



Grade 5 Grade-Level Goals

CCSS EDITION

Content Strand: Number and Numeration		
Program Goal	Content Thread	Grade-Level Goal
Understand the Meanings, Uses, and Representations of Numbers	<i>Place value and notation</i>	Goal 1 Read and write whole numbers and decimals; identify places in such numbers and the values of the digits in those places; use expanded notation to represent whole numbers and decimals.
	<i>Meanings and uses of fractions</i>	Goal 2 Solve problems involving percents and discounts; describe and explain strategies used; identify the unit whole in situations involving fractions.
	<i>Number theory</i>	Goal 3 Identify prime and composite numbers; factor numbers; find prime factorizations.
Understand Equivalent Names for Numbers	<i>Equivalent names for whole numbers</i>	Goal 4 Use numerical expressions involving one or more of the basic four arithmetic operations, grouping symbols, and exponents to give equivalent names for whole numbers; convert between base-10, exponential, and repeated-factor notations.
	<i>Equivalent names for fractions, decimals, and percents</i>	Goal 5 Use numerical expressions to find and represent equivalent names for fractions, decimals, and percents; use and explain multiplication and division rules to find equivalent fractions and fractions in simplest form; convert between fractions and mixed numbers; convert between fractions, decimals, and percents.
Understand Common Numerical Relations	<i>Comparing and ordering numbers</i>	Goal 6 Compare and order rational numbers; use area models, benchmark fractions, and analyses of numerators and denominators to compare and order fractions and mixed numbers; describe strategies used to compare fractions and mixed numbers.





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Content Strand: Operations and Computation		
Program Goal	Content Thread	Grade-Level Goal
Compute Accurately	<i>Addition and subtraction procedures</i>	Goal 1 Use manipulatives, mental arithmetic, paper-and-pencil algorithms and models, and calculators to solve problems involving the addition and subtraction of whole numbers, decimals, and signed numbers; describe the strategies used and explain how they work.
	<i>Multiplication and division facts</i>	Goal 2 Demonstrate automaticity with multiplication and division fact extensions.
	<i>Multiplication and division procedures</i>	Goal 3 Use manipulatives, mental arithmetic, paper-and-pencil algorithms and models, and calculators to solve problems involving the multiplication of whole numbers and decimals and the division of multidigit whole numbers and decimals by whole numbers; express remainders as whole numbers or fractions as appropriate; describe the strategies used and explain how they work.
	<i>Procedures for addition and subtraction of fractions</i>	Goal 4 Use mental arithmetic, paper-and-pencil algorithms and models, and calculators to solve problems involving the addition and subtraction of fractions and mixed numbers; describe the strategies used and explain how they work.
	<i>Procedures for multiplication and division of fractions</i>	Goal 5 Use area models, mental arithmetic, paper-and-pencil algorithms and models, and calculators to solve problems involving the multiplication of fractions and mixed numbers; use visual models, paper-and-pencil methods, and calculators to solve problems involving the division of fractions; describe the strategies used.
Make Reasonable Estimates	<i>Computational estimation</i>	Goal 6 Make reasonable estimates for whole number and decimal addition, subtraction, multiplication, and division problems and fraction and mixed number addition and subtraction problems; explain how the estimates were obtained.
Understand Meanings of Operations	<i>Models for the operations</i>	Goal 7 Use repeated addition, arrays, area, and scaling to model multiplication and division; use ratios expressed as words, fractions, percents, and with colons; solve problems involving ratios of parts of a set to the whole set.



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Content Strand: Data and Chance		
Program Goal	Content Thread	Grade-Level Goal
Select and Create Appropriate Graphical Representations of Collected or Given Data	<i>Data collection and representation</i>	Goal 1 Collect and organize data or use given data to create graphic displays with reasonable titles, labels, keys, and intervals.
Analyze and Interpret Data	<i>Data analysis</i>	Goal 2 Use the maximum, minimum, range, median, mode, and mean and graphs to ask and answer questions, draw conclusions, and make predictions.
Understand and Apply Basic Concepts of Probability	<i>Qualitative probability</i>	Goal 3 Describe events using certain, very likely, likely, unlikely, very unlikely, impossible and other basic probability terms; use more likely, equally likely, same chance, 50-50, less likely, and other basic probability terms to compare events; explain the choice of language
	<i>Quantitative probability</i>	Goal 4 Predict the outcomes of experiments, test the predictions using manipulatives, and summarize the results; compare predictions based on theoretical probability with experimental results; use summaries and comparisons to predict future events; express the probability of an event as a fraction, decimal, or percent.



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Content Strand: Measurement and Reference Frames		
Program Goal	Content Thread	Grade-Level Goal
Understand the Systems and Processes of Measurement; Use Appropriate Techniques, Tools, Units, and Formulas in Making Measurements	<i>Length, weight, and angles</i>	Goal 1 Estimate length with and without tools; measure length with tools to the nearest $\frac{1}{8}$ inch and millimeter; estimate the measure of angles with and without tools; use tools to draw angles with given measures.
	<i>Area, perimeter, volume, and capacity</i>	Goal 2 Describe and use strategies to find the perimeter of polygons and the area of circles; choose and use appropriate methods, including formulas, to find the areas of rectangles, parallelograms, and triangles, and the volume of a prism; define pi as the ratio of a circle's circumference to its diameter.
	<i>Units and systems of measurement</i>	Goal 3 Describe relationships among U.S. customary units of measure and among metric units of measure.
Use and Understand Reference Frames	<i>Coordinate systems</i>	Goal 4 Use ordered pairs of numbers to name, locate, and plot points in all four quadrants of a coordinate grid.





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Content Strand: Geometry		
Program Goal	Content Thread	Grade-Level Goal
Investigate Characteristics and Properties of Two- and Three-Dimensional Geometric Shapes	<i>Plane and solid figures</i>	Goal 1 Identify, describe, compare, name, and draw right, acute, obtuse, straight, and reflex angles; determine angle measures in vertical and supplementary angles and by applying properties of sums of angle measures in triangles and quadrangles.
	<i>Plane and solid figures</i>	Goal 2 Describe, compare, and classify plane and solid figures using appropriate geometric terms; identify congruent figures and describe their properties.
Apply Transformations and Symmetry in Geometric Situations	<i>Transformations and symmetry</i>	Goal 3 Identify, describe, and sketch examples of reflections, translations, and rotations.





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Content Strand: Patterns, Functions, and Algebra		
Program Goal	Content Thread	Grade-Level Goal
Understand Patterns and Functions	<i>Patterns and functions</i>	Goal 1 Extend, describe, and create numeric patterns; describe rules for patterns and use them to solve problems; write rules for functions involving the four basic arithmetic operations; represent functions using words, symbols, tables, and graphs and use those representations to solve problems.
Use Algebraic Notation to Represent and Analyze Situations and Structures	<i>Algebraic notation and solving number sentences</i>	Goal 2 Determine whether number sentences are true or false; solve open number sentences and explain the solutions; use a letter variable to write an open sentence to model a number story; use a pan-balance model to solve linear equations in one unknown.
	<i>Order of operations</i>	Goal 3 Evaluate numeric expressions containing grouping symbols and nested grouping symbols; insert grouping symbols and nested grouping symbols to make number sentences true; describe and use the precedence of multiplication and division over addition and subtraction.
	<i>Properties of the arithmetic operations</i>	Goal 4 Describe and apply properties of arithmetic.

