Math Domains	K	1	2	3	4	5	6
COUNTING AND CARDINALITY							
Know number names and the count sequence.							
Count to 100 by ones and by tens.	Ch. 16						
Count forward beginning from a given number within the known sequence (instead of having to begin at 1).	Ch. 16						
Write numbers from 0 to 20.	Ch. 2–4, 12, 15–16						
Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects).	Ch. 2–4, 12, 15–16						
Count to tell the number of objects.							
Say the number names in the standard order when counting objects, pairing each object with one and only one number name and each number name with one and only one object.	Ch. 2, 4, 12						
Understand that the last number name said tells the number of objects counted, regardless of their arrangement or the order in which they were counted.	Ch. 2–5, 12, 15						
Understand that each successive number name refers to a quantity that is one larger.	Ch. 3–5, 12, 15						
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.	Ch. 2–5, 12, 15, 18						

Math Domains	K	1	2	3	4	5	6
COUNTING AND CARDINALITY *(continued)*							
Compare numbers.							
Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, using strategies such as matching and counting.	Ch. 2–5						
Compare two numbers between 1 and 10 presented as written numerals.	Ch. 3–5, 12						
OPERATIONS AND ALGEBRAIC THINKING							
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.							
Represent addition using a variety of methods.	Ch. 10						
Represent subtraction using a variety of methods.	Ch. 11						
Solve addition word problems within 10.	Ch. 10	Ch. 1–2					
Add within 10.	Ch. 10	Ch. 1–2					
Solve subtraction word problems within 10.	Ch. 11	Ch. 3–4					
Subtract within 10.	Ch. 11	Ch. 3–4					
Decompose numbers less than or equal to 10.	Ch. 9						
Find numbers that make 10.	Ch. 10–11						
Fluently add within 5.	Ch. 10–11						
Fluently subtract within 5.	Ch. 11						
Represent and solve problems involving addition and subtraction.							
Use addition within 20.		Ch. 8	Ch. 1				
Use subtraction within 20.		Ch. 9	Ch. 2				
Solve addition problems with 3 addends.		Ch. 2, 8					

Math Domains	K	1	2	3	4	5	6
OPERATIONS AND ALGEBRAIC THINKING *(continued)*							
Represent and solve problems involving addition and subtraction. *(continued)*							
Use addition within 100 to solve problems.			Ch. 1, 4				
Use subtraction within 100 to solve problems.			Ch. 2, 5				
Understand and apply properties of operations and the relationship between addition and subtraction.							
Apply properties as strategies to add.		Ch. 1–2, 8					
Apply properties as strategies to subtract.		Ch. 3–4, 9					
Add and subtract within 20.							
Relate counting to addition.		Ch. 1–2, 8					
Relate counting to subtraction.		Ch. 3–4, 9					
Demonstrate fluency for addition within 10.		Ch. 1–2					
Demonstrate fluency for subtraction within 10.		Ch. 3–4					
Fluently add within 20 using mental strategies.			Ch. 1				
Fluently subtract within 20 using mental strategies.			Ch. 2				
Work with addition and subtraction equations.							
Understand the meaning of the equal sign.		Ch. 1, 3, 9					
Determine if equations involving addition and subtraction are true.		Ch. 1, 3, 9					
Determine the unknown whole number in an addition equation relating 3 numbers.		Ch. 2, 4	Ch. 1				
Determine the unknown whole number in an subtraction equation relating 3 numbers.		Ch. 3, 9	Ch. 2				

Math Domains	K	1	2	3	4	5	6
OPERATIONS AND ALGEBRAIC THINKING *(continued)*							
Work with addition and subtraction equations. *(continued)*							
Determine whether a group of objects has an odd number or even number of objects.			Ch. 10				
Use addition to find the total number of objects arranged in an array.			Ch. 10				
Represent and solve problems involving multiplication and division.							
Interpret products of whole numbers.				Ch. 4–6, 8			
Interpret whole-number quotients of whole numbers.				Ch. 4, 7–8			
Use multiplication and division within 100 to solve word problems involving equal groups, arrays, and measurement quantities.				Ch. 4–8			
Determine the known whole number in a multiplication or division equation relating three whole numbers.				Ch. 5–7			
Understand properties of multiplication and the relationship between multiplication and division.							
Apply properties of operations as strategies to multiply and divide.				Ch. 4–6			
Understand division as an unknown-factor problem.				Ch. 7–8			
Multiply and divide within 100.							
Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division.				Ch. 5–8			

Math Domains	K	1	2	3	4	5	6
OPERATIONS AND ALGEBRAIC THINKING *(continued)*							
Solve problems involving the four operations, and identify and explain patterns in arithmetic.							
Solve two-step word problems using the four operations.				Ch. 2, 6, 8			
Identify arithmetic patterns and explain them using properties of operations.				Ch. 2, 5–6			
Use the four operations with whole numbers to solve problems.							
Interpret a multiplication equation as a comparison.					Ch. 4–5		
Multiply or divide to solve word problems involving multiplicative comparison.					Ch. 4–8		
Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted.					Ch. 2–4, 7–8		
Gain familiarity with factors and multiples.							
Find all factor pairs for a whole number in the range 1–100.					Ch. 9		
Recognize that a whole number is a multiple of each of its factors.					Ch. 9		
Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number.					Ch. 9		
Determine whether a given whole number in the range 1–100 is prime or composite.					Ch. 9		
Generate and analyze patterns.							
Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.					Ch. 7, 17		

Math Domains	K	1	2	3	4	5	6
OPERATIONS AND ALGEBRAIC THINKING *(continued)*							
Write and interpret numerical expressions.							
Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.						Ch. 2–4, 7, 12	
Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.						Ch. 1, 3, 4	
Analyze patterns and relationships.							
Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms.						Ch. 17	
Graph ordered pairs on a coordinate plane.						Ch. 17	
EXPRESSIONS AND EQUATIONS							
Apply and extend previous understandings of arithmetic to algebraic expressions.							
Write and evaluate numerical expressions involving whole-number exponents.							Ch. 4
Write expressions that record operations with numbers and with letters standing for numbers.							Ch. 1–4, 7–8
Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.							Ch. 1–4
Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems.							Ch. 1–4, 7–8
Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).							Ch. 1–4, 7–8

Math Domains	K	1	2	3	4	5	6
EXPRESSIONS AND EQUATIONS *(continued)*							
Apply and extend previous understandings of arithmetic to algebraic expressions. *(continued)*							
Apply the properties of operations to generate equivalent expressions.							Ch. 4
Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).							Ch. 4
Reason about and solve one-variable equations and inequalities.							
Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true?							Ch. 5
Use substitution to determine whether a given number in a specified set makes an equation or inequality true.							Ch. 5
Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.							Ch. 4–5
Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.							Ch. 5, 7–8
Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem.							Ch. 5
Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.							Ch. 5

Math Domains	K	1	2	3	4	5	6
EXPRESSIONS AND EQUATIONS *(continued)*							
Represent and analyze quantitative relationships between dependent and independent variables.							
Use variables to represent two quantities in a real-world problem that change in relationship to one another.							Ch. 13
Write an equation to express one quantity in terms of the other quantity.							Ch. 13
Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.							Ch. 13
NUMBER AND OPERATIONS IN BASE TEN							
Work with numbers 11–19 to gain foundations for place value.							
Compose and decompose numbers from 11 to 19 into ten ones and some further ones.	Ch. 13						
Understand that numbers from 11 to 19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. (K and 1)	Ch. 13	Ch. 6					
Extend the counting sequence.							
Count to 120, starting at any number less than 120.		Ch. 6–7					
Read and write numerals and represent a number of objects with a written numeral.		Ch. 6–7					
Understand place value.							
Understand that the two digits of a two-digit number represent amounts of tens and ones.		Ch. 6–7					
10 can be thought of as a bundle of ten ones—called a "ten."		Ch. 6–7					

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Understand place value. *(continued)*							
The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).		Ch. 6–7, 11–12					
Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.		Ch. 7					
Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.			Ch. 7				
100 can be thought of as a bundle of ten tens—called a "hundred."			Ch. 7				
The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).			Ch. 7				
Count within 1000; skip-count by 5s, 10s, and 100s.			Ch. 3, 7				
Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.			Ch. 3, 7				
Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.			Ch. 7				
Generalize place value understanding for multi-digit whole numbers.							
Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.					Ch. 1		
Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.					Ch. 1		

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Generalize place value understanding for multi-digit whole numbers. *(continued)*							
Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.					Ch. 1		
Use place value understanding to round multi-digit whole numbers to any place.					Ch. 1		
Understand the place value system.							
Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.						Ch. 1	
Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10.						Ch. 1, 12–13	
Use whole-number exponents to denote powers of 10.						Ch. 1, 12–13	
Read and write decimals to thousandths using base-ten numerals, number names, and expanded form						Ch. 2	
Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.						Ch. 2, 13	
Use place value understanding to round decimals to any place.						Ch. 2, 10–11	

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Use place value understanding and properties of operations to add and subtract.							
Add within 100, including adding a two-digit number and a one-digit number		Ch. 11					
Add within 100, including adding a two-digit number and a multiple of 10.		Ch. 11					
Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.		Ch. 11					
Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.		Ch. 11–12					
Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences)		Ch. 12					
Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.			Ch. 1–2, 4–5				
Add up to four two-digit numbers using strategies based on place value and properties of operations.			Ch. 4				
Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction			Ch. 1–2, 4–5, 7–9				
Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones			Ch. 1–2, 4–5, 7–9				
Sometimes it is necessary to compose or decompose tens or hundreds.			Ch. 1–2, 4–5, 7–9				

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Use place value understanding and properties of operations to add and subtract. *(continued)*							
Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.			Ch. 8–9				
Explain why addition and subtraction strategies work, using place value and the properties of operations.			Ch. 5, 8–9				
Use place value understanding and properties of operations to perform multi-digit arithmetic.							
Use place value understanding to round whole numbers to the nearest 10 or 100.				Ch. 1			
Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.				Ch. 1–3			
Multiply one-digit whole numbers by multiples of 10 in the range 10–90 using strategies based on place value and properties of operations.				Ch. 6			
Fluently add and subtract multi-digit whole numbers using the standard algorithm.					Ch. 2–3		
Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations.					Ch. 4–6, 8		
Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.					Ch. 7–8		

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Perform operations with multi-digit whole numbers and with decimals to hundredths.							
Fluently multiply multi-digit whole numbers using the standard algorithm.						Ch. 3	
Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.						Ch. 4	
Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction						Ch. 10–13	
Develop understanding of fractions as numbers.							
Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/*b*.				Ch. 9			
Understand a fraction as a number on the number line; represent fractions on a number line diagram.				Ch. 9			
Represent a fraction 1/*b* on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into *b* equal parts. Recognize that each part has size 1/*b* and that the endpoint of the part based at 0 locates the number 1/*b* on the number line.				Ch. 9			
Represent a fraction *a*/*b* on a number line diagram by marking off a lengths 1/*b* from 0. Recognize that the resulting interval has size *a*/*b* and that its endpoint locates the number *a*/*b* on the number line.				Ch. 9			

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Develop understanding of fractions as numbers. *(continued)*							
Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.				Ch. 10			
Recognize and generate simple equivalent fractions, e.g., 1/2 = 2/4, 4/6 = 2/3. Explain why the fractions are equivalent, e.g., by using a visual fraction model.				Ch. 10			
Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.				Ch. 9–10			
Compare two fractions with the same numerator or the same denominator by reasoning about their size.				Ch. 10			
Recognize that comparisons of two fractions with the same numerator or the same denominator are valid only when the two fractions refer to the same whole.				Ch. 10			
Record the results of comparisons of two fractions with the same numerator or the same denominator with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.				Ch. 10			
Extend understanding of fraction equivalence and ordering.							
Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.					Ch. 10		

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Extend understanding of fraction equivalence and ordering. *(continued)*							
Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.					Ch. 10		
Build fractions from unit fractions.							
Understand a fraction *a*/*b* with a > 1 as a sum of fractions 1/*b*.					Ch. 11		
Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.					Ch. 11		
Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.					Ch. 11		
Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.					Ch. 10–11		
Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.					Ch. 11		
Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.					Ch. 12		

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Build fractions from unit fractions. *(continued)*							
Understand a fraction *a*/*b* as a multiple of 1/*b*.					Ch. 12		
Understand a multiple of *a*/*b* as a multiple of 1/*b*, and use this understanding to multiply a fraction by a whole number.					Ch. 12		
Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.					Ch. 12		
Understand decimal notation for fractions, and compare decimal fractions.							
Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.					Ch. 13		
Use decimal notation for fractions with denominators 10 or 100.					Ch. 13		
Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.					Ch. 13		
Use equivalent fractions as a strategy to add and subtract fractions.							
Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.						Ch. 6–7	

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Use equivalent fractions as a strategy to add and subtract fractions. *(continued)*							
Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.						Ch. 6–9	
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.							
Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.						Ch. 5, 8	
Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.						Ch. 8	
Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$.						Ch. 8	
Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.						Ch. 8	
Interpret multiplication as scaling (resizing), by comparing 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.						Ch. 8	

Math Domains	K	1	2	3	4	5	6
NUMBER AND OPERATIONS IN BASE TEN *(continued)*							
Apply and extend previous understandings of multiplication and division to multiply and divide fractions. *(continued)*							
Interpret multiplication as scaling (resizing), by explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1."						Ch. 8	
Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.						Ch. 8–9	
Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.						Ch. 9	
Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.						Ch. 9	
Interpret division of a whole number by a unit fraction, and compute such quotients.						Ch. 9	
Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.						Ch. 9	

Math Domains	K	1	2	3	4	5	6
THE NUMBER SYSTEM							
Apply and extend previous understandings of multiplication and division to divide fractions by fractions.							
Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.							Ch. 8
Compute fluently with multi-digit numbers and find common factors and multiples.							
Fluently divide multi-digit numbers using the standard algorithm.							Ch. 3
Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.							Ch. 1–3
Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor.							Ch. 6
Apply and extend previous understandings of numbers to the system of rational numbers.							
Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.							Ch. 9
Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.							Ch. 9

Math Domains	K	1	2	3	4	5	6
THE NUMBER SYSTEM *(continued)*							
Apply and extend previous understandings of numbers to the system of rational numbers. *(continued)*							
Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., -(-3) = 3, and that 0 is its own opposite.							Ch. 9
Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.							Ch. 9
Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.							Ch. 9
Understand ordering and absolute value of rational numbers.							Ch. 9
Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.							Ch. 9
Write, interpret, and explain statements of order for rational numbers in real-world contexts.							Ch. 9
Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.							Ch. 9
Distinguish comparisons of absolute value from statements about order.							Ch. 9
Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.							Ch. 9

Math Domains	K	1	2	3	4	5	6
RATIOS AND PROPORTIONAL REASONING							
Understand ratio concepts and use ratio reasoning to solve problems.							
Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.							Ch. 10
Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship.							Ch. 10
Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.							Ch. 10
Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane.							Ch. 10
Use tables to compare ratios.							Ch. 10
Solve unit rate problems including those involving unit pricing and constant speed.							Ch. 10
Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity).							Ch. 11
Solve problems involving finding the whole, given a part and the percent.							Ch. 11
Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.							Ch. 12

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA							
Describe and compare measurable attributes.							
Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.	Ch. 14						
Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	Ch. 14						
Classify objects and count the number of objects in each category.							
Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.	Ch. 1, 5						
Measure lengths indirectly and by iterating length units.							
Order three objects by length; compare the lengths of two objects indirectly by using a third object.		Ch. 5					
Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end.		Ch. 5					
Understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.		Ch. 5					

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Measure and estimate lengths in standard units.							
Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.			Ch. 6				
Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.			Ch. 6				
Estimate lengths using units of inches, feet, centimeters, and meters.			Ch. 6				
Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.			Ch. 6				
Relate addition and subtraction to length.							
Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.			Ch. 6				
Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ...			Ch. 6				
Represent whole-number sums and differences within 100 on a number line diagram.			Ch. 6				
Tell and write time.							
Tell and write time in hours and half-hours using analog and digital clocks.		Ch. 15					

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Work with time and money.							
Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.			Ch. 12				
Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately.			Ch. 12				
Solve problems involving measurement and estimation.							
Tell and write time to the nearest minute and measure time intervals in minutes.				Ch. 13			
Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.				Ch. 13			
Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).				Ch. 11			
Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.				Ch. 11			
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.							
Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.					Ch. 14		

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit. *(continued)*							
Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.					Ch. 14–15		
Apply the area and perimeter formulas for rectangles in real world and mathematical problems.					Ch. 17		
Convert like measurement units within a given measurement system.							
Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.						Ch. 14	
Represent and interpret data.							
Organize, represent, and interpret data with up to three categories.		Ch. 10					
Ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.		Ch. 10					
Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object.			Ch. 11				

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Represent and interpret data. *(continued)*							
Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.			Ch. 11				
Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories.			Ch. 11				
Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.			Ch. 11				
Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.				Ch. 12			
Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.				Ch. 12			
Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8).					Ch. 15		
Solve problems involving addition and subtraction of fractions by using information presented in line plots.					Ch. 15		
Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8).						Ch. 17	
Use operations on fractions to solve problems involving information presented in line plots.						Ch. 17	

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Geometric measurement: understand concepts of area and relate area to multiplication and to addition.							
Recognize area as an attribute of plane figures and understand concepts of area measurement.				Ch. 15			
A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.				Ch. 15			
A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.				Ch. 15			
Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).				Ch. 15			
Relate area to the operations of multiplication and addition.				Ch. 15			
Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.				Ch. 15			
Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems.				Ch. 15			
Represent whole-number products as rectangular areas in mathematical reasoning.				Ch. 15			
Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$.				Ch. 15			
Use area models to represent the distributive property in mathematical reasoning.				Ch. 15			

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Geometric measurement: understand concepts of area and relate area to multiplication and to addition. *(continued)*							
Recognize area as additive.				Ch. 15			
Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.				Ch. 15			
Geometric measurement: recognize perimeter.							
Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths.				Ch. 16			
Solve real world and mathematical problems involving perimeters of polygons, including finding an unknown side length.				Ch. 16			
Solve real world and mathematical problems involving perimeters of polygons, including exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.				Ch. 16			
Geometric measurement: understand concepts of angle and measure angles.							
Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.					Ch. 16		
An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.					Ch. 16		

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Geometric measurement: understand concepts of angle and measure angles. *(continued)*							
An angle that turns through *n* one-degree angles is said to have an angle measure of *n* degrees.					Ch. 16		
Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.					Ch. 16		
Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.					Ch. 16		
Geometry measurement: understand concepts of volume and relate volume to multiplication and to addition.							
Recognize volume as an attribute of solid figures and understand concepts of volume measurement.						Ch. 16	
A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.						Ch. 16	
A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of *n* cubic units.						Ch. 16	
Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.						Ch. 16	
Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.						Ch. 16	

Math Domains	K	1	2	3	4	5	6
MEASUREMENT AND DATA *(continued)*							
Geometry measurement: understand concepts of volume and relate volume to multiplication and to addition. *(continued)*							
Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.						Ch. 16	
Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.						Ch. 16	
Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.						Ch. 16	
GEOMETRY							
Identify and describe shapes.							
Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.	Ch. 8						
Correctly name shapes regardless of their orientations or overall size.	Ch. 6–8						
Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").	Ch. 6–7						

Math Domains	K	1	2	3	4	5	6
GEOMETRY *(continued)*							
Analyze, compare, create, and compose shapes.							
Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	Ch. 1, 5–8						
Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	Ch. 7						
Compose simple shapes to form larger shapes.	Ch. 6–7						
Reason with shapes and their attributes.							
Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.		Ch. 13					
Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.		Ch. 13					
Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves*, *fourths*, and *quarters*, and use the phrases *half of*, *fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.		Ch. 14					
Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.			Ch. 13				

Math Domains	K	1	2	3	4	5	6
GEOMETRY *(continued)*							
Reason with shapes and their attributes. *(continued)*							
Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.			Ch. 14				
Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words *halves*, *thirds*, *half of*, a *third of*, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.			Ch. 14				
Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.				Ch. 14			
Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.				Ch. 9, 15			
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.							
Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.					Ch. 16		
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.					Ch. 17		
Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.					Ch. 17		

Math Domains	K	1	2	3	4	5	6
GEOMETRY *(continued)*							
Graph points on the coordinate plane to solve real-world and mathematical problems.							
Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x*-axis and *x*-coordinate, *y*-axis and *y*-coordinate).						Ch. 17	
Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.						Ch. 17	
Classify two-dimensional figures into categories based on their properties.							
Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.						Ch. 15	
Classify two-dimensional figures in a hierarchy based on properties.						Ch. 15	
Solve real-world and mathematical problems involving area, surface area, and volume.							
Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.							Ch. 14

Math Domains	K	1	2	3	4	5	6	
GEOMETRY *(continued)*								
Solve real-world and mathematical problems involving area, surface area, and volume. *(continued)*								
Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.								Ch. 15
Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.								Ch. 9
Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.								Ch. 15
STATISTICS AND PROBABILITY								
Develop understanding of statistical variability.								
Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.								Ch. 16
Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.								Ch. 16–17
Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.								Ch. 16

Math Domains	K	1	2	3	4	5	6
STATISTICS AND PROBABILITY *(continued)*							
Summarize and describe distributions.							
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.							Ch. 17
Summarize numerical data sets in relation to their context, such as by reporting the number of observations.							Ch. 16–17
Summarize numerical data sets in relation to their context, such as by describing the nature of the attribute under investigation, including how it was measured and its units of measurement.							Ch. 16–17
Summarize numerical data sets in relation to their context, such as by giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.							Ch. 16–17
Summarize numerical data sets in relation to their context, such as by relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.							Ch. 16–17