

7th Grade Math Curriculum Focal Points	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
Number and Operations and Algebra and Geometry: Developing an understanding of and applying proportionality and similarity.	<p><u>Number and Operations</u></p> <p>7.a (6,8) Understand and use ratio and proportions to represent quantitative relationships..</p> <p>7.b Relate and compare different representations for a relationship.</p> <p>7.c Use factors, multiples, prime factorization, and relatively prime numbers to solve problems.</p> <p>7.d (6, 8) Work flexibly with fractions, decimals, and percents to solve problems.</p> <p>7.e (6) Compare and order fractions, decimals, and percent efficiently and find their approximate locations on a number line.</p> <p>7.f (6, 8) Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers.</p> <p>7.g (6, 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>7.h (6, 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>	

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Number and Operations and Algebra: Developing an understanding of operations on all rational numbers and solving linear equations.	<p><u>Numbers and Operations (continued)</u></p> <p>7.i (6, 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>7.j (6, 8) Develop and analyze algorithms for computing with fractions, decimals, and integers and develop fluency in their use.</p> <p>7.k Develop meaning for percents greater than 100 and less than 1.</p> <p>7.l Develop meaning for integers and represent and compare quantities with them.</p> <p><u>Geometry</u></p> <p>7.m Describe sizes, positions and orientations of shapes under informal transformations such as flips, turns, slides (these transformations are identified in Grade 4 Curriculum Focal Points) and scaling.</p> <p>7.n (8) Understand relationships among the angles, side lengths, perimeters, areas, and volumes of similar objects.</p> <p>7.o Use two-dimensional representations of three-dimensional objects to visualize and solve problems such as those involving surface area and volume.</p> <p>7.p Use visual tools such as networks to represent and solve problems (Networks are not identified as focal points or connections)</p>	

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<p>Measurement and Geometry and Algebra: Developing an understanding of and using formulas to determine surface area and volume of three-dimensional shapes.</p>	<p><u>Algebra</u></p> <p>7.q (6, 8) Represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic rules.</p> <p>7.r (8) Identify functions as linear or nonlinear and contrast their properties from tables, graphs, or equations.</p> <p>7.s (6, 8) Develop an initial conceptual understanding of different uses of variables.</p> <p>7.t (6, 8) Use symbolic algebra to represent situations and to solve problems, especially those that involve linear relationships.</p> <p>7.u (6, 8) Recognize and generate equivalent forms for simple algebraic expressions and solve linear equations.</p> <p>7.v (6, 8) Model and solve contextualized problems using various representations, such as graphs, tables, and equations.</p> <p><u>Measurement</u></p> <p>7.w (6, 8) Solve problems involving scale factors, using ratio and proportion.</p> <p>7.x (6) Understand both metric and customary systems of measurement.</p> <p>7.y (6, 8) Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.</p> <p>7.z (8) Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.</p>	

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	<p><u>Measurement (cont'd)</u></p> <p>7.aa (6) Understand relationships among units and convert from one unit to another within the same system.</p> <p>7.bb (6, 8) Solve simple problems involving rates and derived measurements for such attributes as velocity and density.</p> <p>7.cc Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids and circles, and develop strategies to find the area of more complex shapes.</p> <p>7.dd Develop strategies to determine the surface area and volume of selected prisms, pyramids, and cylinders.</p> <p><u>Data Analysis and Probability</u></p> <p>7.ee Formulate questions, design studios, and collect data about a characteristic shared by two populations or different characteristics within one population.</p>	