Everyday Mathematics

Grade 4   Grade-Level Goals   **3rd Edition**

Content Strand: Number and Numeration		
Program Goal	**Content Thread**	**Grade-Level Goals**
Understand the Meanings, Uses, and Representations of Numbers	*Place value and notation*	Goal 1 Read and write whole numbers up to 1,000,000,000 and decimals through thousandths; identify places in such numbers and the values of the digits in those places between whole numbers and decimals represented in words and in base-10 notation.
	Meanings and uses of fractions	Goal 2 Read, write, and model fractions; solve problems involving fractional parts of a region or a collection; describe and explain strategies used; given a fractional part of a region or a collection, identify the unit whole.
	Number theory	Goal 3 Find multiples of whole numbers less than 10; find whole-number factors of numbers.
Understand Equivalent Names for Numbers	*Equivalent names for whole numbers*	Goal 4 Use numerical expressions involving one or more of the basic four arithmetic operations and grouping symbols to give equivalent names for whole numbers.
	Equivalent names for fractions, decimals, and percents	Goal 5 Use numerical expressions to find and represent equivalent names for fractions and decimals; use and explain a multiplication rule to find equivalent fractions; rename fourths, fifths, tenths, and hundredths as decimals and percents.
Understand Common Numerical Relations	*Comparing and ordering numbers*	Goal 6 Compare and order whole numbers up to 1,000,000,000 and decimals through thousandths; compare and order integers between -100 and 0; use area models, benchmark fractions, and analyses of numerators and denominators to compare and order fractions.

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THE UNIVERSITY OF
CHICAGO
SCHOOL MATHEMATICS PROJECT

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Content Strand: Operations and Computation		
Program Goal	**Content Thread**	**Grade-Level Goals**
Computes Accurately	*Addition and subtraction facts*	Goal 1 Demonstrate automaticity with basic addition and subtraction facts and fact extensions.
	Addition and subtraction procedures	Goal 2 Use manipulatives mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the addition and subtraction of whole numbers and decimals through hundredths; describe the strategies used and explain how they work.
	Multiplication and division facts	Goal 3 Demonstrate automaticity with multiplication facts through 10 * 10 and proficiency with related division facts; use basic facts to compute fact extensions such as 30 * 60.
	Multiplication and division procedures	Goal 4 Use mental arithmetic, paper-and-pencil algorithms, and calculators to solve problems involving the multiplication of multidigit whole numbers by 2-digit whole numbers and the division of multidigit whole numbers by 1-digit whole numbers; describe the strategies used and explain how they work.
	Procedures for addition and subtraction of fractions	Goal 5 Use manipulatives, mental arithmetic, and calculators to solve problems involving the addition and subtraction of fractions with like and unlike denominators; describe the strategies used.

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Content Strand: Operations and Computation (continued)		
Program Goal	**Content Thread**	**Grade-Level Goals**
Make Reasonable Estimates	*Computational estimation*	Goal 6 Make reasonable estimates for whole number and decimal addition and subtraction problems and whole number multiplication and division problems; explain how the estimates were obtained.
Understand Meanings of Operations	*Models for the operations*	Goal 7 Use repeated addition, skip counting, arrays, area, and scaling to model multiplication and division.

Content Strand: Data and Chance		
Program Goal	**Content Thread**	**Grade-Level Goals**
Select and Create Appropriate Graphical Representations of Collected or Given Data	*Data collection and representation*	Goal 1 Collect and organize data or use given data to create charts, tables, bar graphs, line plots, and line graphs.
Analyze and Interpret Data	*Data analysis*	Goal 2 Use the maximum, minimum, range, median, mode, and graphs to ask and answer questions, draw conclusions, and make predictions.
Understand and Apply Basic Concepts of Probability	*Qualitative probability*	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.
	Quantitative probability	Goal 4 Predict the outcomes of experiments and test the predictions using manipulatives; summarize the results and use them to predict future events; express the probability of an event as a fraction.

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Content Strand: Measurement and Reference Frames		
Program Goal	**Content Thread**	**Grade-Level Goals**
Understand the Systems and Processes of Measurement; Use Appropriate Techniques, Tools, Units, and Formulas in Making Measurements	*Length, weight, and angles*	Goal 1 Estimate length with and without tools; measure length to the nearest ¼ inch and ½ centimeter; estimate the size of angles without tools.
	Area, perimeter, volume, and capacity	Goal 2 Describe and use strategies to measure the perimeter and area of polygons, to estimate the area of irregular shapes, and to find the volume of rectangular prisms.
	Units and systems of measurement	Goal 3 Describe relationships among U.S. customary units of length and among metric units of length.
Use and Understand Reference Frames	*Coordinate systems*	Goal 4 Use ordered pairs of numbers to name, locate, and plot points in the first quadrant of a coordinate grid.

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Content Strand: Geometry		
Program Goal	**Content Thread**	**Grade-Level Goals**
Investigate Characteristics and Properties of Two- and Three-Dimensional Geometric Shapes	*Lines and angles*	Goal 1 Identify, draw, and describe points, intersecting and parallel line segments and lines, rays, and right, acute, and obtuse angles.
	Plane and solid figures	Goal 2 Describe, compare, and classify plane and solid figures, including polygons, circles, spheres, cylinders, rectangular prisms, cones, cubes, and pyramids, using appropriate geometric terms including vertex, base, face, edge, and congruent.
Apply Transformations and Symmetry in Geometric Situations	*Transformations and symmetry*	Goal 3 Identify, describe, and sketch examples of reflections; identify and describe examples of translations and rotations.

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Content Strand: Patterns, Functions, and Algebra		
Program Goal	**Content Thread**	**Grade-Level Goals**
Understand Patterns and Functions	*Patterns and functions*	Goal 1 Extend, describe, and create numeric patterns; describe rules for patterns and use them to solve problems; use words and symbols to describe and write rules for functions that involve the four basic arithmetic operations and use those rules to solve problems.
Use Algebraic Notation to Represent and Analyze Situations and Structures	*Algebraic notation and solving number sentences*	Goal 2 Use conventional notation to write expressions and number sentences using the four basic arithmetic operations; determine whether number sentences are true or false; solve open sentences and explain the solutions; write expressions and number sentences to model number stories.
	Order of operations	Goal 3 Evaluate numeric expressions containing grouping symbols; insert grouping symbols to make number sentences true.
	Properties of the arithmetic operations	Goal 4 Apply the Distributive Property of Multiplication over Addition to the partial-products multiplication algorithm.