Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Number, Number Sense and Operations Standard Students demonstrate number sense, including an understanding of number systems and operations and how they relate to one another. Students compute fluently and make reasonable estimates using paper and pencil, technology-supported and mental methods.	A. Represent and compare numbers less than 0 through familiar applications and extending the number line. B. Compare, order and convert among fractions, decimals and percents. C. Develop meaning for percents, including percents greater than 100 and less than 1. D. Use models and pictures to relate concepts of ratio, proportion and percent. E. Use order of operations, including use of parenthesis and exponents to solve multi-step problems, and verify and interpret the results. F. Apply number system properties when performing computations. G. Apply and explain the use of prime factorizations, common factors, and common multiples in problem situations. H. Use and analyze the steps in standard and non-standard algorithms for computing with fractions, decimals and integers. I. Use a variety of strategies, including proportional reasoning, to estimate, compute, solve and explain solutions to problems involving integers, fractions, decimals and percents.	1.Decompose and recompose whole numbers using factors and exponents (e.g., $32 = 2 \times 2 \times 2 \times 2 \times 2 = 2^5$), and explain why "squared" means "second power" and "cubed" means "third power." 2. Find and use the prime factorization of composite numbers. For example: a. Use the prime factorization to recognize the greatest common factor (GCF). b. Use the prime factorization to recognize the least common multiple (LCM). c. Apply the prime factorization to solve problems and explain solutions. 3.Explain why a number is referred to as being "rational," and recognize that the expression $\frac{a}{b}$ can mean a parts of size $\frac{1}{b}$ each, a divided by b, or the ratio of a to b. 4.Describe what it means to find a specific percent of a number, using real-life examples. 5.Use models and pictures to relate concepts of ratio, proportion and percent, including percents less than 1 and greater than 100.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
		6.Use the order of operations, including the use of exponents, decimals and rational numbers, to simplify numerical expressions. 7.Use simple expressions involving integers to represent and solve problems; e.g., if a running back loses 15 yards on the first carry but gains 8 yards on the second carry, what is the net gain/loss? 8.Represent multiplication and division situations involving fractions and decimals with models and visual representations; e.g., show with pattern blocks what it means to take $2\frac{2}{3} \div \frac{1}{6}$. 9.Give examples of how ratios are used to represent comparisons; e.g., part-to-part, part-to-whole, whole-to-part. 10. Recognize that a quotient may be larger than the dividend when the divisor is a fraction; e.g., $6 \div \frac{1}{2} = 12$. 11. Perform fraction and decimal computations and justify their solutions; e.g., using manipulatives, diagrams, mathematical reasoning. 12. Develop and analyze algorithms for computing with fractions and decimals, and demonstrate fluency in their use.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
		13. Estimate reasonable solutions to problem situations involving fractions and decimals; e.g., $\frac{7}{8} + \frac{12}{13} \approx 2$ and $4.23 \times 5.8 \approx 25$. 14. Use proportional reasoning, ratios and percents to represent problem situations and determine the reasonableness of solutions. 15. Determine the percent of a number and solve related problems; e.g., find the percent markdown if the original price was $140, and the sale price is $100.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Measurement Standard Students estimate and measure to a required degree of accuracy and precision by selecting and using appropriate units, tools and technologies.	A. Select appropriate units to measure angles, circumference, surface area, mass and volume, using: a. U.S. customary units; e.g., degrees, square feet, pounds, and other units as appropriate; b. metric units; e.g., square meters, kilograms and other units as appropriate. A. Convert units of length, area, volume, mass and time within the same measurement system. C. Identify appropriate tools and apply appropriate techniques for measuring angles, perimeter or circumference and area of triangles, quadrilaterals, circles and composite shapes, and surface area and volume of prisms and cylinders. D. Select a tool and measure accurately to a specified level of precision. E. Use problem solving techniques and technology as needed to solve problems involving length, weight, perimeter, area, volume, time and temperature. F. Analyze and explain what happens to area and perimeter or surface area and volume when the dimensions of an object are changed.	1.Understand and describe the difference between surface area and volume. 2.Use strategies to develop formulas for finding circumference and area of circles, and to determine the area of sectors; e.g., $\frac{1}{2}$ circle, $\frac{2}{3}$ circle, $\frac{1}{3}$ circle, $\frac{1}{4}$ circle. 3.Estimate perimeter or circumference and area for circles, triangles and quadrilaterals, and surface area and volume for prisms and cylinders by: a. estimating lengths using string or links, areas using tiles or grid, and volumes using cubes; b. measuring attributes (diameter, side lengths, or heights) and using established formulas for circles, triangles, rectangles, parallelograms and rectangular prisms. 4.Determine which measure (perimeter, area, surface area, volume) matches the context for a problem situation; e.g., perimeter is the context for fencing a garden, surface area is the context for painting a room.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
	G. Understand and demonstrate the independence of perimeter and area for two-dimensional shapes and of surface area and volume for three-dimensional shapes.	5.Understand the difference between perimeter and area, and demonstrate that two shapes may have the same perimeter, but different areas or may have the same area, but different perimeters. 6. Describe what happens to the perimeter and area of a two-dimensional shape when the measurements of the shape are changed; e.g. length of sides are doubled.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Geometry and Spatial Sense Standard Students identify, classify, compare and analyze characteristics, properties and relationships of one-, two- and three-dimensional geometric figures and objects. Students use spatial reasoning, properties of geometric objects, and transformations to analyze mathematical situations and solve problems.	A. Identify and label angle parts and the regions defined within the plane where the angle resides. B. Draw circles, and identify and determine the relationships among the radius, diameter, center and circumference. C. Specify locations and plot ordered pairs on a coordinate plane. D. Identify, describe and classify types of line pairs, angles, two-dimensional figures and three-dimensional objects using their properties. Use proportions to express relationships among corresponding parts of similar figures. F. Describe and use the concepts of congruence, similarity and symmetry to solve problems. Describe and use properties of triangles to solve problems involving angle measures and side lengths of right triangles. H. Predict and describe results (size, position, orientation) of transformations of two-dimensional figures.	1.Classify and describe two-dimensional and three-dimensional geometric figures and objects by using their properties; e.g., interior angle measures, perpendicular/parallel sides, congruent angles/sides. 2.Use standard language to define geometric vocabulary: vertex, face, altitude, diagonal, isosceles, equilateral, acute, obtuse and other vocabulary as appropriate. 3.Use multiple classification criteria to classify triangles; e.g., right scalene triangle. 4.Identify and define relationships between planes; i.e., parallel, perpendicular and intersecting. 5.Predict and describe sizes, positions and orientations of two-dimensional shapes after transformations such as reflections, rotations, translations and dilations.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
	I. Identify and draw three-dimensional objects from different views (top, side, front and perspective). G. Apply properties of equality and proportionality to solve problems involving congruent or similar figures; e.g., create a scale drawing.	6.Draw similar figures that model proportional relationships; e.g., model similar figures with a 1 to 2 relationship by sketching two of the same figure, one with corresponding sides twice the length of the other. 7.Build three-dimensional objects with cubes, and sketch the two-dimensional representations of each side; i.e., projection sets.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Patterns, Functions and Algebra Standard Students use patterns, relations and functions to model, represent and analyze problem situations that involve variable quantities. Students analyze, model and solve problems using various representations such as tables, graphs and equations.	A. Describe, extend and determine the rule for patterns and relationships occurring in numeric patterns, computation, geometry, graphs and other applications. B. Represent, analyze and generalize a variety of patterns and functions with tables, graphs, words and symbolic rules. C. Use variables to create and solve equations and inequalities representing problem situations. D. Use symbolic algebra to represent and explain mathematical relationships. E. Use rules and variables to describe patterns, functions and other relationships. Use representations, such as tables, graphs and equations, to model situations and to solve problems, especially those that involve linear relationships. Write, simplify and evaluate algebraic expressions. Solve linear equations and inequalities symbolically, graphically and numerically. I. Explain how inverse operations are used to solve linear equations.	1. Represent and analyze patterns, rules and functions, using physical materials, tables and graphs. 2.Use words and symbols to describe numerical and geometric patterns, rules and functions. 3.Recognize and generate equivalent forms of algebraic expressions, and explain how the commutative, associative and distributive properties can be used to generate equivalent forms; e.g., perimeter as $2(l + w)$ or $2l + 2w$. 4.Solve simple linear equations and inequalities using physical models, paper and pencil, tables and graphs. 5.Produce and interpret graphs that represent the relationship between two variables. 6.Evaluate simple expressions by replacing variables with given values, and use formulas in problem-solving situations. 7.Identify and describe situations with constant or varying rates of change, and compare them. 8. Use technology to analyze change; e.g., use computer applications or graphing calculators to display and interpret rate of change.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
	J. Use formulas in problem-solving situations. K. Graph linear equations and inequalities. L. Analyze functional relationships, and explain how a change in one quantity results in a change in the other. M. Approximate and interpret rates of change from graphical and numerical data.	

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Data Analysis and Probability Standard Students pose questions and collect, organize, represent, interpret and analyze data to answer those questions. Students develop and evaluate inferences, predictions and arguments that are based on data.	A. Read, create and use line graphs, histograms, circle graphs, box-and-whisker plots, stem-and-leaf plots, and other representations when appropriate. B. Interpret data by looking for patterns and relationships, draw and justify conclusions, and answer related questions. C. Evaluate interpretations and conclusions as additional data are collected, modify conclusions and predictions, and justify new findings. D. Compare increasingly complex displays of data, such as multiple sets of data on the same graph. E. Collect, organize, display and interpret data for a specific purpose or need. F. Determine and use the range, mean, median and mode to analyze and compare data, and explain what each indicates about the data. G. Evaluate conjectures and predictions based upon data presented in tables and graphs, and identify misuses of statistical data and displays. H. Find all possible outcomes of simple experiments or problem situations, using methods such as lists, arrays and tree diagrams.	1. Read, construct and interpret line graphs, circle graphs and histograms. 2.Select, create and use graphical representations that are appropriate for the type of data collected. 3.Compare representations of the same data in different types of graphs, such as a bar graph and circle graph. 4.Understand the different information provided by measures of center (mean, mode and median) and measures of spread (range). 5.Describe the frequency distribution of a set of data, as shown in a histogram or frequency table, by general appearance or shape; e.g., number of modes, middle of data, level of symmetry, outliers. 6.Make logical inferences from statistical data. 7. Design an experiment to test a theoretical probability and explain how the results may vary.

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
	I. Describe the probability of an event using ratios, including fractional notation. J. Compare experimental and theoretical results for a variety of simple experiments. K. Make and justify predictions based on experimental and theoretical probabilities.	

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
Mathematical Processes Standard Students use mathematical processes and knowledge to solve problems. Students apply problem-solving and decision-making techniques, and communicate mathematical ideas.	A. Clarify problem-solving situation and identify potential solution processes; e.g., consider different strategies and approaches to a problem, restate problem from various perspectives. B. Apply and adapt problem-solving strategies to solve a variety of problems, including unfamiliar and non-routine problem situations. C. Use more than one strategy to solve a problem, and recognize there are advantages associated with various methods. D. Recognize whether an estimate or an exact solution is appropriate for a given problem situation. E. Use deductive thinking to construct informal arguments to support reasoning and to justify solutions to problems. F. Use inductive thinking to generalize a pattern of observations for particular cases, make conjectures, and provide supporting arguments for conjectures. G. Relate mathematical ideas to one another and to other content areas; e.g., use area models for adding fractions, interpret graphs in reading, science and social studies.	

Standard	Benchmark	Indicators
	By the end of the 5 – 7 program, students will . . .	
	H. Use representations to organize and communicate mathematical thinking and problem solutions.	
	I. Select, apply, and translate among mathematical representations to solve problems; e.g., representing a number as a fraction, decimal or percent as appropriate for a problem.	
	J. Communicate mathematical thinking to others and analyze the mathematical thinking and strategies of others.	
	K. Recognize and use mathematical language and symbols when reading, writing and conversing with others.	