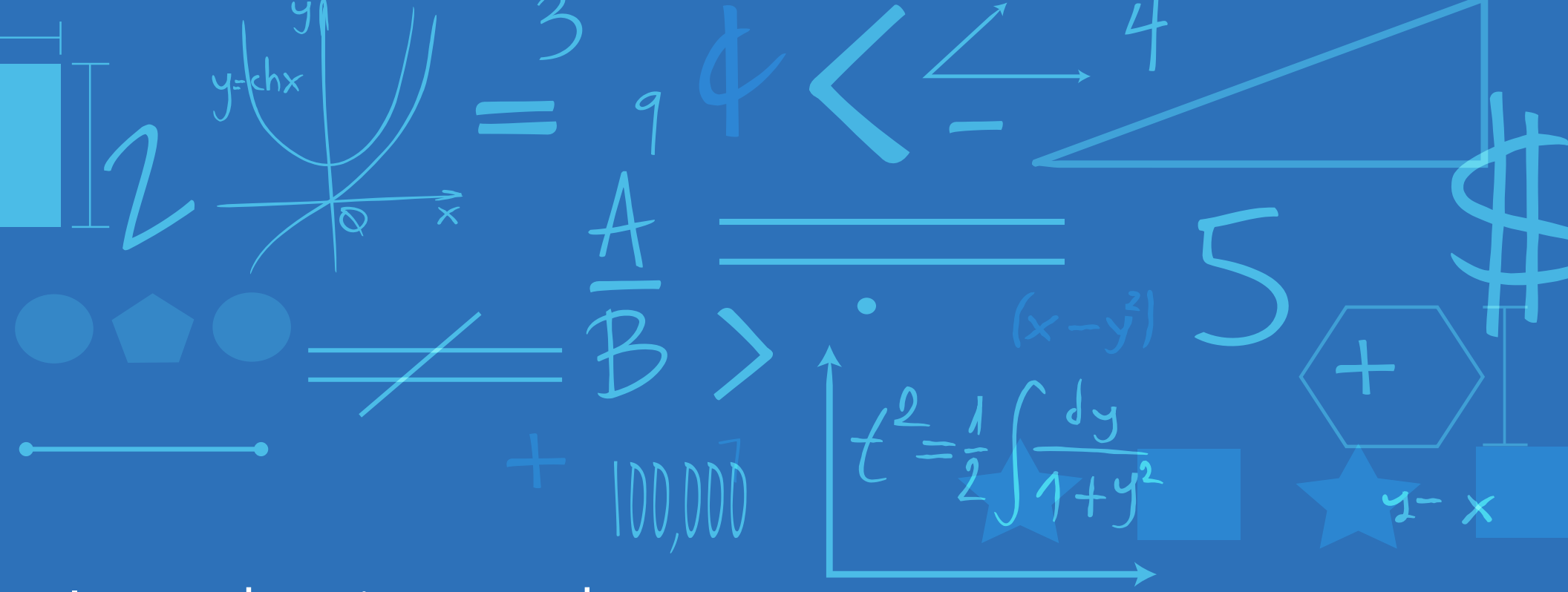

Introduction to the

Revised Mathematics TEKS

SIDE-BY-SIDE TEKS COMPARISON
GRADE 8

TEA™
TEXAS EDUCATION AGENCY

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
(a) Introduction. (1) Within a well-balanced mathematics curriculum, the primary focal points at Grade 8 are using basic principles of algebra to analyze and represent both proportional and non-proportional linear relationships and using probability to describe data and make predictions.	(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 CCRS. A focus on mathematical fluency and solid understanding allows for rich exploration of the primary focal points.	
(a) Introduction. (2) Throughout mathematics in Grades 6-8, students build a foundation of basic understandings in number, operation, and quantitative reasoning; patterns, relationships, and algebraic thinking; geometry and spatial reasoning; measurement; and probability and statistics. Students use concepts, algorithms, and properties of rational numbers to explore mathematical relationships and to describe increasingly complex situations. Students use algebraic thinking to describe how a change in one quantity in a relationship results in a change in the other; and they connect verbal, numeric, graphic, and symbolic representations of relationships. 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, reasoning, and concepts of probability to draw conclusions, evaluate arguments, and make recommendations.	(a) Introduction. (3) The primary focal areas in Grade 8 are proportionality; expressions, equations, relationships, and foundations of functions; and measurement and data. Students use concepts, algorithms, and properties of real numbers to explore mathematical relationships and to describe increasingly complex situations. Students use concepts of proportionality to explore, develop, and communicate mathematical relationships. 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 begin to develop an understanding of functional relationships. 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.	The 2012 paragraph that highlights more specifics about grade 8 mathematics content 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. The 2012 paragraph has been updated to align to the 2012 grade 8 mathematics TEKS.	

Content that is deleted by 2012 TEKS | Content that remains or is clarified in 2012 TEKS (●Stay) (●+ Addition) (⭘ Deletion) | Content that is new in 2012 TEKS

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
(a) Introduction. (3) Problem solving in meaningful contexts, language and communication, connections within and outside mathematics, and formal and informal reasoning underlie all content areas in mathematics. Throughout mathematics in Grades 6-8, students use these processes together with graphing technology and other mathematical tools such as manipulative materials to develop conceptual understanding and solve problems as they do mathematics.	(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 2012 paragraph occurs second in the Revised TEKS (2012) instead of third as in the current TEKS. This highlights the continued emphasis on process skills that now continue from Kindergarten through high school mathematics. The language of this 2012 introductory paragraph is very similar to the Mathematical process standard strand within the Revised TEKS (2012). This 2012 introductory paragraph includes generalization and abstraction with the text from 8(1)(C). This 2012 introductory paragraph states, “students will use mathematical relationships to generate solutions and make connections and predictions” instead of the text from 8(1)(E).	
	(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.		

	Old TEKS – Number, Operation, and Quantitative Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
●+	8(1)(A) **Number, operation, and quantitative reasoning.** The student understands that different forms of numbers are appropriate for different situations. **The student is expected to compare and order rational numbers in various forms including integers, percents, and positive and negative fractions and decimals.**	8(2)(D) **Number and operations.** The student applies mathematical process standards to represent and use real numbers in a variety of forms. **The student is expected to order a set of real numbers arising from mathematical and real-world contexts.**	The revised SE was removed the obvious restatement of rational numbersas "integers, percents, and positive and negative fractions and decimals." The skill of comparing is a needed skill for ordering, so the ordering could include comparing.	
			The revised SE is an extension of the current SE related to ordering numbers. A set of numbers to be ordered may include irrational numbers.	
+		8(2)(A) **Number and operations.** The student applies mathematical process standards to represent and use real 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 real numbers.**	When creating sets and subsets of real numbers, students need only distinguish between rational numbers and irrational numbers. For example, students are not expected to differentiate between transcendental real numbers and algebraic real numbers. Subsets of real numbers include counting numbers, whole numbers, integers, rational numbers, and irrational numbers. A Venn diagram is an applicable visual representation.	
−	8(1)(B) **Number, operation, and quantitative reasoning.** The student understands that different forms of numbers are appropriate for different situations. **The student is expected to select and use appropriate forms of rational numbers to solve real-life problems including those involving proportional relationships.**		The content of this SE was moved to grade 7 and is separated into 3 SEs: *Number and operations* 7(3)(A) 7(3)(B) *Proportionality* 7(4)(D)	
○	8(1)(C) **Number, operation, and quantitative reasoning.** The student understands that different forms of numbers are appropriate for different situations. **The student is expected to approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π, √2).**	8(2)(B) **Number and operations.** The student applies mathematical process standards to represent and use real numbers in a variety of forms. **The student is expected to approximate the value of an irrational number, including π and square roots of numbers less than 225, and locate that rational number approximation on a number line.**	Approximations are now limited to be those values that are less than $\sqrt{225}$. The current SE 7(1)(C) has been subsumed in the revised SE 8(2)(B). Though locating the rational number approximations of square roots on a number line has been added, it is not a new skill for students to place a rational number on a number line. The underlying processes and skills of the current TEKS expect students to use graphical and numeric models. A number line is such a model. This complements the ordering of real numbers in 8(2)(D).	
			The use of a calculator to approximate square roots has been removed.	

	Old TEKS – Number, Operation, and Quantitative Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(1)(D) **Number, operation, and quantitative reasoning.** The student understands that different forms of numbers are appropriate for different situations. **The student is expected to express numbers in scientific notation, including negative exponents, in appropriate problem situations.**	8(2)(C) **Number and operations.** The student applies mathematical process standards to represent and use real numbers in a variety of forms. **The student is expected to convert between standard decimal notation and scientific notation.**	Mathematical process standard (8)(1)(A) addresses problem situations. Specificity has been added with the clarification of changing "express numbers" to "convert between." Negative exponents are part of scientific notation. The "including" statement in the original SE is redundant.	
●	8(1)(E) **Number, operation, and quantitative reasoning.** The student understands that different forms of numbers are appropriate for different situations. **The student is expected to compare and order real numbers with a calculator.**	8(2)(D) **Number and operations.** The student applies mathematical process standards to represent and use real numbers in a variety of forms. **The student is expected to order a set of real numbers arising from mathematical and real-world contexts.**	The skill of comparing is a needed skill for ordering, so the ordering could include comparing. The use of a calculator has been removed.	
–	8(2)(A) **Number, operation, and quantitative reasoning.** The student selects and uses appropriate operations to solve problems and justify solutions. **The student is expected to select appropriate operations to solve problems involving rational numbers and justify the selections.**		The content of this SE was moved to grade 7: *Mathematical process standards* 7(1)(G) *Number and operations* 7(3)(B)	
–	8(2)(B) **Number, operation, and quantitative reasoning.** The student selects and uses appropriate operations to solve problems and justify solutions. **The student is expected to use appropriate operations to solve problems involving rational numbers in problem situations.**		The content of this SE was moved to grade 7: *Mathematical process standards* 7(1)(A) *Number and operations* 7(3)(A) 7(3)(B)	
–	8(2)(C) **Number, operation, and quantitative reasoning.** The student selects and uses appropriate operations to solve problems and justify solutions. **The student is expected to evaluate a solution for reasonableness.**		Though the content of this SE is explicitly removed, it is implicitly addressed through 8(1)(B). When instruction integrates 8(1)(B) with other content standards, students may be asked to evaluate a solution for reasonableness. The content of this SE is embedded into the application of: *Mathematical process standards* 8(1)(B)	
●	8(2)(D) **Number, operation, and quantitative reasoning.** The student selects and uses appropriate operations to solve problems and justify solutions. **The student is expected to use multiplication by a given constant factor (including unit rate) to represent and solve problems involving proportional relationships including conversions between measurement systems.**	8(5)(A) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to represent linear proportional situations with tables, graphs, and equations in the form of *y = kx*.**	The content of this SE changed strands. The emphasis is on the proportional relationships as a foundation for functions with the summarization of "multiplication by a given constant factor (including unit rate)" with *k*. Conversions between measurement systems could still be included as a context for linear proportional situations and is found in the revised SE 7(4)(E).	

Content that is deleted by 2012 TEKS | Content that remains or is clarified in 2012 TEKS (●Stay) (●+ Addition) (● Deletion) | Content that is new in 2012 TEKS

Old TEKS – Number, Operation, and Quantitative Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
		Note: Determining *k* is now a specified skill in grade 7: *Proportionality* 7(4)(C)	

	Old TEKS – Patterns, Relationships, and Algebraic Thinking Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(3)(A) **Patterns, relationships, and algebraic thinking.** The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. **The student is expected to compare and contrast proportional and non-proportional linear relationships.**	8(5)(F) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$, where $b \neq 0$.** 8(5)(H) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems.**	8(5)(F) adds specificity to the current SE with the representational forms. The current SE has been separated into two SEs. Revised SE 8(5)(F) focuses on distinguishing between proportional and non-proportional situations using multiple representations. 8(5)(H) focuses on identifying examples of proportional and non-proportional situations. This could include comparing tables, graphs, and equations for proportional and non-proportional functions. Students are not expected to interpret or use functional notation.	
●	8(3)(B) **Patterns, relationships, and algebraic thinking.** The student identifies proportional or non-proportional linear relationships in problem situations and solves problems. **The student is expected to estimate and find solutions to application problems involving percents and other proportional relationships such as similarity and rates.**	8(5)(E) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to solve problems involving direct variation.**	Pair 8(5)(E) with 8(1)(C) to include estimation. Students have been solving problems involving direct variation with the current TEKS: circumference, conversions, unit rates, similarity, percents, etc. The revised SE uses more concise language with "direct variation" replacing "find solutions to applications involving percents and other proportional relationships such as similarity and rates." Students will be expected to know when problems have two variable quantities with a constant ratio such that these variable quantities have a relationship reflecting direct variation. Identifying this ratio (k, constant of variation, or constant of proportionality) is a primary part of solving problems involving direct variation. Phrasing for direct variation includes" direct proportion" and "directly proportional." The connection to linear functions remains in high school with A(6)(G): "Relate direct variation to linear functions and solve problems involving proportional change." This will continue to be an Algebra I SE until the Revised TEKS (2012) are implemented for high school. When the new high school TEKS are implemented, Algebra I will still include work with direct variation with A(2)(D): "Write and solve equations involving direction variation."	

	Old TEKS – Patterns, Relationships, and Algebraic Thinking Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(4)**Patterns, relationships, and algebraic thinking.** The student makes connections among various representations of a numerical relationship. **The student is expected to generate a different representation of data given another representation of data (such as a table, graph, equation, or verbal description).**	8(5)(A) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to represent linear proportional situations with tables, graphs, and equations in the form of *y = kx*.** 8(5)(B) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to represent linear non-proportional situations with tables, graphs, and equations in the form of *y = mx + b*, where *b* ≠ 0.** 8(5)(I) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to write an equation in the form *y = mx + b* to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations.**	The new SEs add specificity and separate proportional ($y=kx$) from non-proportional ($y=mx+b$, $b \neq 0$) situations to support learning related to foundations of linear functions and distinguishing between m/k and b. The contexts may now inlude data from real-world applications or mathematical solutions with paired values. Equations should include rational number coefficients and constants. The focus is on discussion of proportional relationships, laying the foundation for the connection to linear functions in high school with A(5)(C): Use, translate, and make connections among algebraic, tabular, graphical, or verbal descriptions of linear functions. This will continue to be an Algebra I SE until the Revised TEKS (2012) are implemented for high school. When the new high school TEKS are implemented, Algebra I will continue work with linear equations in two variables with A(2)(C): "Write linear equations in two variables given a table of values, a graph, and a verbal description."	
●	8(5)(A) **Patterns, relationships, and algebraic thinking.** The student uses graphs, tables, and algebraic representations to make predictions and solve problems. **The student is expected to predict, find, and justify solutions to application problems using appropriate tables, graphs, and algebraic equations.**	8(5)(E) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to solve problems involving direct variation.**	Direct variation includes prediction and comparison problem situations. Pair 8(5)(E) with 8(1)(D) to include multiple representations. Pair 8(5)(E) with 8(1)(G) to include justifying solutions.	
–	8(5)(B)B **Patterns, relationships, and algebraic thinking.** The student uses graphs, tables, and algebraic representations to make predictions and solve problems. **The student is expected to find and evaluate an algebraic expression to determine any term in an arithmetic sequence (with a constant rate of change).**		The content of this SE has been separated into component parts and focused on the foundations for $y=kx$ and $y=mx+b$ in grade 6 and grade 7: *Expressions, equations, and relationships* 6(6)(B) 6(6)(C) 7(7)(A)	

Old TEKS – Patterns, Relationships, and Algebraic Thinking Strand	Current TEKS (2012)	Supporting Information	Notes
+	8(4)(A) **Proportionality.** The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. **The student is expected to use similar right triangles to develop an understanding that slope, *m*, given as the rate comparing the change in *y*-values to the change in *x*-values, $(y_2-y_1) / (x_2 - x_1)$, is the same for any two points (x_1, y_1) and (x_2, y_2) on the same line.**	These SEs comes from Algebra I (6)(A): "Develop the concept of slope as rate of change and determine slopes from graphs, tables, and algebraic representations." These SEs add specificity to regarding the concept of slope through the lens of proportionality. Teaching the formula for slope is not the intent of 8(4)(A). The intent of 8(4)(A) is to note that the rate comparing the change in *y*- and *x*-values is the same for any two points on the same line. The intent of 8(4)(B) is to connect the unit rate of a proportional relationship to the slope of the line that models the relationship. The intent of 8(4)(C) is to begin a discussion about parameter changes with linear functions through proportional and non-proportional relationships. Students will not be asked about parameter changes as they would be in Algebra I.	
+	8(4)(B) **Proportionality.** The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. **The student is expected to graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship.**		
+	8(4)(C) **Proportionality.** The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. **The student is expected to use data from a table or graph to determine the rate of change or slope and *y*-intercept in mathematical and real-world problems.**		
+	8(5)(C)**Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation.**	This SE is included to ensure that students do not incorrectly generalize that all non-proportional situations are forms of $y=mx+b$. Students will not be expected to perform regressions. This contrast will result from reviewing graphical representations of bivariate sets of data.	

Old TEKS – Patterns, Relationships, and Algebraic Thinking Strand	Current TEKS (2012)	Supporting Information	Notes
+	8(5)(G) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to identify functions using sets of ordered pairs, tables, mappings, and graphs.**	The focus of identifying functions remains proportional and non-proportional linear relationships. Students will not be expected to explore other functional relationships. This SE offers the opportunity to deepen the understanding started in earlier grades of input-output tables and multiple representations. Students should be asked to explain the definition of a function (a function is a relation for which each value from the set of first components of the ordered pairs is associated with exactly one value from the set of second components of the ordered pair) using the stated representations. Students may be asked to distinguish between relations and functions. Students are not expected to use function notation.	
+	8(8)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to use one-variable equations or inequalities in problem situations. **The student is expected to write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants.**	This represents the separation of the current 7(5)(B) into component parts that are developed in grades 6 through 8. Constraints, or conditions within the problems 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.	
+	8(8)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to use one-variable equations or inequalities in problem situations. **The student is expected to write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants.**	This represents the separation of the current 7(5)(B) into component parts that are developed in grades 6 through 8.	
+	8(8)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to use one-variable equations or inequalities in problem situations. **The student is expected to model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants.**	This represents the separation of the current 7(5)(A) into component parts that are developed in grades 6 through 8. In grades 6 and 7, students are solving one-step or two-step equations and inequalities and representing the solutions on numberlines.	

Old TEKS – Patterns, Relationships, and Algebraic Thinking Strand	Current TEKS (2012)	Supporting Information	Notes
+	8(9)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to use multiple representations to develop foundational concepts of simultaneous linear equations. **The student is expected to identify and verify the values of *x* and *y* that simultaneously satisfy two linear equations in the form *y* = *mx* + *b* from the intersections of the graphed equations.**	This serves as an introductory element for systems of equations. It also reinforces for students that two linear functions may be considered simultaneously. The focus is on the identification of the intersection point and verification that it satisfies both linear equations. Because of prior work with multiple representations, students should know that a point on a line satisfies the equation for that line. With this SE, students should identify the point of intersection and perform the appropriate calculations to verify that the *x*- and *y*-values for the point of intersection satisfy both graphed equations. Students will not be expected to solve systems of equations. Students will not be expected to work with systems of equations with infinite solutions or with no solutions. When tied to (8)(1)(A) and 8(1)(D), the expectation is that students explain the meaning of the intersection point's values in terms of the given situation. This SE serves as a conceptual base for the new Algebra I SEs (3)(H) and (5)(C).	

	Old TEKS – Geometry and Spatial Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
−	8(6)(A) **Geometry and spatial reasoning.** The student uses transformational geometry to develop spatial sense. **The student is expected to generate similar figures using dilations including enlargements and reductions.**		The content of this SE has been subsumed within SEs related to critical attributes of similarity and solving problems with similar shapes and scale drawings in grade 7: *Proportionality* 7(5)(A) 7(5)(C)	
	8(6)(B) **Geometry and spatial reasoning.** The student uses transformational geometry to develop spatial sense. **The student is expected to graph dilations, reflections, and translations on a coordinate plane.**	8(3)(B) **Proportionality.** The student applies mathematical process standards to use proportional relationships to describe dilations. **The student is expected to compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane.**	The content of this SE connects the work with critical attributes of similarity and similar figures in grade 7 to dilations on a coordinate plane. Students will be able to compare side length ratios (between the original shape and its dilation(s)) and to compare angle measures. Dilations on a coordinate plane are included in two strands: Proportionality, in order to emphasize the role of the scale factor, and Two-dimensional shapes, in order to provide a contrast to those transformations that always preserve congruence.	
		8(3)(C) **Proportionality.** The student applies mathematical process standards to use proportional relationships to describe dilations. **The student is expected to use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation.**	This SE provides specificity to the current SE. Students could have been given a rule to apply to the vertices of a geometric figure with the current SE such as $(x,y)\rightarrow(2.5x,2.5y)$ in order to graph the dilated figure. This SE limits the dilations to those with positive rational scale factors with the origin at the center of dilation.	
●+		8(10)(A) **Two-dimensional shapes.** The student applies mathematical process standards to develop transformational geometry concepts. **The student is expected to generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane.**	Students should be expected to explain that a dilation with a scale factor of 1 preserves congruence, a scale factor between 0 and 1 creates a reduction, and a scale factor that is greater than 1 creates an enlargement. Dilations on a coordinate plane are included in two strands: Proportionality, in order to emphasize the role of the scale factor, and Two-dimensional shapes, in order to provide a contrast to those transformations that always preserve congruence.	

	Old TEKS – Geometry and Spatial Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
●+		8(10)(B) **Two-dimensional shapes.** The student applies mathematical process standards to develop transformational geometry concepts. **The student is expected to differentiate between transformations that preserve congruence and those that do not.**	Dilations are limited to positive, rational scale factors. Students may differentiate between the transformations using multiple representations, including algebraic representations. Dilations that result in a reduction or enlargement do not preserve congruence. A scale factor is applied to the coordinate values of the original figure and noted symbolically as $(x,y)\rightarrow(2x,2y)$. This is in contrast to those transformations that preserve congruence such as a reflection in $(x,y)\rightarrow(-x,y)$ or a translation in $(x,y)\rightarrow(x+2,y+1)$.	
		8(10)(C) **Two-dimensional shapes.** The student applies mathematical process standards to develop transformational geometry concepts. **The student is expected to explain the effect of translations, reflections over the *x*- or *y*-axis, and rotations limited to 90°, 180°, 270°, and 360° as applied to two-dimensional shapes on a coordinate plane using an algebraic representation.**	This SE provides specificity to the current SE. Students could have been given a rule to apply to the vertices of a geometric figure with the current SE such as $(x,y)\rightarrow(x+2,y+3)$ in order to graph a translation or $(x,y)\rightarrow(-x,y)$ in order to graph a reflection. Students are not expected to explain the effects of composites of transformations.	
			This SE adds rotations about the origin on a coordinate plane. This SE provides specificity as to which rotations students should know. Students would be expected to know that $(x,y)\rightarrow(y,-x)$ represents a 90° rotation. Students would be expected to know that a 180° rotation may have the same result as the composition of a translation and a reflection.	
–	8(7)(A) **Geometry and spatial reasoning.** The student uses geometry to model and describe the physical world. **The student is expected to draw three-dimensional figures from different perspectives.**		This skill is not included within the Revised TEKS (2012).	
–	8(7)(B) **Geometry and spatial reasoning.** The student uses geometry to model and describe the physical world. **The student is expected to use geometric concepts and properties to solve problems in fields such as art and architecture.**		This is subsumed within 8(1)(A) as art and architecture form examples of everyday life, society, and the workplace.	

	Old TEKS – Geometry and Spatial Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(7)(C) **Geometry and spatial reasoning.** The student uses geometry to model and describe the physical world. **The student is expected to use pictures or models to demonstrate the Pythagorean Theorem.**	8(6)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop mathematical relationships and make connections to geometric formulas. **The student is expected to use models and diagrams to explain the Pythagorean theorem.**	This is a phrasing change. With the new SE, students would use a diagram instead of a picture. "Diagram" is a better word choice as it includes the justification of relationships. A picture may just be a sketch of the model which may or may not include a justification of relationships. Students are to explain the Pythagorean Theorem rather than just demonstrate it. With the current SE, students might use tangrams to rearrange the areas to show the Pythagorean Theorem without explaining the relationship between the side lengths and the area of the corresponding squares and the relationships between the areas of the squares formed by the side lengths of a right triangle. With the new SE, students may demonstrate a model of the Pythagorean Theorem to support their explanations.	
–	8(7)(D) **Geometry and spatial reasoning.** The student uses geometry to model and describe the physical world. **The student is expected to locate and name points on a coordinate plane using ordered pairs of rational numbers.**		The content of this SE and the current SE 7(7)(A) was moved to grade 6. *Measurement and data* 6(11)(A)	
+		8(3)(A) **Proportionality.** The student applies mathematical process standards to use proportional relationships to describe dilations. **The student is expected to generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation.**	While this SE is new to grade 8, it is not new content for students. This SE introduces the term "dilation" with similar figures. In grade 7, students identify the critical attributes of similarity. These attributes include the generalization that the ratio of corresponding sides of similar figures are proportional. Current grade 7 SE: *Geometry and spatial reasoning* 7(6)(D) Revised TEKS (2012) grade 7 SE: *Proportionality* 7(5)(A)	

Old TEKS – Geometry and Spatial Reasoning Strand	Current TEKS (2012)	Supporting Information	Notes
+	8(8)(D) **Expressions, equations, and relationships.** The student applies mathematical process standards to use one-variable equations or inequalities in problem situations. **The student is expected to use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.**	An informal argument in mathematics refers to the use of everyday language within a conversation about the mathematics. It is not a formal proof with formal language and notation. Integrate informal arguments for the angle-angle criterion for similarity of triangles into work with similarity and dilations to reinforce the work in grade 7 with critical attributes of similarity. An example of an informal argument might be the following: *We know that two triangles that have 3 congruent angles are similar. We proved that in 7th grade. If we know the measures of 2 angles of a triangle, the third angle is the difference between 180° and the sum of these 2 angles. If 2 triangles have 2 angles that are congruent, the third angles are congruent because we'll get the same result when we subtract the sum of the angles from 180°. This means that all 3 angles of both triangles are congruent so the triangles are similar. This means I only really need to know that 2 angles of 2 triangles are congruent to tell triangle similarity.* Integrate informal arguments for the angle sum and exterior angles of triangles into work with expressions and equations.	

	Old TEKS – Measurement Strand	Current TEKS (2012)	Supporting Information	Notes
–	8(8)(A) **Measurement.** The student uses procedures to determine measures of three-dimensional figures. **The student is expected to find lateral and total surface area of prisms, pyramids, and cylinders using concrete models and nets (two-dimensional models).**		The content of this SE was moved to grade 7: *Expressions, equations, and relationships* 7(9)(D)	
●	8(8)(B) **Measurement.** The student uses procedures to determine measures of three-dimensional figures. **The student is expected to connect models of prisms, cylinders, pyramids, spheres, and cones to formulas for volume of these objects.**	8(6)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop mathematical relationships and make connections to geometric formulas. **The student is expected to describe the volume formula *V = Bh* of a cylinder in terms of its base area and its height.**	The use of the formula $V = Bh$ begins in grade 5 for rectangular prisms with 5(4)(G) and is applied with 6(8)(D). The use of the formula $V=Bh$ for triangular prisms begins in grade 7 with 7(8)(B) and is applied with 7(9)(A).	
◎		8(6)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to develop mathematical relationships and make connections to geometric formulas. **The student is expected to model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas.**	The use of the formula $V=(1/3)Bh$ for rectangular and triangular pyramids begins in grade 7 with 7(8)(A) and 7(8)(B) and is applied with 7(9)(A).	
●	8(8)(C) **Measurement.** The student uses procedures to determine measures of three-dimensional figures. **The student is expected to estimate measurements and use formulas to solve application problems involving lateral and total surface area and volume.**	8(7)(A) **Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to solve problems. **The student is expected to solve problems involving the volume of cylinders, cones, and spheres.**	Specificity of solids has been provided. Estimation is still included, as any work with pi will require an estimation of pi. Students are expected to estimate pi as 3.14 or 22/7 as appropriate to the problem.	
●		8(7)(B) **Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to solve problems. **The student is expected to use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders.**	The previous knowledge that is referenced is determining surface area from nets (revised SE 7(9)(D)). Previous knowledge also includes how to determine composite area (revised SE 7(9)(C)). The focus for grade 8 shifts to algebraic representations related to measurement. Specificity is provided for prisms. Pyramids and cones are not included.	

	Old TEKS – Measurement Strand	Current TEKS (2012)	Supporting Information	Notes
●+	8(9)(A) **Measurement.** The student uses indirect measurement to solve problems. **The student is expected to use the Pythagorean Theorem to solve real-life problems.**	8(7)(C) **Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to solve problems. **The student is expected to use the Pythagorean Theorem and its converse to solve problems.**	Pair 8(7)(C) with 8(1)(A) to include real-life problems. Including the converse of the Pythagorean Theorem adds specificity to the SE. A real-life problem related to whether or not a right triangle exists, such as checking for a right angle when constructing intersecting walls based on lengths, would be included within the current SE.	
		8(7)(D) **Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to solve problems. **The student is expected to determine the distance between two points on a coordinate plane using the Pythagorean Theorem.**	This is a mathematical application of the Pythagorean Theorem. Students will not be expected to use the distance formula. The derivation of the distance formula using the Pythagorean Theorem remains Geometry.	
–	8(9)(B) **Measurement.** The student uses indirect measurement to solve problems. **The student is expected to use proportional relationships in similar two-dimensional figures or similar three-dimensional figures to find missing measurements.**		The content of this SE was moved to grade 7: *Expressions, equations, and relationships* 7(5)(C)	
●	8(10)(A) **Measurement.** The student describes how changes in dimensions affect linear, area, and volume measures. **The student is expected to describe the resulting effects on perimeter and area when dimensions of a shape are changed proportionally.**	8(10)(D) **Two-dimensional shapes.** The student applies mathematical process standards to develop transformational geometry concepts. **The student is expected to model the effect on linear and area measurements of dilated two-dimensional shapes.**	Describing the effects in the original SE and modeling the effect in the revised SE may both be accomplished numerically or algebraically. Here are 2 examples: • When a polygon is dilated by a factor of 2, its perimeter increases by a factor of 2, and its area increases by a factor of 4. • When a polygon is dilated by a factor of x, its perimeter increases by a factor of x, and its area increases by a factor of x^2.	
–	8(10)(B) **Measurement.** The student describes how changes in dimensions affect linear, area, and volume measures. **The student is expected to describe the resulting effect on volume when dimensions of a solid are changed proportionally.**		The content of this SE was moved to Geometry: *Two-dimensional and three-dimensional figures* Geometry(10)(B)	

	Old TEKS – Probability and Statistics Strand	Current TEKS (2012)	Supporting Information	Notes
–	8(11)(A) **Probability and statistics.** The student applies concepts of theoretical and experimental probability to make predictions. **The student is expected to find the probabilities of dependent and independent events.**		The content of this SE was moved to grade 7: *Proportionality* 7(6)(I)	
–	8(11)(B) **Probability and statistics.** The student applies concepts of theoretical and experimental probability to make predictions. **The student is expected to use theoretical probabilities and experimental results to make predictions and decisions.**		The content of this SE was moved to grade 7: *Proportionality* 7(6)(C) 7(6)(D)	
–	8(11)(C) **Probability and statistics.** The student applies concepts of theoretical and experimental probability to make predictions. **The student is expected to select and use different models to simulate an event.**		The content of this SE was moved to grade 7: *Proportionality* 7(6)(B)	
–	8(12)(A) **Probability and statistics.** The student uses statistical procedures to describe data. **The student is expected to use variability (range, including interquartile range (IQR)) and select the appropriate measure of central tendency to describe a set of data and justify the choice for a particular situation.**		The content of this SE was moved to grade 6: *Measurement and data* 6(12)(C) 6(12)(D)	
●	8(12)(B) **Probability and statistics.** The student uses statistical procedures to describe data. **The student is expected to draw conclusions and make predictions by analyzing trends in scatterplots.**	8(5)(D) **Proportionality.** The student applies mathematical process standards to use proportional and non-proportional relationships to develop foundational concepts of functions. **The student is expected to use a trend line that approximates the linear relationship between bivariate sets of data to make predictions.**	This SE adds specificity to the current SE. The trend line is identified as a tool for making predictions by approximating the linear relationship.	
		8(11)(A) **Measurement and data.** The student applies mathematical process standards to use statistical procedures to describe data. **The student is expected to construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data.**	This SE adds specificity to the types of conclusions that may be drawn with the focus on association. Language such as "positive trend," "negative trend" and "no trend" may be used to describe the association. Constructing a scatterplot was implicit within the current 8(4) as a graphical representation.	
–	8(12)(C) **Probability and statistics.** The student uses statistical procedures to describe data. **The student is expected to select and use an appropriate representation for presenting and displaying relationships among collected data, including line plots, line graphs, stem and leaf plots, circle graphs, bar graphs, box and whisker plots, histograms, and Venn diagrams, with and without the use of technology.**		These representations are included in previous grades within the Revised TEKS (2012). Line graphs are not included in the Revised TEKS (2012).	

Content that is deleted by 2012 TEKS | Content that remains or is clarified in 2012 TEKS (●Stay) (●+ Addition) (⭘ Deletion) | Content that is new in 2012 TEKS

	Old TEKS – Probability and Statistics Strand	Current TEKS (2012)	Supporting Information	Notes
−	8(13)(A) **Probability and statistics.** The student evaluates predictions and conclusions based on statistical data. **The student is expected to evaluate methods of sampling to determine validity of an inference made from a set of data.**		Pair the grade 7 Proportionality SEs that address probability with process standard 7(1)(G) to justify the argument that an inference drawn from a set of data is valid. Students may evaluate methods (probabilistic models) of sampling or they may evaluate the effect of sample size.	
−	8(13)(B) **Probability and statistics.** The student evaluates predictions and conclusions based on statistical data. **The student is expected to recognize misuses of graphical or numerical information and evaluate predictions and conclusions based on data analysis.**		Pair the SEs including graphing with process standards 7(1)(D) and 7(1)(G) to evaluate the appropriateness of data, representation, predictions, and conclusions within other grade levels.	
+		8(11)(B) **Measurement and data.** The student applies mathematical process standards to use statistical procedures to describe data. **The student is expected to determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points.**	In grade 6, students represent data with box plots which use quartiles to show the spread of data relative to the median. This representation does not take into account every data point explicitly as the data are clustered into quartiles. The variation focuses on the median. To look at the spread of data where each value is taken into consideration, one may use the mean absolute deviation and comparison to the mean. The variation or total variability focuses on the mean. Students should be able to calculate the mean absolute deviation and compare each data point to the mean absolute deviation in order to describe data. Combined with process standards 8(1)(D), 8(1)(F), and 8(1)(G), the expectation is that students look at the spread and shape of data through the lens of variation from the mean.	
+		8(11)(C) **Measurement and data.** The student applies mathematical process standards to use statistical procedures to describe data. **The student is expected to simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected.**	Pair 8(11)(C) with mathematical process standard 8(1)(G) to justify the argument that a random sample is needed to provide representation. One may build on data collection with probabilistic events in grade 7 to draw comparisons to sampling from a population with known characteristics.	

	Old TEKS – Underlying Processes and Mathematical Tools Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(14)(A) **Underlying processes and mathematical tools.** The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. **The student is expected to identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics.**	8(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.**	The focus has shifted to application. The opportunities for application have been consolidated into three areas: everyday life, society, and the workplace. This SE, when tagged to a content SE, allows for increased rigor through connections outside the discipline.	
●	8(14)(B) **Underlying processes and mathematical tools.** The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. **The student is expected to use a problem-solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.**	8(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**.	The 2012 SE restates and condenses 8(14)(B) and 8(14)(C). **Problem-Solving Model** **Current TEKS** / **Revised TEKS (2012)** Understanding the problem / Analyzing given information Making a plan / Formulating a plan or strategy Carrying out the plan / Determining a solution / Justifying the solution Evaluating the solution for reasonableness / Evaluating the problem-solving process and the reasonableness of the solution	
●	8(14)(C) **Underlying processes and mathematical tools.** The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. **The student is expected to select or develop an appropriate problem-solving strategy from a variety of different types, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem.**			
●	8(14)(D) **Underlying processes and mathematical tools.** The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school. **The student is expected to select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems.**	8(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" has been inserted into the revised SE. This implies that students are assessing which tool to apply rather than trying only one or all.	

	Old TEKS – Underlying Processes and Mathematical Tools Strand	Current TEKS (2012)	Supporting Information	Notes
●	8(15)(A) **Underlying processes and mathematical tools.** The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models. **The student is expected to communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models.**	8(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 has expanded to include reasoning and the implications of mathematical ideas and reasoning. The list of representations is now summarized with "multiple representations" with specificity added for symbols and diagrams.	
●	8(15)(B) **Underlying processes and mathematical tools.** The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models. **The student is expected to evaluate the effectiveness of different representations to communicate ideas.**	8(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 is extended to include organizing and recording mathematical ideas in addition to communicating them. 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.	
●	8(16)(A) **Underlying processes and mathematical tools.** The student uses logical reasoning to make conjectures and verify conclusions. **The student is expected to make conjectures from patterns or sets of examples and nonexamples.**	8(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 revised SE extends the current SE to allow for additional means to analyze relationships and to form connections with mathematical ideas past conjecturing and sets of examples and non-examples. Students should still form conjectures based on patterns or sets of examples and non-examples.	
●	8(16)(B) **Underlying processes and mathematical tools.** The student uses logical reasoning to make conjectures and verify conclusions. **The student is expected to validate his/her conclusions using mathematical properties and relationships.**	8(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 revised SE clarifies "validates his/her conclusions" with displays, explanations, and justifications. The conclusions should focus on mathematical ideas and arguments. Precise mathematical language is expected.	

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
+	8(12)(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 solve real-world problems comparing how interest rate and loan length affect the cost of credit.**		
+	8(12)(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 calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator.**		
+	8(12)(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 explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time.**		
+	8(12)(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 calculate and compare simple interest and compound interest earnings.**		
+	8(12)(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 identify and explain the advantages and disadvantages of different payment methods.**	Different payment methods may include stored-value cards, debit cards, and online payment systems.	
+	8(12)(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 situations to determine if they represent a financially responsible decision and identify the benefits of financial responsibility and the costs of financial irresponsibility.**		

Old TEKS	Current TEKS (2012)	Supporting Information	Notes
+	8(12)(G) **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 estimate the cost of a 2-year and 4-year college education including family contribution and devise a periodic savings plan for accumulating the money needed to contribute to thte total cost of attendance for at least the 1st year of college.**		