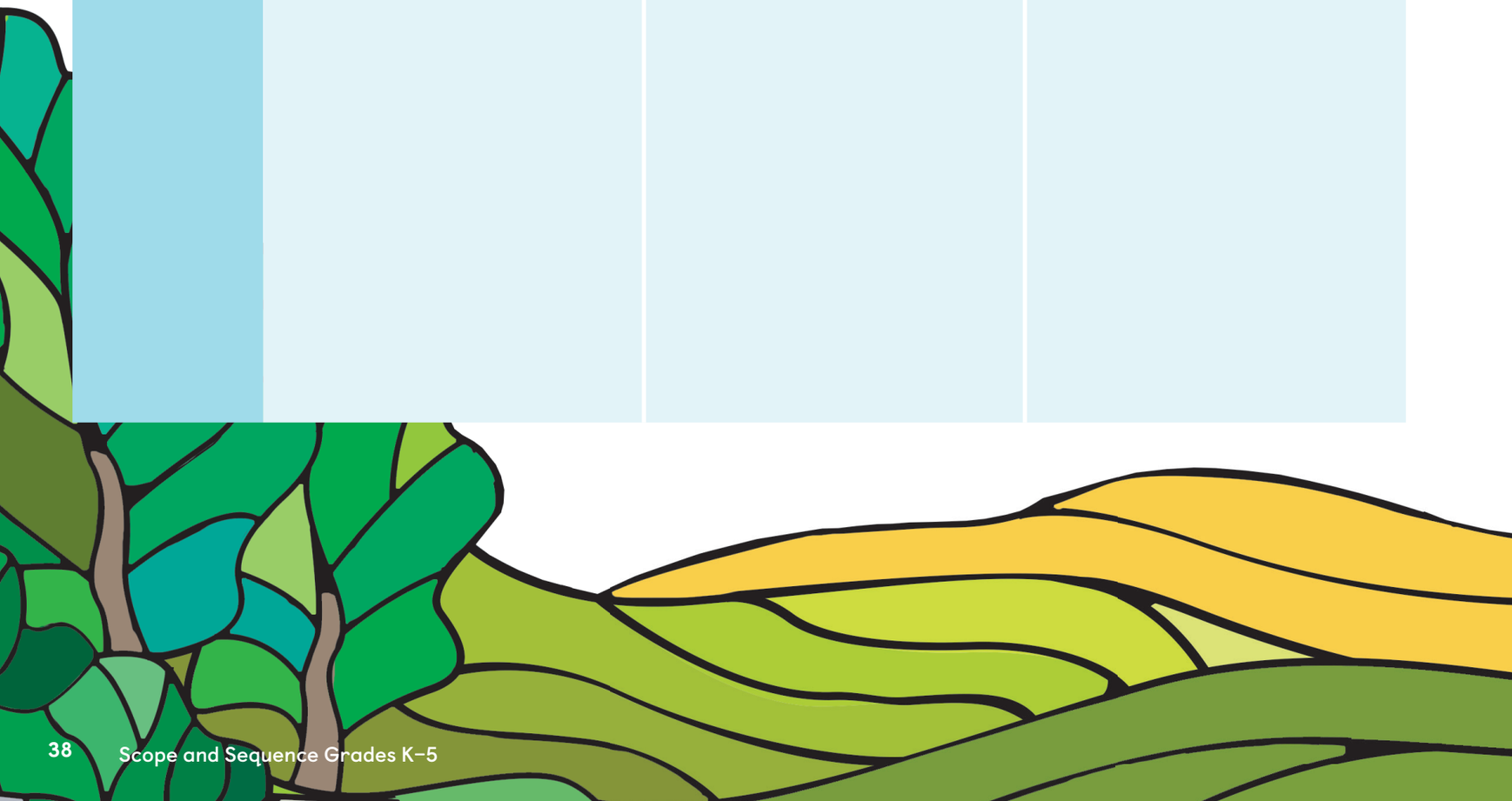


REPRESENTING AND MODELING MATHEMATICS

	Grade 3	Grade 4	Grade 5	Grade 6
Use Representations to Attend to Precision	Use place-value models to read, write, and represent numbers to 10,000. Represent numbers in different equivalent forms. Use the dollar sign and decimal point in money amounts. Solve addition and subtraction problems with greater numbers by using a bar model. Use the ×, ÷, and = symbols to represent multiplication and division situations. Use a variety of representations for multiplication and division, such as skip counting, repeated addition or subtraction, arrays, area models, number lines, grouping, and sharing. Determine the missing parts (quantities or symbols) in equations. Create and analyze multiplication and division patterns. Identify a rule for number and counting patterns.	Represent numbers to 1 million in various contexts. Write numbers to 1 million in standard, expanded, and word forms. Model decimals to tenths and hundredths. Write addition and subtraction equations for real-world problems with fractions and decimals. Define and use symbols in geometry to identify and relate geometric figures. Use a variety of models to represent multi-step real-world problems with whole numbers, fractions, and decimals. Use geometry tools (protractor, set squares, grid paper) to model problems. Use a rule to describe a sequence of numbers or objects. Understand the relationships between the numbers and symbols in formulas for area and volume.	Write numbers to 10 million in various forms. Model decimals to thousandths. Use letters as variables to represent unknown values in equations and formulas. Convert fractions and mixed numbers to decimals and decimals to fractions and mixed numbers. Interpret symbols of relation in comparing whole numbers, fractions, and decimals. Use a variety of models for multiplication and division of fractions and decimals by whole numbers. Use the order of operations in numeric expressions with two or more operations and grouping symbols. Write and solve equations. Use a coordinate grid to represent an equation as a graphed line. Find rules to complete number patterns.	Translate between fractions, decimals, ratios, and percents. Select the most useful form (fraction or decimal) for solving problems involving percents. Use a variety of models to solve problems involving ratios, rates, and percents. Use visual models (area models, sets, and number line drawings) to represent problems involving fractions, decimals, ratios, rates, and percents. Use part/whole, comparison, and before and after bar models to represent multistep real-world problems with whole numbers, fractions, decimals, ratios, rates, and percents. Measure distances in the coordinate plane. Use nets to find the surface areas of pyramids and prisms. Represent data in dot plots and histograms. Display numerical data in plots on a number line, including line plots, dot plots, and histograms.

Scope and Sequence Grades K – 6

	Kindergarten	Grade 1	Grade 2
REPRESENTING AND MODELING MATHEMATICS (CONTINUED)			
Select and Apply Appropriate Models and Tools to Represent Problems	Represent quantities with objects, number cubes, fingers, pictures/drawings, number cards, acting out, tallies, and numerals.	Use number bonds to represent number combinations. Use a variety of concrete, pictorial, and symbolic models and tools for addition and subtraction. Use technology (virtual manipulatives and computers) to model and draw.	Use place value models to create equivalent representations of numbers. Use a variety of concrete, pictorial, and symbolic models and tools for addition, subtraction, and multiplication. Represent multiplication with skip counting and arrays. Use customary and metric measuring tools to measure length. Use technology (virtual manipulatives and computers) to model and draw.
Interpret Phenomena Through Representations	Show understanding of big, middle-sized, small, and same size. Describe and compare objects by position. Identify flat shapes that make up surfaces of real-world objects. Order objects according to length, height, weight, or capacity. Use one-to-one correspondence to identify equality, or more or less.	Measure and compare lengths and weights using nonstandard units. Identify real-world two- and three-dimensional shapes. Represent data in picture graphs. Use a variety of models for adding and subtracting.	Use metric and customary units to measure length to the nearest unit. Represent data in bar graphs and picture graphs. Solve real-world problems about social phenomena. Use bar models to represent addition and subtraction situations.



	Grade 3	Grade 4	Grade 5	Grade 6
REPRESENTING AND MODELING MATHEMATICS (CONTINUED)				
Select and Apply Appropriate Models and Tools to Represent Problems	Use a variety of concrete, pictorial, and symbolic models and tools for multi-digit addition, subtraction, multiplication, and division. Represent multiplication with skip counting and arrays. Use a variety of models to represent fractions and equivalent fractions. Use technology (virtual manipulatives and computers) to model and draw.	Use a variety of models for multi-digit multiplication and division of whole numbers. Use technology (virtual manipulatives and computers) to model and draw. Use customary measuring tools to measure length, weight, and capacity.	Translate between equivalent improper fractions and mixed numbers. Translate among fractions, mixed numbers, and decimals. Find the most useful form of a quotient. Use a variety of models and tools for multiplication and division of fractions and decimals by whole numbers. Use technology (virtual manipulatives and computers) to model and draw.	Use geometry tools (protractor, set squares, grid paper) to model problems. Use technology (virtual manipulatives and computers) to model and draw. Select appropriate formulas and units in solving problems involving perimeter, area, surface area, and volume. Use a calculator to model, compute, and solve.
Interpret Phenomena Through Representations	Solve problems about sharing equally and making equal groups. Use metric units to measure mass and volume to the nearest unit. Use referents to estimate mass and volume. Use bar models to represent addition, subtraction, and multiplication situations. Solve problems about sharing equally and making equal groups. Use bar graphs, picture graphs, and line plots to solve problems. Represent measurement data using a line plot where the horizontal scale is marked in whole numbers, halves, or quarters. Solve real-world problems involving social situations. Solve real-world problems related to money.	Measure perimeter and area in customary and metric units. Collect data and organize it in a table. Create a line graph from data in a table. Interpret a line plot to solve problems involving addition and subtraction of fractions. Solve real-world problems involving multiplication, division, fraction concepts, data analysis, and measurement.	Measure volume of a rectangular prism. Generate a line plot to represent measurement data. Make a table of values from an equation, and plot the points these ordered pairs form in the coordinate plane. Solve real-world problems involving whole number, fraction, and decimal operations, algebra, data analysis, and measurement.	Write the square and cube of a whole number using indices. Represent negative numbers on a number line and in the coordinate plane. Represent solutions of inequalities on a number line. Understand absolute value of a rational number as its distance from 0 on a number line. Find equivalent ratios and rates.

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