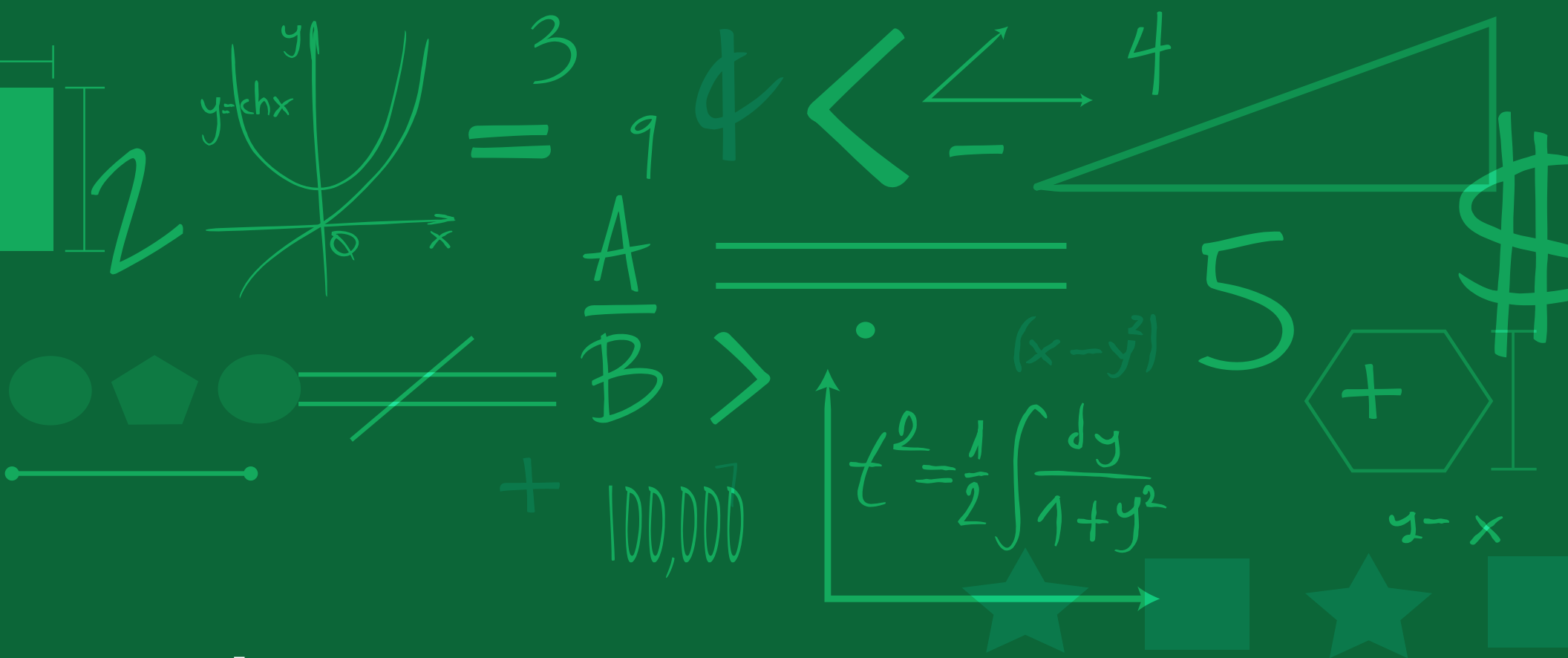

Mathematics TEKS
SUPPORTING INFORMATION

GRADE 7

Texas Education Agency

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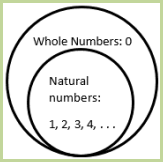
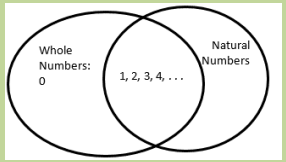
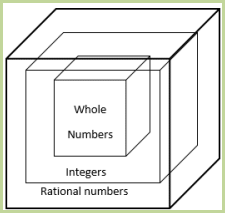
TEKS	Supporting Information
(a) Introduction. (1) The desire to achieve educational excellence is the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on computational thinking, mathematical fluency, and solid understanding, Texas will lead the way in mathematics education and prepare all Texas students for the challenges they will face in the 21st century.	The definition of a well-balanced mathematics curriculum has expanded to include the Texas College and Career Readiness Standards (CCRS). A focus on mathematical fluency and solid understanding allows for rich exploration of the primary focal points.
(a) Introduction. (2) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will 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. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	This paragraph occurs second in the TEKS, preceding the content descriptions. This highlights the emphasis of student use of the mathematical process standards to acquire and demonstrate mathematical understanding. This introductory paragraph includes generalization and abstraction in the text from (1)(B). This introductory paragraph includes computer programs in the text from (1)(C). This introductory paragraph states, "Students will use mathematical relationships to generate solutions and make connections and predictions," instead of the text from (1)(E).
(a) Introduction. (3) The primary focal areas in Grade 7 are number and operations; proportionality; expressions, equations, and relationships; and measurement and data. Students use concepts, algorithms, and properties of rational numbers to explore mathematical relationships and to describe increasingly complex situations. Students use concepts of proportionality to explore, develop, and communicate mathematical relationships, including number, geometry and measurement, and statistics and probability. Students use algebraic thinking to describe how a change in one quantity in a relationship results in a change in the other. Students connect verbal, numeric, graphic, and symbolic representations of relationships, including equations and inequalities. Students use geometric properties and relationships, as well as spatial reasoning, to model and analyze situations and solve problems. Students communicate information about geometric figures or situations by quantifying attributes, generalize procedures from measurement experiences, and use the procedures to solve problems. Students use appropriate statistics, representations of data, and reasoning to draw conclusions, evaluate arguments, and make recommendations. While the use of all types of technology is important, the emphasis on algebra readiness skills necessitates the implementation of graphing technology.	This paragraph highlights specifics about grade 7 mathematics content and follows the paragraph about the mathematical process standards. This supports the notion that the TEKS should be learned in a way that integrates the mathematical process standards in an effort to develop fluency.
(a) Introduction. (4) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.	The State Board of Education approved the retention of some "such as" statements within the TEKS for clarification of content. The phrases "including" and "such as" should not be considered as limiting factors for the student expectations (SEs) in which they reside.

Additional Resources are available online including

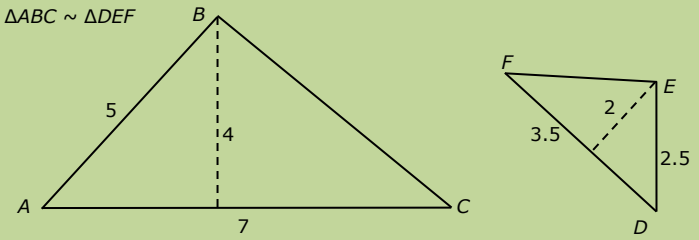
Interactive Mathematics Glossary
Vertical Alignment Charts
Texas Response to the Curriculum Focal Points, Revised 2013
Texas Mathematics Resource Page

TEKS: Mathematical Process Standards.	Supporting Information
7(1)(A) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to apply mathematics to problems arising in everyday life, society, and the workplace.**	This SE emphasizes application. The opportunities for application have been consolidated into three areas: everyday life, society, and the workplace. This SE, when paired with a content SE, allows for increased rigor through connections outside the discipline.
7(1)(B) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to 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.**	This SE describes the traditional problem-solving process used in mathematics and science. Students are expected to use this process in a grade-appropriate manner when solving problems that can be considered difficult relative to mathematical maturity.
7(1)(C) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to 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.**	The phrase "as appropriate" is included in the TEKS. This implies that students are assessing which tool(s) to apply rather than trying only one or all accessible tools.
7(1)(D) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate.**	Communication includes the implications of mathematical ideas and reasoning. The list of representations is summarized with "multiple representations" with specificity added for symbols, graphs, and diagrams.
7(1)(E) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to create and use representations to organize, record, and communicate mathematical ideas.**	The use of representations includes organizing and recording mathematical ideas in addition to communicating ideas. As students use and create representations, it is implied that they will evaluate the effectiveness of their representations to ensure that they are communicating mathematical ideas clearly. Students are expected to use appropriate mathematical vocabulary and phrasing when communicating mathematical ideas.
7(1)(F) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to analyze mathematical relationships to connect and communicate mathematical ideas.**	The TEKS allow for additional means to analyze relationships and to form connections with mathematical ideas beyond forming conjectures about generalizations and sets of examples and non-examples. Students are expected to form conjectures based on patterns or sets of examples and non-examples.
7(1)(G) **Mathematical process standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding. **The student is expected to display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.**	The TEKS expect students to validate their conclusions with displays, explanations, and justifications. The conclusions should focus on mathematical ideas and arguments. Displays may include diagrams, visual aids, written work, etc. The intention is to make one's work visible to others so that explanations and justifications may be shared in written or oral form. Precise mathematical language is expected. For example, students would use "natural numbers" instead of "counting numbers" when referring to the numbers {1, 2, 3, 4, 5 . . .}.

TEKS: Number and Operations.	Supporting Information
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 extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.**	Subsets of rational numbers include natural numbers, whole numbers, and integers. A Venn diagram is an applicable visual representation. As there is not a unified definition for these terms, the natural numbers will be taken to mean {1, 2, 3 . . .}, and the whole numbers will be taken to mean {0, 1, 2, 3 . . .}. A Venn diagram may be nested or not   or other objects could be used. 

TEKS: Number and Operations.	Supporting Information
7(3)(A) **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 add, subtract, multiply, and divide rational numbers fluently.**	The addition, subtraction, multiplication, and division of rational numbers include positive and negative fractions and decimals. In the TEKS, students are expected to be fluent with multiplying and dividing positive rational numbers and integers in grade 6 [6(3)(E) and 6(3)(D)]. When paired with 7(1)(A) and 7(3)(B), the expectation is that students solve problems. This SE includes the addition, subtraction, multiplication, and division of both positive and negative rational numbers including percents and integers. "Procedural fluency refers to knowledge of procedures, knowledge of when and how to use them appropriately, and skill in performing them flexibly, accurately, and efficiently" (National Research Council, 2001, p. 121). In an effort to determine fluency with each operation, these may be one step and one operation.
7(3)(B) **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 apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.**	The phrase "apply and extend previous understandings of operations" refers to applying the algorithms for operations with integers and operations with fractions and decimals to perform operations with rational numbers. This SE includes the addition, subtraction, multiplication, and division of both positive and negative rational numbers including percents and integers. Students may be expected to perform multiple steps and multiple operations for this SE.

TEKS: Proportionality.	Supporting Information
7(4)(A) **Proportionality**. The student applies mathematical process standards to represent and solve problems involving proportional relationships. **The student is expected to represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including *d = rt*.**	Specificity regarding graphing relationships and applying multiple representations to those relationships with constant rates of change is included.
7(4)(B) **Proportionality**. The student applies mathematical process standards to represent and solve problems involving proportional relationships. **The student is expected to calculate unit rates from rates in mathematical and real-world problems.**	Examples of unit rates in mathematical and real-world problems include those involving speed, density, price, measurements in recipes, and student-teacher ratios considering this ratio as a rate of students to teachers.
7(4)(C) **Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships. **The student is expected to determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems.**	The constant of proportionality may be a positive rational number.
7(4)(D) **Proportionality**. The student applies mathematical process standards to represent and solve problems involving proportional relationships. **The student is expected to solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems.**	Specificity regarding the types of percent problems with "multi-step problems involving percent increase and percent decrease" is included. These applications may include tax, tip, discount, markup, simple interest, and commission. SE 7(4)(D) focuses on solving problems involving ratios, rates, and percents in addition to financial literacy problems.
7(4)(E) **Proportionality**. The student applies mathematical process standards to represent and solve problems involving proportional relationships. **The student is expected to convert between measurement systems, including the use of proportions and the use of unit rates.**	Students are expected to convert between the customary and metric measurement systems rather than within one of the measurement systems. Students are expected to perform these conversions using proportions and using unit rates. For example, when converting 12 inches into its equivalent length in centimeters, a student may write and solve the proportion 12 in/x cm = 1 in/2.54 cm, or the student may multiply 12 inches by the unit conversion rate of 2.54 cm/in. The use of unit conversion rates lays a foundation for dimensional analysis and its application in science. This is the culminating skill of conversion that follows 4(8)(B), 5(7), and 6(4)(H).

TEKS: Proportionality.	Supporting Information
7(5)(A) **Proportionality.** The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. **The student is expected to generalize the critical attributes of similarity, including ratios within and between similar shapes.**	Ratios may be within a given shape or between similar shapes.  A ratio of height to base length represents a "within" ratio for each triangle. The ratio compares two attributes within one figure to the corresponding two attributes within a second figure. $\frac{\Delta ABC}{\frac{4}{7}} = \frac{\Delta DEF}{\frac{2}{3.5}}$ A ratio of corresponding lengths for two similar figures represents a "between" ratio. The ratio is the same for all ratios comparing two corresponding lengths of two similar figures. $\frac{AB}{DE} = \frac{5}{2.5} = \frac{2}{1}$ $\frac{AC}{DF} = \frac{7}{3.5} = \frac{2}{1}$
7(5)(B) **Proportionality.** The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. **The student is expected to describe π as the ratio of the circumference of a circle to its diameter.**	This SE allows for the generalization of the ratio for π while still reinforcing the notion of the proportional relationship c:d for all circles.
7(5)(C) **Proportionality.** The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. **The student is expected to solve mathematical and real-world problems involving similar shape and scale drawings.**	SE 7(5)(C) focuses on solving problems involving similar figures, dilations, and scale drawings. This SE builds upon scale factors introduced in 6(5)(A) and builds to similar figures in 8(3)(A), 8(3)(B), and 8(3)(C).

TEKS: Proportionality.	Supporting Information
7(6)(A) **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 represent sample spaces for simple and compound events using lists and tree diagrams.**	Students are expected to use lists and tree diagrams to construct and represent the sample spaces. When paired with 7(1)(E), students may be expected to connect lists to tree diagrams. Compound events include composite, independent, and dependent events.
7(6)(B) **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 select and use different simulations to represent simple and compound events with and without technology.**	Simulations may reflect simple or compound events. Compound events include composite, independent, and dependent events.
7(6)(C) **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 make predictions and determine solutions using experimental data for simple and compound events**.	Students are expected to determine both experimental probabilities. Data should be used for experimental probabilities, and sample spaces should be used for theoretical probabilities. Compound events include composite, independent, and dependent events.
7(6)(D) **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 make predictions and determine solutions using theoretical probability for simple and compound events.**	Students are expected to determine both theoretical probabilities. Data should be used for experimental probabilities, and sample spaces should be used for theoretical probabilities. Compound events include composite, independent, and dependent events. Conditional probability can be found in Geometry [G(13)(C)].
7(6)(E) **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 find the probabilities of a simple event and its complement and describe the relationship between the two.**	The complement can be addressed by determining the probability of an event and subtracting that probability from 1 or by using the sample space to eliminate the possible outcomes of a given event and determining the probability of the remaining outcomes of the given event. The complement of a simple event may be a composite event.
7(6)(F) **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 use data from a random sample to make inferences about a population.**	The data, whether given or collected, should be from a random sample. The inferences should be about the population from which the random sample was taken and should reflect the use of proportional reasoning. The size of a sample influences the strength of the inference about the population.
7(6)(G) **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 solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents.**	The focus of the problems will be on the proportional relationships within the data. Specificity regarding these proportional relationships is included with "part-to-whole and part-to-part comparisons and equivalents."
7(6)(H) **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 solve problems using qualitative and quantitative predictions and comparisons from simple experiments.**	SE 7(6)(H) extends 7(6)(E) to include qualitative comparisons such as "more likely" or "less likely" in addition to quantitative comparisons such as "twice as likely to roll a 6 on a 6-sided random number generator as to roll a 6 on a 12-sided random number generator." It also includes qualitative predictions such as "more likely," "less likely," or "equally likely" in addition to quantitative predictions such as the experimental results of rolling a 6 if rolling 10 times or 100 times.
7(6)(I) **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 determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces.**	Students may be expected to determine both experimental and theoretical probabilities. Data should be used for experimental probabilities, and sample spaces should be used for theoretical probabilities. Compound events include composite, independent, and dependent events. Probability based upon area can be found in Geometry [G(13)(B)].

TEKS: Expressions, Equations, and Relationships.	Supporting Information
7(7) **Expressions, equations, and relationships.** The student applies mathematical process standards to represent linear relationships using multiple representations. **The student is expected to represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form *y = mx + b*.**	Equations should include positive and negative rational number coefficients and constants.

TEKS: Expressions, Equations, and Relationships.	Supporting Information
7(8)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop geometric relationships with volume. **The student is expected to 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.**	Connecting models of prisms and pyramids to formulas for volume is in 7(8)(A) and 7(8)(B). Solving problems involving the volume of rectangular and triangular pyramids is addressed in 7(9)(A). Connecting models of cylinders and cones to formulas for volume is in grade 8. This SE supports 7(9)(A).
7(8)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop geometric relationships with volume. **The student is expected to 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.**	This SE builds to 8(6)(B), which discusses the relationship between cylinders and cones that have the same height and congruent bases.
7(8)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop geometric relationships with volume. **The student is expected to use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas.**	These concepts are applied in 8(7)(A) and 8(7)(B) as students determine volume of cylinders and cones and the surface area of cylinders.

TEKS: Expressions, Equations, and Relationships.	Supporting Information
7(9)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve geometric problems. **The student is expected to solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids.**	Side lengths may be positive rational numbers. The development of these formulas is addressed in 7(8)(A) and 7(8)(B).
7(9)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve geometric problems. **The student is expected to determine the circumference and area of circles.**	This SE focuses on circles. The development of these formulas takes place within 7(8)(C). This skill is applied in 8(7)(A) and 8(7)(B) as students determine the volume of cylinders and cones and the surface area of cylinders.
7(9)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve geometric problems. **The student is expected to determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles.**	This SE focuses on composite figures including semicircles and quarter circles. The development of these formulas takes place within 7(8)(C). Composite figures do not have to include all of the figures listed in this SE.
7(9)(D) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve geometric problems. **The student is expected to 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.**	This SE may be used to reinforce the skills of 7(9)(C). The understanding of the relationship between a solid's net and its surface area is included in 8(7)(B), which connects the composite area of the net to the appropriate formula for the surface area of the solid.

TEKS: Expressions, Equations, and Relationships.	Supporting Information
7(10)(A) **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 write one-variable, two-step equations and inequalities to represent constraints or conditions within problems.**	Problems may come from everyday life, society, and the workplace, including the application of mathematical concepts such as measurement. Equations and inequalities should include rational number coefficients and constants. This SE connects to 7(11)(A), 7(11)(B), and 7(11)(C). This SE includes inequalities. Constraints or conditions may be indicated by words such as "minimum" or "maximum." Students will need to determine if the value in the solution is part of the solution set or not.
7(10)(B) **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 represent solutions for one-variable, two-step equations and inequalities on number lines.**	This SE extends 6(9)(B) to include one-variable, two-step equations and inequalities and connects to 7(11)(A) and 7(11)(B). Solutions are rational numbers.
7(10)(C) **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 write a corresponding real-world problem given a one-variable, two-step equation or inequality.**	This SE extends 6(9)(C) to include one-variable, two-step equations and inequalities and builds to 8(8)(B), writing real-world problems with variables on both sides of the equal sign.

TEKS: Expressions, Equations, and Relationships.	Supporting Information
7(11)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve one-variable equations and inequalities. **The student is expected to model and solve one-variable, two-step equations and inequalities.**	Equations and inequalities should include rational number coefficients and constants. This SE extends to 7(10)(B), where students are expected to represent solutions on number lines.
7(11)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve one-variable equations and inequalities. **The student is expected to determine if the given value(s) make(s) one-variable, two-step equations and inequalities true.**	This SE makes explicit the meaning of a solution to an equation or an inequality. This SE extends 6(10)(B) to include one-variable, two-step equations and inequalities and connects to 7(10)(B) and 7(11)(A).
7(11)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to solve one-variable equations and inequalities. **The student is expected to write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships.**	This SE extends 6(10)(A) to include one-variable, two-step equations related to these specific applications and may include concepts developed in 6(8)(A) and 4(7)(E) as contexts. Angle relationships may include complementary, supplementary, straight, vertical, and adjacent angles.

TEKS: Measurement and Data.	Supporting Information
7(12)(A) **Measurement and data.** The student applies mathematical process standards to use statistical representations to analyze data. **The student is expected to compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads.**	This SE builds upon 6(12)(A), 6(12)(B), and 6(12)(C), in which students are expected to represent data using dot plots and box plots and describe the center, shape, and spread of the data distribution, including skewed distributions.
7(12)(B) **Measurement and data.** The student applies mathematical process standards to use statistical representations to analyze data. **The student is expected to use data from a random sample to make inferences about a population.**	The data should result from a random sample. The size of a sample influences the strength of the inference about the population. A sample of 10 from a population of 300 will not produce strong inferences. The focus is on inferences related to a population. When paired with 7(1)(B), the expectation is that students evaluate inferences about a population.
7(12)(C) **Measurement and data.** The student applies mathematical process standards to use statistical representations to analyze data. **The student is expected to compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations.**	This SE combines proportional reasoning and the connections between samples and populations. The expectation is that students make informal comparative inferences about differences between the two populations. The size of a sample influences the strength of the inference about the population. A sample of 10 from a population of 300 will not produce strong inferences. One might compare the means of both sets of data from random samples. One might compare the shape, center, and spread of data from random samples using comparative dot plots or comparative box plots to make inferences about the two populations. The SE 8(11)(B) requires students to determine the mean absolute deviation, which extends this idea.

TEKS: Personal Financial Literacy.	Supporting Information
7(13)(A) **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 calculate the sales tax for a given purchase and calculate income tax for earned wages.**	This SE builds upon 5(10)(A), where students are expected to define income tax, payroll tax, sales tax, and property tax. Students are expected to calculate these forms of taxes. This SE connects to 7(4)(D) with problems involving rates and percents. Calculation of income tax may include either being given the rate and amount or using a table.
7(13)(B) **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 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.**	This SE builds upon 5(10)(F), where students are expected to balance a simple budget. When paired with 7(1)(B), students may be asked to anticipate their responses to financial emergencies.
7(13)(C) **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 create and organize a financial assets and liabilities record and construct a net worth statement.**	This SE builds upon the knowledge from 6(14)(C), where students are expected to balance a check register that includes deposits, withdrawals, and transfers. Negative net worth is a possibility.
7(13)(D) **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 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.**	This SE builds upon 5(10)(F), where students are expected to balance a simple budget. Students may be allowed to investigate different potential careers in the development of these skills.
7(13)(E) **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 calculate and compare simple interest and compound interest earnings.**	This SE connects to 7(4)(D) as an application that includes interest. This SE builds to 8(12)(D), where students are expected to calculate and compare simple interest and compound interest earnings. Compound interest in this standard can serve as an introduction to exponential functions for most students. In the formula $A = P(1 + r)^t$, A is the amount, P is the principle, r is the rate, t is the time. In Algebra I, $1 + r$ is referred to as the factor and is given the variable b.
7(13)(F) **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 analyze and compare monetary incentives, including sales, rebates, and coupons.**	The focus of this SE is to develop knowledgeable consumers who can determine the best deal when comparison shopping. This skill can be paired with 7(13)(C) as a means to maintain a budget.