

Mathematics TEKS Verification Document

Grade 7

		1 st SW		2 nd SW		3 rd SW		4 th SW		5 th SW		6 th SW	
		1	2	3	4	5	6	7	8	9	10	11	12
7.1	Mathematical process standards. <i>The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</i>												
7.1A	Apply mathematics to problems arising in everyday life, society, and the workplace.	T	T	T	T	T	T	T	T	T	T	T	T
7.1B	Use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution.	T	T	T	T	T	T	T	T	T	T	T	T
7.1C	Select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems.	T	T	T	T	T	T	T	T	T	T	T	T
7.1D	Communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.	T	T	T	T	T	T	T	T	T	T	T	T
7.1E	Create and use representations to organize, record, and communicate mathematical ideas.	T	T	T	T	T	T	T	T	T	T	T	T
7.1F	Analyze mathematical relationships to connect and communicate mathematical ideas.	T	T	T	T	T	T	T	T	T	T	T	T
7.1G	Display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	T	T	T	T	T	T	T	T	T	T	T	T
7.2	Number and operations. <i>The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:</i>												
7.2	Extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers. <i>Supporting</i>	T										O	
7.3	Number and operations. <i>The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. The student is expected to:</i>												
7.3A	Add, subtract, multiply, and divide rational numbers fluently. <i>Supporting</i>	T	O	O	O	O	O	O	O	O	O	O	O
7.3B	Apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers. <i>Readiness</i>	T	O	O	O	O	O	O	O	O	T	O	O
7.4	Proportionality. <i>The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:</i>												
7.4A	Represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$. <i>Readiness</i>			T	T	O		O			T	O	

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7.4B	Calculate unit rates from rates in mathematical and real-world problems. <i>Supporting</i>			T	O	O		O			T	O	
7.4C	Determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems. <i>Supporting</i>			T	T	O		O			T	O	
7.4D	Solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems. <i>Readiness</i>			T	O	O	O	O		O	T	O	
7.4E	Convert between measurement systems, including the use of proportions and the use of unit rates. <i>Supporting</i>			T	O	O		T	O		O	O	O
7.5	<i>Proportionality.</i> 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. <i>Supporting</i>					T		O			O		O
7.5B	Describe π as the ratio of the circumference of a circle to its diameter. <i>Supporting</i>							T			O		O
7.5C	Solve mathematical and real-world problems involving similar shape and scale drawings. <i>Readiness</i>					T		O	O		T		O
7.6	<i>Proportionality.</i> 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. <i>Supporting</i>							T			O		
7.6B	Select and use different simulations to represent simple and compound events with and without technology.							T			O		
7.6C	Make predictions and determine solutions using experimental data for simple and compound events. <i>Supporting</i>							T			O		
7.6D	Make predictions and determine solutions using theoretical probability for simple and compound events. <i>Supporting</i>							T			O		
7.6E	Find the probabilities of a simple event and its complement and describe the relationship between the two. <i>Supporting</i>							T			O		
7.6F	Use data from a random sample to make inferences about a population. <i>Supporting</i>							T			O		

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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. <i>Supporting</i>										T	O	
7.6H	Solve problems using qualitative and quantitative predictions and comparisons from simple experiments. <i>Readiness</i>						T					O	
7.6I	Determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces. <i>Readiness</i>						T					O	
7.7	<i>Expressions, equations, and relationships.</i> The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to:												
7.7	Represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$. <i>Readiness</i>				T	O						T	T
7.8	<i>Expressions, equations, and relationships.</i> 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.								T			O	O
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.								T			O	O
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.							T				O	O
7.9	<i>Expressions, equations, and relationships.</i> 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. <i>Readiness</i>								T			O	T
7.9B	Determine the circumference and area of circles. <i>Readiness</i>							T				O	T
7.9C	Determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles. <i>Readiness</i>							T				O	T
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. <i>Supporting</i>								T			O	O

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7.10	Expressions, equations, and relationships. <i>The student applies mathematical process standards to use one-variable equations and inequalities to represent situations. The student is expected to:</i>													
7.10A	Write one-variable, two-step equations and inequalities to represent constraints or conditions within problems. <i>Supporting</i>		T	O	O				O	O		O	T	O
7.10B	Represent solutions for one-variable, two-step equations and inequalities on number lines. <i>Supporting</i>		T	O	O				O	O		O	T	O
7.10C	Write a corresponding real-world problem given a one-variable, two-step equation or inequality. <i>Supporting</i>		T	O	O				O	O		O	T	O
7.11	Expressions, equations, and relationships. <i>The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:</i>													
7.11A	Model and solve one-variable, two-step equations and inequalities. <i>Readiness</i>		T	O	O				O	O		O	T	O
7.11B	Determine if the given value(s) make(s) one-variable, two-step equations and inequalities true. <i>Supporting</i>		T	O	O				O	O		O	T	O
7.11C	Write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships. <i>Supporting</i>		T	O	O				O	O		O	O	T
7.12	Measurement and data. <i>The student applies mathematical process standards to use statistical representations to analyze data. The student is expected to:</i>													
7.12A	Compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads. <i>Readiness</i>											T	O	
7.12B	Use data from a random sample to make inferences about a population. <i>Supporting</i>											T	O	
7.12C	Compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations. <i>Supporting</i>											T	O	
7.13	Personal financial literacy. <i>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:</i>													
7.13A	Calculate the sales tax for a given purchase and calculate income tax for earned wages. <i>Supporting</i>	T	O	O	O							O	O	

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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. <i>Supporting</i>			T						T	O		
7.13C	Create and organize a financial assets and liabilities record and construct a net worth statement. <i>Supporting</i>	T									O		
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. <i>Supporting</i>		T								O		
7.13E	Calculate and compare simple interest and compound interest earnings. <i>Supporting</i>		T	O							O	O	
7.13F	Analyze and compare monetary incentives, including sales, rebates, and coupons. <i>Supporting</i>		T	O	O						O	O	
<i>The provisions of subchapter §111.27 were adopted by the State Board of Education to be effective September 10, 2012, 37 TexReg 7109 and to be implemented beginning with the 2014-2015 school year.</i>													