

<p>4K Math Curriculum Focal Points</p>	<p>Grades 4K, 5K, 1, 2 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations.</p>
<p>4K Number and Operations and Algebra: Developing an understanding of whole numbers, including concepts of correspondence, counting, cardinality, and comparison.</p> <ul style="list-style-type: none"> • Children recognize and duplicate simple sequential patterns (e.g., square, circle, square, circle....) <p>Geometry: Identifying shapes and describing spatial relationships</p> <p>Measurement: Identifying measurable attributes and comparing objects by using these attributes.</p> <p>Using attributes of objects that have been identified in relation to geometry and measurement for various purposes such as describing, sorting, or comparing.</p>	<p><u>Number and Operations</u></p> <p>4Ka (5K) Count with understanding and recognize “how many” in sets of objects.</p> <p>4Kb (5K) Sort, classify and order objects by size, number and other properties.</p> <p>4Kc Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another.</p> <p>4Kd (5K) Analyze how both repeating and growing patterns are generated.</p> <p>4Ke (5K) Describe qualitative change, such as a student’s growing taller.</p> <p><u>Geometry</u></p> <p>4Kf (5K) Recognize, build, draw, compare, and sort two- and three-dimensional shapes and name two-dimensional.</p> <p>4Kg (5K, 1) Describe attributes and parts of two- and three-dimensional shapes.</p> <p>4Kh (5K) Describe, name, and interpret relative positions in space and apply ideas about relative position.</p> <p>4Ki (5K, 2) Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.</p> <p>4Kj (5K) Find and name locations with simple relationships such as “near to” and in coordinate systems such as maps.</p>	

4K Math Curriculum Focal Points	Grades 4K, 5K, 1, 2 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
	<p><u>Geometry (continued)</u></p> <p>4Kk (5K, 1) Create mental images of geometric shapes using spatial memory and spatial visualization.</p> <p>4Kl (5K, 1) Recognize geometric shapes and structures in the environment and specify their location.</p> <p><u>Measurement</u></p> <p>4Km (5K, 1, 2) Recognize the attributes of length, volume, weight, area, and time.</p> <p>4Kn (5K) Compare and order objects according to these attributes.</p> <p><u>Data Analysis and Probability</u></p> <p>4Ko Sort and classify objects according to their attributes and organize data about the objects.</p>	

5K Math Curriculum Focal Points	Grades 4K, 5K, 1, 2 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
<p>5K Number and Operations and Algebra: Representing, comparing, and ordering whole numbers and joining and separating sets.</p> <ul style="list-style-type: none"> Identify, duplicate, and extend simple number pattern and sequential and growing patterns 	<p><u>Number and Operations</u></p> <p>5Ka (4K) Count with understanding and recognize “how many” in sets of objects.</p> <p>5Kb (1) Develop understanding of the relative position and magnitude of whole numbers and or ordinal and cardinal numbers and their connections.</p> <p>5Kc (1) Connect number words and numerals to the</p>	

<p>as preparation for creating rules that describe relationships.</p> <p>Geometry: Describing shapes and space</p> <p>Measurement and Algebra: Ordering objects by measurable attributes</p> <ul style="list-style-type: none"> Sort objects and use one or more attributes to solve problems 	<p>quantities they represent, using various physical models and representations.</p> <p><u>Algebra</u></p> <p>5Kd (4K) Analyze how both repeating and growing patterns are generated.</p> <p>5Ke (1, 2) Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.</p> <p>5Kf (4K, 1) Recognize, build, draw, compare, and sort two- and three-dimensional shapes and name two-dimensional shapes.</p> <p>5Kg (4K, 1) Describe attributes and parts of two- and three-dimensional shapes.</p> <p>5Kh (4K) Describe, name, and interpret direction and distance in navigating space and apply ideas about direction and distance.</p> <p>5Ki (4K) Find and name locations with simple relationships such as “near to” and in coordinate systems such as maps (this use of coordinate systems is not identified as focal point or connection)</p> <p>5Kj (4K, 1) Create mental images of geometric shapes using special memory and spatial visualization.</p>	
<p>5K Math Curriculum Focal Points</p>	<p>Grades 4K, 5K, 1, 2 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Algebra (con’t)</u></p> <p>5Kl (4K, 1) Recognize geometric shapes and structures in the environment and specify their location.</p> <p>5Km (4K) Sort, classify, and order objects by size, number and other properties.</p> <p>5Kn (4K) Describe quantitative change, such as student’s growing taller.</p> <p><u>Measurement</u></p>	

	<p>5Ko (4K, 1, 2) Recognize the attributes of length, volume, weight, area, and time</p> <p>5Kp (4K) Compare and order objects according to those attributes.</p> <p><u>Data Analysis and Probability</u></p> <p>5Kq (4K) Sort and classify objects according to their attributes and organize data about the objects</p> <p>5Kr (1) Describe parts of the data and the set of data as a whole to determine what the data show.</p> <p>5Ks Pose questions and gather data according to their attributes and organize data about the objects.</p> <p>Critical Concepts That Are Not Focal Points</p> <p>5Kt Develop an understanding of time and use of time relationship (e.g., morning, afternoon, later, earlier, passage of time, etc.)</p>
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1st Grade Math Curriculum Focal Points	Grades 4K, 5K, 1, 2 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
<p>Number and Operations: Developing understandings of addition and subtraction and strategies for basic addition facts and related subtraction facts(to 20).</p> <ul style="list-style-type: none"> • Develop strategies for adding and subtracting whole numbers • Understand the connections between counting and the operations of addition and subtraction 	<p><u>Number and Operations</u></p> <p>1.a (5K) Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections.</p> <p>1.b (2) Develop a sense of whole numbers (to 20) and represent and use them in flexible ways, including relating, composing, and decomposing numbers (e.g., family facts [1, 3, 4]) (no regrouping until Grade 2).</p> <p>1.c (5K) Connect number words and numerals to the quantities they represent, using various physical models and representations.</p> <p>1.d Understand various meanings of addition and subtraction of whole numbers and the relationship</p>	

<ul style="list-style-type: none"> Use properties of addition (commutativity and associativity) <p>Understand the sequential order of the counting numbers and their relative magnitudes and represent numbers on a number line.</p>	<p>between the two operations.</p> <p>1.e Understand effects of adding and subtracting whole numbers.</p> <p>Algebra</p> <p>1.f Illustrate general principles and properties of operations such as commutative, associative, identity.</p> <p>1.g (5K) Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.</p> <p>1.h (2) Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols.</p> <p>1.i (2) Describe quantitative change, such as a student’s growing two inches in one year.</p>	
<p>1st Grade Math Curriculum Focal Points</p>	<p>Grades 4K, 5K, 1, 2 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>Number and Operations and Algebra: Developing an understanding of whole number relationships, including grouping in tens and ones.</p> <ul style="list-style-type: none"> Compare and order whole numbers (at least to 100) Compare and order whole numbers (10-100) in terms of groups of tens and ones. <p>Geometry: Composing and decomposing geometric shapes.</p>	<p>Geometry</p> <p>1.j (4K, 5K) Recognize, build, draw, compare and sort two- and three-dimensional shapes and name two-dimensional shapes.</p> <p>1.k (4K) Describe attributes and parts of two- and three-dimensional shapes.</p> <p>1.l Investigate and predict the results of putting together and taking apart two- and three-dimensional shapes.</p> <p>1.m Recognize and create shapes that have symmetry.</p> <p>1.n (4K, 5K) Create mental images of geometric shapes using spatial memory and spatial visualization.</p> <p>1.o Recognize and represent shapes from different perspectives.</p> <p>1.p (5K) Recognize geometric shapes and structures</p>	

<ul style="list-style-type: none"> • Compose and decompose plane and solid figures (2 isosceles triangles = rhombus, etc.) • Initial understanding of such properties as congruence and symmetry. • Describe geometric attributes and properties. 	<p>in the environment and specify their location.</p> <p><u>Measurement</u></p> <p>1.q (4K, 5K) Recognize the attributes of length, volume, weight, area, and time.</p>	
<p>1st Grade Math Curriculum Focal Points</p>	<p>Grades 4K, 5K, 1, 2 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Data Analysis and Probability</u></p> <p>1.r (4K, 5K) Sort and classify objects according to their attributes and organize data about the objects.</p> <p>1.s Represent data using concrete objects, pictures, and graphs.</p> <p>1.t (5K) Describe parts of the data and the set of data as a whole to determine what the data show.</p> <p>Critical Concepts That Are Not Focal Points</p> <p>Money</p> <p>1.u Sort, classify, and name coins and denote their values.</p> <p>Time</p> <p>1.v Understand measure of time to include months of the year, days of the week, and hours of the day.</p> <p>1.w Tell time to nearest hour using analog and digital clocks.</p>	

Curriculum Focal Points 2nd Grade Math	Grades 4K, 5K, 1, 2 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
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<p>Number and Operations: Developing an understanding of the base-ten numeration system and place-value concepts (to 1000).</p> <ul style="list-style-type: none"> Counting in units and multiples of hundreds, tens, and ones, as well as a grasp of number relationships. Comparing and ordering numbers. Understanding multidigit numbers in terms of place value (853 as 8 hundreds, 5 tens, 3 ones, etc.) <p>Number and Operations and Algebra: Developing quick recall of addition facts and related subtraction facts and fluency with multidigit addition and subtraction.</p> <ul style="list-style-type: none"> Develop, discuss, and use efficient, accurate, and generalizable methods to add and subtract multidigit whole numbers. Develop fluency with efficient procedures, including standard algorithms, for adding and subtracting whole numbers. 	<p><u>Number and Operations</u></p> <p>2.a Use multiple models to develop initial understandings of place value and the base-ten number system (e.g. renaming, regrouping).</p> <p>2.b (1) Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers (e.g., family [5, 9, 14]).</p> <p>2.c Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally.</p> <p>2.d Develop and use strategies for whole-number computations, with a focus on addition and subtraction.</p> <p>2.e Develop fluency with basic number combinations for addition and subtraction.</p> <p>2.f Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators.</p> <p><u>Algebra</u></p> <p>2.g (5K, 1) Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations.</p> <p>2.h (1) Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols.</p> <p>2.i (1) Describe quantitative change, such as a student’s growing two inches in one year.</p>
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Curriculum Focal Points 2nd Grade Math	Grades 4K, 5K, 1, 2 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing
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		representations
<p>Measurement: Developing an understanding of linear measurement and facility in measuring lengths.</p> <ul style="list-style-type: none"> Standard units of measure (centimeter and inch), and the inverse relationship between the size of a unit and the number of units. 	<p><u>Geometry</u></p> <p>2.j (4K, 5K) Describe, name, and interpret directions and distances in navigating space and apply ideas about direction and distance.</p> <p>2.k Relate ideas in geometry to ideas in number and measurement.</p> <p><u>Measurement</u></p> <p>2.1 (4K, 5K, 1) Recognize the attributes of length, volume, weight, area, and time.</p> <p>2.m Understand how to measure using nonstandard and standard units.</p> <p>2.n Select an appropriate unit and tool for the attribute being measured.</p> <p>2.o Measure with multiple copies of units of the same size, such as paper clips laid end to end.</p> <p>2.p Use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meter stick.</p> <p>2.q Use tools to measure.</p> <p>2.r Develop common references for measures to make comparisons and estimates for units or standard and metric.</p>	
<p>Curriculum Focal Points 2nd Grade Math</p>	<p>Grades 4K, 5K, 1, 2 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>

	<p><u>Data Analysis and Probability</u></p> <p>2.s (4K) Represent measurement data using concrete objects, pictures, and graphics.</p> <p><u>Critical Concepts That Are Not Focal Points</u></p> <p>Money</p> <p>2.t Count mixed collections of coins up to \$1.00</p> <p>Time</p> <p>2.u Demonstrate an understanding of time relationships (e.g. how many minutes in an hour, days in a week, and months in a year)</p> <p>2.v Tell time in increments of five minutes using analog and digital clocks.</p>
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3rd Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
<p>Number and Operations: Develop an understanding of multiplication and division strategies for basic multiplication facts and related division facts.</p> <ul style="list-style-type: none"> Use properties of addition and multiplication (e.g., commutative, associative, and distributive properties) to multiply whole numbers 	<p><u>Number and Operations</u></p> <p>3.a (4) Understand the place value structure of the base-ten number system and be able to represent and compare whole numbers up to 10,000 and decimals.</p> <p>3.b (4, 5) Recognize equivalent representations for the same number and generate them by decomposing and composing numbers (e.g., fact family [8, 2, 4]).</p> <p>3.c Develop understanding of fractions as parts of unit wholes, as part of a collection, as locations on number lines.</p> <p>3.d (4) Use models, benchmarks, and equivalent</p>	

	<p>forms to judge the size of fractions.</p> <p>3.e Understand various meanings of multiplication and division. Multiplication is repeated addition of same number, division is repeated subtraction of same number (e.g., 2 sets of 3 or 3 sets of 2).</p> <p>3.f (4, 5) Understand the effects of multiplying and dividing whole numbers. Interpreting remainders in division. Applying this to real life situations.</p> <p>3.g (4, 5) Identify and use relationships between operations, such as the distributive property of multiplication over addition.</p> <p>3.h (4, 5) Develop fluency with basic number combinations for multiplication and division, and use these combinations to mentally compute related problems, such as 30×50.</p> <p>3.i (4, 5) Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.</p>	
<p>3rd Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>Number and Operations and Algebra: Develop an understanding of fractions and fraction equivalence.</p> <ul style="list-style-type: none"> • Solve problems that involve comparing and ordering fractions. • Understand meaning and uses of fractions to represent parts of a whole, parts of a set, or points or distances on a number line. 	<p><u>Numbers and Operations (cont'd)</u></p> <p>3.j (4, 5) Develop and use strategies to estimate the results of whole-number computations and to judge the reasonableness of such results.</p> <p>3.k (4, 5) Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.</p> <p><u>Algebra</u></p> <p>3.1 (4, 5) Describe, extend, and make generalizations about geometric and numeric patterns.</p>	

	<p>3.m (4, 5) Represent and analyze patterns and functions, using words, tables, and graphs.</p> <p>3.n (4, 5) Identify such properties as commutative, associative, and distributive and use them to compute with whole numbers.</p> <p>3.o (4, 5) Express mathematical relationships using equations.</p> <p>3.p (4, 5) Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions</p>	
<p>3rd Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>Geometry: Describe and analyze properties of two-dimensional shapes.</p> <ul style="list-style-type: none"> • Investigate, describe, and reason about decomposing, combining, and transforming polygons to make other polygons. • Describe, analyze, compare, and classify two-dimensional shapes by their sides and angles to connect attributes to definition of shapes. 	<p><u>Geometry</u></p> <p>3.q (4, 5) Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes.</p> <p>3.r (4, 5) Classify two- and three-dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.</p> <p>3.s (4, 5) Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.</p> <p>3.t (4) Explore congruence and similarity.</p> <p>3.u (5) Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.</p> <p>3.v Make and use coordinate systems to specify locations and to describe paths.</p>	

	<p>3.w (5) Build and draw geometric objects.</p> <p>3.x (5) Create and describe mental images of objects, patterns, and paths.</p> <p>3.y (4, 5) Use geometric models to solve problems in other areas of mathematics, such as number and measurement.</p> <p>3.z (4, 5) Use geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life.</p>	
<p>3rd Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Measurement</u></p> <p>3.aa (4) Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.</p> <p>3.bb (4, 5) Carry out simple unit conversions, such as from centimeters to meters, within a system of measurement.</p> <p>3.cc (4) Explore what happens to measurements of a two-dimensional shape such as its perimeter and area when the shape is changed in some way.</p> <p>3.dd (4, 5) Develop strategies for estimating the perimeters, areas, and volumes of irregular shapes.</p> <p>3.ee (4, 5) Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.</p> <p>3.ff (4, 5) Select and use benchmarks to estimate measurements.</p>	

	<u>Data Analysis and Probability</u>	
	<p>3.gg (4, 5) Design investigations to address a question and consider how data-collection methods affect the nature of the data set.</p> <p>3.hh (4, 5) Collect data using observations, surveys, and experiments.</p> <p>3.ii (4, 5) Represent data using tables and graphs such as line plots, bar graphs, and line graphs.</p>	
3rd Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
	<u>Data Analysis and Probability (cont'd)</u>	
	<p>3.jj (4, 5) Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed.</p> <p>3.kk (4, 5) Compare different representations of the same data and evaluate how well each representation shows important aspects of the data – average (mean).</p> <p>3.ll (4, 5) Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.</p>	

4th Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
Number and Operations: Develop quick recall of multiplication facts and related division facts &	<u>Number and Operations</u>	
	4.a (3) Understand the place value structure of the base-ten number system and be able to represent and	

<p>fluency with whole number multiplication.</p> <ul style="list-style-type: none"> Apply understandings of models for multiplication, (i.e., equal-sized groups, arrays, area models, etc.) place value, properties of operations as they develop, discuss and use efficient, accurate, and generalizable methods to multiply multidigit whole numbers. <p>Number and Operations and Algebra: Develop an understanding of decimals, including the connections between fractions and decimals.</p> <ul style="list-style-type: none"> Relate understanding of fractions to reading and writing decimals that are greater than or less than 1, identifying equivalent decimals, comparing and ordering decimals, and estimating decimal or fractional amounts in problem solving. 	<p>compare whole numbers up to 1,000,000 and decimals .</p> <p>4.b (3, 5) Recognize equivalent representations for the same number and generate them by decomposing and composing numbers (e.g. fact family [8, 4, 2])</p> <p>4.c (3) Use models, benchmarks, and equivalent forms to judge the size of fractions.</p> <p>4.d (3) Recognize and generate (convert) equivalent forms of commonly used fractions and decimals. Recognize the relationship of fractions, decimals, and percents.</p> <p>4.e (3, 5) Understand the effects of multiplying and dividing whole numbers.</p> <p>4.f (3, 5) Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.</p> <p>4.g (3, 5) Understand and use properties of operations, such as the distributive property of multiplication over addition.</p> <p>4.h (3, 5) Develop fluency with basic number combinations for multiplication and division, and use these combinations to mentally compute related problems, such as 40 x 50.</p> <p>4.i (3, 5) Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.</p>	
<p>4th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Numbers and Operations (cont'd)</u></p> <p>4.j (3, 5) Develop and use strategies to estimate the results of whole-number computations and to judge the</p>	

	<p>reasonableness of such results.</p> <p>4.k (3, 5) Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.</p> <p><u>Algebra</u></p> <p>4.1 (3, 5) Describe, extend, and make generalizations about geometric and numeric patterns..</p> <p>4.m (3, 5) Represent and analyze patterns and functions, using words, tables, and graphs.</p> <p>4.n (3, 5) Identify such properties as commutative, associative, and distributive and use them to compute with whole numbers.</p> <p>4.o (3, 5) Express mathematical relationships using equations.</p> <p>4.p (3, 5) Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions</p>	
<p>4th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>3. Measurement: Develop and understanding of area and determining the area of two-dimensional shapes.</p> <ul style="list-style-type: none"> Select appropriate units, strategies, and tools for solving problems that involve 	<p><u>Geometry</u></p> <p>4.q (3, 5) Identify, compare, and analyze attributes of two- and three-dimensional shapes and develop vocabulary to describe the attributes.</p> <p>4.r (3, 5) Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.</p>	

<p>estimating or measuring area.</p>	<p>4.s (3) Explore congruence and similarity.</p> <p>4.t Describe location and movement using common language and geometric vocabulary.</p> <p>4.u Predict and describe the results of sliding, flipping, and turning two-dimensional shapes.</p> <p>4.v Describe a motion or a series of motions that will show that two shapes are congruent.</p> <p>4.w (5) Identify and describe line and rotational symmetry in two- and three-dimensional shapes and designs.</p> <p>4.x (3, 5) Use geometric models to solve problems in other areas of mathematics, such as number and measurement.</p> <p>4.y (3, 5) Recognize geometric ideas and relationships and apply them to other disciplines and to problems that arise in the classroom or in everyday life.</p>	
<p>4th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Measurement</u></p> <p>4.z (3, 5) Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.</p> <p>4.aa (5) Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems.</p> <p>4.bb (3, 5) Carry out simple unit conversions, such as from centimeters to meters, within a system of measurement.</p>	

	<p>4.cc (3) Explore what happens to measurements of a two-dimensional shape such as its perimeter and area when the shape is changed in some way.</p> <p>4.dd (3, 5) Develop strategies for estimating the perimeters, areas, and volumes of irregular shapes.</p> <p>4.ee (3, 5) Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and the size of angles.</p> <p>4.ff (3, 5) Select and use benchmarks to estimate measurements.</p> <p>4.gg Develop, understand, and use formulas to find the area of rectangles and related triangles and parallelograms.</p>	
<p>4th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Data Analysis and Probability</u></p> <p>4.hh (3, 5) Design investigations to address a question and consider how data-collection methods affect the nature of the data set.</p> <p>4.ii (3, 5) Collect data using observations, surveys, and experiments.</p> <p>4.jj (3, 5) Represent data using tables and graphs such as line plots, bar graphs, and line graphs.</p> <p>4.kk (3, 5) Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed – mean & media.</p>	

	<p>4.ll (3, 5) Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.</p> <p>4.mm (3, 5) Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.</p>
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5th Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
<p>Numbers and Operations and Algebra: Developing an understanding of and fluency with division of whole numbers.</p> <p>Develop fluency with efficient procedures, including the standard algorithm, for dividing whole numbers, understand why the procedures work (on the basis of place value and properties and operations), and use them to solve problems</p>	<p><u>Number and Operations</u></p> <p>5.a (3, 4) Recognize equivalent representation for the same number and generate them by decomposing and composing numbers(e.g. fact family ([8, 4, 2])).</p> <p>5.b (4) Recognize and generate equivalent forms of commonly used fractions and decimals.</p> <p>5.c Describe classes of numbers according to characteristics such as the nature of their factors.</p> <p>5.d (3, 4) Understand effects of multiplying and dividing whole numbers.</p> <p>5.e (3, 4) Identify and use relationships between operations, such as division as the inverse of multiplication, to solve problems.</p> <p>5.f (3, 4) Understand and use properties of operations, such as the distributive property of multiplication over addition.</p> <p>5.g (3, 4) Develop fluency with basic number combinations for multiplication and division and use these combinations to mentally compute related problems, such as 30 x 50.</p>	

	<p>5.h (3, 4) Develop fluency in adding, subtracting, multiplying, and dividing whole numbers.</p> <p>5. i (3, 4) Develop and use strategies to estimate the results of whole number computations and to judge the reasonableness of such results</p>	
<p>5th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>Numbers and Operations: Develop an understanding of and fluency with addition and subtraction of fractions and decimals.</p> <ul style="list-style-type: none"> • Apply their understanding of decimal models, place value, and properties to add and subtract • Develop fluency with standard procedures for adding and subtracting fractions and decimals • Make reasonable estimates of fraction and decimal sums and differences 	<p><u>Numbers and Operations (continued)</u></p> <p>5.j Develop and use strategies to estimate computations involving fractions and decimals in situations relevant to students’ experience.</p> <p>5.k Use visual models, benchmarks, and equivalent forms to add and subtract commonly used fractions and decimals.</p> <p>5.l (3, 4) Select appropriate methods and tools for computing with whole numbers from among mental computation, estimation, calculators, and paper and pencil according to the context and nature of the computation and use the selected method or tool.</p> <p><u>Algebra</u></p> <p>5.m (3, 4) Describe, extend and make generalizations about geometric and numeric patterns.</p> <p>5.n (3, 4) Represent and analyze patterns and functions, using words, tables, and graphs.</p> <p>5.o (3, 4) Identify such properties as commutative, associative, and distributive and use them to compute whole numbers.</p> <p>5.p (3, 4) Express mathematical relationships using equations.</p>	

	<p>5.q (3, 4) Model problem situations with objects and use representations such as graphs, tables, and equations to draw conclusions.</p>	
<p>5th Grade Math Curriculum Focal Points</p>	<p>Grades 3, 4, 5 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
<p>Geometry and Measurement and Algebra: Describing three-dimensional shapes and analyzing their properties, including volume and surface area.</p> <ul style="list-style-type: none"> • Decompose three-dimensional shapes and find surface areas and volume of prisms <p>Measure necessary attributes of shapes to use area formulas to solve problems</p>	<p><u>Geometry</u></p> <p>5.r (3, 4) Identify, compare, and analyze attributes of two-dimensional and three dimensional shapes and develop vocabulary to describe the attributes.</p> <p>5.s (3) Classify two and three –dimensional shapes according to their properties and develop definitions of classes of shapes such as triangles and pyramids.</p> <p>5.t (3, 4) Investigate, describe, and reason about the results of subdividing, combining, and transforming shapes.</p> <p>5.u (3) Make and test conjectures about geometric properties and relationships and develop logical arguments to justify conclusions.</p> <p>5.v Find the distance between points along horizontal and vertical lines of a coordinate system.</p> <p>5.w (4) Identify and describe line and rotational symmetry in two and three dimensional shapes and designs.</p> <p>5.x (3) Build and draw geometric objects.</p> <p>5.y (3) Create and describe mental images of objects, patterns, and paths.</p> <p>5.z Identify and draw a two-dimensional representation of a three dimensional object.</p> <p>5.aa (3, 4) Use geometric models to solve problems in other areas of mathematics, such as number and</p>	

	measurement.	
5th Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
	<p><u>Measurement</u></p> <p>5.bb (3, 4) Understand such attributes as length, area, weight, volume, and size of angle and select the appropriate type of unit for measuring each attribute.</p> <p>5.cc (4) Understand the need for measuring with standard units and become familiar with standard units in the customary and metric systems.</p> <p>5.dd (3, 4) Carry out simple unit conversions, such as from cm to m, within a system of measurement.</p> <p>5.ee Understand that measurements are approximations and understand how differences in units affect precision.</p> <p>5.ff (3, 4) Develop strategies for estimating the perimeters, areas, and volumes of irregular shapes.</p> <p>5.gg (3, 4) Select and apply appropriate standard units and tools to measure length, area, volume, weight, time, temperature, and size of angles.</p> <p>5.hh (3, 4) Select and use benchmarks to estimate measurements.</p> <p>5.ii Develop strategies to determine the surface areas and volumes of rectangular solids.</p>	
5th Grade Math Curriculum Focal Points	Grades 3, 4, 5 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning,

		communication, making connections, and designing and analyzing representations
	<p><u>Data Analysis and Probability</u></p> <p>5.jj (3, 4) Design investigations to address a question and consider how data collection methods affect the nature of the data set.</p> <p>5.kk (3, 4) Collect data using observations, surveys, and experiments.</p> <p>5.ll (3, 4) Represent data using tables and graphs such as line plots, bar graphs, and line graphs.</p> <p>5.mm Recognize the different kinds of data can be represented in different ways, e.g., choosing to use a pie or bar graph, etc.</p> <p>5.nn (3, 4) Describe the shape and important features of a set of data and compare related data sets, with an emphasis on how the data are distributed – mean, median, mode, and range.</p> <p>5.oo (3, 4) Compare different representations of the same data and evaluate how well each representation shows important aspects of the data.</p> <p>5.pp (3, 4) Propose and justify conclusions and predictions that are based on data and design studies to further investigate the conclusions or predictions.</p> <p>5.qq Recognize the differences in representing categorical and numerical data.</p>	

Curriculum Focal Points 6th Grade Math	Grades 6, 7, 8 Strategies	Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations
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<p>Number and Operations: Developing an understanding of and fluency with multiplication and division of fractions and decimals.</p>	<p><u>Number and Operations</u></p> <p>6.a (7, 8) Work flexibly with fractions, decimals, and percents to solve problems.</p> <p>6.b (7) Compare and order fractions, decimals, and percents efficiently and find their approximate locations on a number line.</p> <p>6.c (7) Understand and use ratios and proportions to represent quantitative relationships.</p> <p>6.d (7, 8) Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers.</p> <p>6.e (7, 8) Use the associative and commutative properties of addition and multiplication and the distributive property of multiplication over addition to simplify computations with integers, fractions, and decimals.</p> <p>6.f (7, 8) Understand and use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems.</p> <p>6.g (7, 8) Select appropriate methods and tools for computing with fractions and decimals from among mental computation, estimation, calculators or computers, and paper and pencil, depending on the situation, and apply the selected methods.</p> <p>6.h (7, 8) Develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use.</p> <p>6.i Develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results.</p>	
<p>Curriculum Focal Points 6th Grade Math</p>	<p>Grades 6, 7, 8 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>

<p>Number and Operations: Connecting ratio and rate to multiplication and division.</p> <p>Algebra: Writing, interpreting, and using mathematical expressions and equations.</p>	<p><u>Numbers and Operations (continued)</u></p> <p>6.j (8) Develop, analyze, and explain methods for solving problems involving proportions, such as scaling and finding equivalent ratios.</p> <p><u>Algebra</u></p> <p>6.k (7, 8) Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and when possible, symbolic rules.</p> <p>6.l (7, 8) Develop an initial conceptual understanding of different uses of variables.</p> <p>6.m (7, 8) Use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships.</p> <p>6.n (7, 8) Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations.</p> <p>6.o (7, 8) Model and solve contextualized problems using various representations, such as graphs, tables, and equations.</p> <p><u>Geometry</u></p> <p>6.p (8) Precisely describe, classify, and understand relationships among types of two- and three-dimensional objects using their defining properties.</p> <p>6.q (8) Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life.</p>	
<p>Curriculum Focal Points 6th Grade Math</p>	<p>Grades 6, 7, 8 Strategies</p>	<p>Address these Focal Points in contexts of the Process Standards: problem solving, reasoning, communication, making connections, and designing and analyzing representations</p>
	<p><u>Measurement</u></p> <p>6.r (7) Understand both metric and customary systems of measurement.</p>	

	<p>6.s (7) Understand relationships among units and convert from one unit to another within the same system.</p> <p>6.t (7, 8) Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.</p> <p>6.u (7) Solve problems involving scale factors, using ratio and proportion.</p> <p>6.v (7, 8) Solve simple problems involving rates and derived measurements for such attributes as velocity and density.</p>
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