

Grade 7 Math TEKS and Related Prior Learning TEKS

	Grade 7 Math TEKS/SE	Prior Learning TEKS/SE
7.2	Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:	
7.2A	extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.	6.2A extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.
7.3	Number and operations. The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. The student is expected to:	
7.3A	add, subtract, multiply, and divide rational numbers fluently.	6.3A recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values. 6.3C represent integer operations with concrete models and connect the actions with the models to standardized algorithms. 6.3D add, subtract, multiply, and divide integers fluently. 6.3E multiply and divide positive rational numbers fluently. 5.3A estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division. 5.3H add and subtract positive rational numbers fluently. 5.3K represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations.
7.3B	apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.	6.3B determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one.

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		<p>6.3E multiply and divide positive rational numbers fluently.</p> <p>5.3A estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division.</p> <p>5.3H add and subtract positive rational numbers fluently.</p>
7.4	Proportionality. The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:	
7.4A	represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$.	<p>6.4A compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships.</p> <p>6.4D give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients.</p> <p>6.5A represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions.</p>
7.4B	calculate unit rates from rates in mathematical and real-world problems.	
7.4C	determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems.	6.4A compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships.
7.4D	solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems.	<p>6.4F represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers.</p> <p>6.4G generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money.</p>

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		<p>6.5B solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models.</p> <p>6.5C use equivalent fractions, decimals, and percents to show equal parts of the same whole.</p>
7.4E	convert between measurement systems, including the use of proportions and the use of unit rates.	6.4H convert units within a measurement system, including the use of proportions and unit rates.
7.5	Proportionality. The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. The student is expected to:	
7.5A	generalize the critical attributes of similarity, including ratios within and between similar shapes.	
7.5B	describe π as the ratio of the circumference of a circle to its diameter.	
7.5C	solve mathematical and real-world problems involving similar shape and scale drawings.	
7.6	Proportionality. The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships. The student is expected to:	
7.6A	represent sample spaces for simple and compound events using lists and tree diagrams.	
7.6B	select and use different simulations to represent simple and compound events with and without technology.	
7.6C	make predictions and determine solutions using experimental data for simple and compound events.	
7.6D	make predictions and determine solutions using theoretical probability for simple and compound events.	
7.6E	find the probabilities of a simple event and its complement and describe the relationship between the two.	
7.6F	use data from a random sample to make inferences about a population.	

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7.6G	solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents.	
7.6H	solve problems using qualitative and quantitative predictions and comparisons from simple experiments.	
7.6I	determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces.	
7.7	Expressions, equations, and relationships. The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to:	
7.7A	represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$.	6.6A identify independent and dependent quantities from tables and graphs.
7.8	Expressions, equations, and relationships. The student applies mathematical process standards to develop geometric relationships with volume. The student is expected to:	
7.8A	model the relationship between the volume of a rectangular prism and a rectangular pyramid having both congruent bases and heights and connect that relationship to the formulas.	6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes.
7.8B	explain verbally and symbolically the relationship between the volume of a triangular prism and a triangular pyramid having both congruent bases and heights and connect that relationship to the formulas.	6.8C write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.
7.8C	use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas.	
7.9	Expressions, equations, and relationships. The student applies mathematical process standards to solve geometric problems. The student is expected to:	
7.9A	solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids.	6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.
7.9B	determine the circumference and area of circles.	6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes.

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		6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.
7.9C	determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles.	6.8B model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes.
7.9D	solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net.	6.8D determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.
7.10	Expressions, equations, and relationships. The student applies mathematical process standards to use one-variable equations and inequalities to represent situations. The student is expected to:	
7.10A	write one-variable, two-step equations and inequalities to represent constraints or conditions within problems.	6.9A write one-variable, one-step equations and inequalities to represent constraints or conditions within problems.
7.10B	represent solutions for one-variable, two-step equations and inequalities on number lines.	6.9B represent solutions for one-variable, one-step equations and inequalities on number lines.
7.10C	write a corresponding real-world problem given a one-variable, two-step equation or inequality.	6.9C write corresponding real-world problems given one-variable, one-step equations or inequalities.
7.11	Expressions, equations, and relationships. The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:	
7.11A	model and solve one-variable, two-step equations and inequalities.	6.10A model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts.
7.11B	determine if the given value(s) make(s) one-variable, two-step equations and inequalities true	6.10B determine if the given value(s) make(s) one-variable, one-step equations or inequalities true.
7.11C	write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships.	6.8A extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle.

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7.12	Measurement and data. The student applies mathematical process standards to use statistical representations to analyze data. The student is expected to:	
7.12A	compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads.	<p>6.12B use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution.</p> <p>6.12C summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution.</p> <p>6.12D summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution.</p>
7.12B	use data from a random sample to make inferences about a population.	
7.12C	compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations.	
7.13	Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:	
7.13A	calculate the sales tax for a given purchase and calculate income tax for earned wages.	
7.13B	identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget.	5.10F balance a simple budget.
7.13C	create and organize a financial assets and liabilities record and construct a net worth statement.	6.14C balance a check register that includes deposits, withdrawals, and transfers.
7.13D	use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby.	5.10F balance a simple budget.

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7.13E	calculate and compare simple interest and compound interest earnings.	
7.12F	analyze and compare monetary incentives, including sales, rebates, and coupons.	