Correlation to the Oklahoma Academic Standards for Mathematics Grade 7
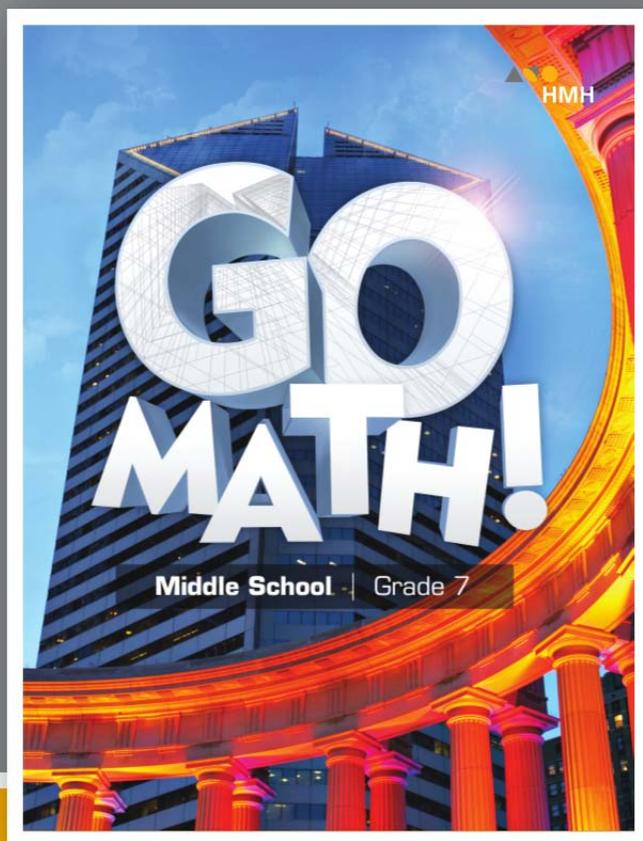
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Grade 7

Citations	Standard	Descriptor
7.N.1 Read, write, represent, and compare rational numbers, expressed as integers, fractions, and decimals.		
SE: 61–66	7.N.1.1	Know that every rational number can be written as the ratio of two integers or as a terminating or repeating decimal.
Online Lesson: 3	7.N.1.2	Compare and order rational numbers expressed in various forms using the symbols <, >, and =.
SE: 61-66, 89-94, 95-100, 153-158, 265-270	7.N.1.3	Recognize and generate equivalent representations of rational numbers, including equivalent fractions.
7.N.2 Calculate with integers and rational numbers, with and without positive integer exponents, to solve real-world and mathematical problems; explain the relationship between absolute value of a rational number and the distance of that number from zero.		
Online Lesson: 4	7.N.2.1	Estimate solutions to multiplication and division of integers in order to assess the reasonableness of results.
SE: 37–42, 43–48 Online Lesson: 4	7.N.2.2	Illustrate multiplication and division of integers using a variety of representations.
SE: 7-12, 13-18, 19-24, 25-30, 37-42, 43-48, 67-74, 75-82, 83-88, 95-100, 123-128, 153-158	7.N.2.3	Solve real-world and mathematical problems involving addition, subtraction, multiplication and division of rational numbers; use efficient and generalizable procedures including but not limited to standard algorithms.
SE: 271-276 Online Lesson: 2	7.N.2.4	Raise integers to positive integer exponents.
SE: 271-276 Online Lesson: 2	7.N.2.5	Solve real-world and mathematical problems involving calculations with rational numbers and positive integer exponents.
SE: 68-69, 76-82 Online Lesson: 1	7.N.2.6	Explain the relationship between the absolute value of a rational number and the distance of that number from zero on a number line. Use the symbol for absolute value.

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7.A.1 Understand the concept of proportionality in real-world and mathematical situations, and distinguish between proportional and other relationships.		
SE: 17-122, 123–128, 129-134 Online Lesson: 6	7.A.1.1	Describe that the relationship between two variables, x and y, is proportional if it can be expressed in the form y/x = k or y = kx; distinguish proportional relationships from other relationships, including inversely proportional relationships (xy = k or y = k/x).
SE: 129–134 Online Lesson: 5	7.A.1.2	Recognize that the graph of a proportional relationship is a line through the origin and the coordinate $(1, r)$, where both r and the slope are the unit rate (constant of proportionality, k).
7.A.2 Recognize proportional relationships in real-world and mathematical situations; represent these and other relationships with tables, verbal descriptions, symbols, and graphs; solve problems involving proportional relationships and interpret results in the original context.		
SE: 117–122, 123-128, 129-134	7.A.2.1	Represent proportional relationships with tables, verbal descriptions, symbols, and graphs; translate from one representation to another. Determine and compare the unit rate (constant of proportionality, slope, or rate of change) given any of these representations.
SE: 117-122, 123-128, 141–146, 147-152, 153–158, 237-242	7.A.2.2	Solve multi-step problems involving proportional relationships involving distance-time, percent increase or decrease, discounts, tips, unit pricing, similar figures, and other real-world and mathematical situations.
SE: 117-122, 123–128, 141-146, 147-152, 153-158, 237-242	7.A.2.3	Use proportional reasoning to solve real-world and mathematical problems involving ratios.
Online Lesson: 7	7.A.2.4	Use proportional reasoning to assess the reasonableness of solutions.
7.A.3 Represent and solve linear equations and inequalities.		
SE: 179–184, 185–190, 191–196, 203-210, 211-216, 217-222 SE lessons 7.1, 7.2, 7.3	7.A.3.1	Write and solve problems leading to linear equations with one variable in the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are rational numbers.
SE: 203–210, 211–216, 217–222	7.A.3.2	Represent, write, solve, and graph problems leading to linear inequalities with one variable in the form $x + p > q$ and $x + p < q$, where p and q are nonnegative rational numbers.
SE: 179-184, 185–190, 191–196, 203–210, 211–216, 217–222	7.A.3.3	Represent real-world or mathematical situations using equations and inequalities involving variables and rational numbers.

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7.A.4 Use order of operations and properties of operations to generate equivalent numerical and algebraic expressions containing rational numbers and grouping symbols; evaluate such expressions.		
SE: 25-30, 147-152, 173–178, 178A-178B 6.1 Going Further	7.A.4.1	Use properties of operations (limited to associative, commutative, and distributive) to generate equivalent numerical and algebraic expressions containing rational numbers, grouping symbols and whole number exponents.
Online Lesson: 8	7.A.4.2	Apply understanding of order of operations and grouping symbols when using calculators and other technologies.
7.GM.1 Develop and understand the concept of surface area and volume of rectangular prisms.		
Online Lesson: 15	7.GM.1.1	Using a variety of tools and strategies, develop the concept that surface area of a rectangular prism with rational-valued edge lengths can be found by wrapping the figure with same-sized square units without gaps or overlap. Use appropriate measurements such as cm^2.
Online Lesson: 16	7.GM.1.2	Using a variety of tools and strategies, develop the concept that the volume of rectangular prisms with rational-valued edge lengths can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use appropriate measurements such as cm^3.
7.GM.2 Determine the area of trapezoids and area and perimeter of composite figures.		
Online Lesson: 14	7.GM.2.1	Develop and use the formula to determine the area of a trapezoid to solve problems.
SE: 277–282 Online Lesson: 13	7.GM.2.2	Find the area and perimeter of composite figures to solve real-world and mathematical problems.
7.GM.3 Use reasoning with proportions and ratios to determine measurements, justify formulas, and solve real-world and mathematical problems involving circles and related geometric figures.		
SE: 265–270 Online Lesson: 12	7.GM.3.1	Demonstrate an understanding of the proportional relationship between the diameter and circumference of a circle and that the unit rate (constant of proportionality) is π and can be approximated by rational numbers such as 22/7 and 3.14.
SE: 265–270, 271–276	7.GM.3.2	Calculate the circumference and area of circles to solve problems in various contexts, in terms of π and using approximations for π.

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7.GM.4 Analyze the effect of dilations, translations, and reflections on the attributes of two-dimensional figures on and off the coordinate plane.		
Online Lesson: 9	7.GM.4.1	Describe the properties of similarity, compare geometric figures for similarity, and determine scale factors resulting from dilations.
Online Lesson: 10	7.GM.4.2	Apply proportions, ratios, and scale factors to solve problems involving scale drawings and determine side lengths and areas of similar triangles and rectangles.
Online Lesson: 11	7.GM.4.3	Graph and describe translations and reflections of figures on a coordinate plane and determine the coordinates of the vertices of the figure after the transformation.
7.D.1 Display and analyze data in a variety of ways.		
SE: 335-340, 341-346, 347-352, 375-380	7.D.1.1	Design simple experiments, collect data and calculate measures of central tendency (mean, median, and mode) and spread (range). Use these quantities to draw conclusions about the data collected and make predictions.
Online Lesson: 17, 18	7.D.1.2	Use reasoning with proportions to display and interpret data in circle graphs (pie charts) and histograms. Choose the appropriate data display and know how to create the display using a spreadsheet or other graphing technology.
7.D.2 – Calculate probabilities and reason about probabilities using proportions to solve real-world and mathematical problems.		
SE: 399-404, 405-410, 411-416	7.D.2.1	Determine the theoretical probability of an event using the ratio between the size of the event and the size of the sample space; represent probabilities as percents, fractions and decimals between 0 and 1.
SE: 367-374, 375-380, 381-386, 387-392, 399-404, 417-422 Online Lesson: 19	7.D.2.2	Calculate probability as a fraction of sample space or as a fraction of area. Express probabilities as percents, decimals and fractions.
SE: 375-380, 381-386, 387-392, 405-410, 411-416	7.D.2.3	Use proportional reasoning to draw conclusions about and predict relative frequencies of outcomes based on probabilities.