

# Introduction to the Revised Mathematics TEKS 

SIDE-BY-SIDE TEKS COMPARISON GRADE 6

TEXAS EDUCATION AGENCY

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## Grade 6 - Mathematics

## Old teks <br> (a) Introduction.

(1) Within a well-balanced mathematics curriculum, the primary focal points at Grade 6 are using ratios to describe direct proportional relationships involving number, geometry, measurement, probability, and adding and subtracting decimals and fractions.

## (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.

## Current TEKS (2012)

(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.

## (a) Introduction

(3)The primary focal points at Grade 6 are number 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. 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 typmasis on algebra readiness skills emphasis on algebra readiness skills graphing technology.

## he 2012 paragraph that highlights more

 specifics about grade 6 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 6 mathematics TEKS.

## Grade 6 - Mathematics

| Old TEKS |
| :--- |
| (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. |

## Current TEKS (2012)

## (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 mode that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problemsolving 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 mathematica 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.

Supporting I nformation
Notes
This 2012 paragraph occurs second in the Revised TEKS (2012) instead of third as in the urrent 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 6(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 6(1)(E)
(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, Operations, and

6(2)(C) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms.
$6(1)(A)$ Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a

+ variety of equivalent forms
The student is expected to compare and order non-negative rational numbers.

The student is expected to locate, compare, and order integers and rational numbers using a number line.
(2)(D) 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 order a set of rational numbers arising from mathematical and real-world contexts.

Supporting I nformation
Notes
The revised SE continues the comparing and ordering of positive rational numbers.

The revised SE extends the comparing and ordering of positive rational numbers to include integers and negative rational numbers.

The revised SE adds the number line as a tool for locating, comparing, and ordering integers and rational numbers.

The revised SE continues the ordering of
positive rational numbers. When the current SE is paired with the current SE $6(11)(A)$, the expectation is that students order numbers arising from mathematical and real-world contexts.

The revised SE extends the ordering of positive rational numbers to include integers and negative rational numbers.

Specificity has been added regarding forms of rational numbers to include percents which is developed under the current $6(3)(B)$ in the Patterns, relationships, and algebraic thinking strand. Ideas related to percent have been grouped together under the Proportionality strand in the revised SE.

When the current SE is paired with the current $6(11)(A)$, the expectation is that students order numbers arising from mathematical and realworld contexts, including those involving money.

6(5)(C) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships.

The student is expected to use equivalent fractions, decimals, and percents to show equal parts of the same whole.

Specificity has been added regarding the accuracy of the mathematics. The equivalent values should be used to describe the same whole.

6(4)(G) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to generate equivalent forms of fractions, decimals, and percents using real-world problems,

The student is expected to generate equivalent forms of rational numbers including whole numbers, fractions, and decimals.
[Also from current 7.1B]

## 6(1)(B) Number, operation, and

quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms
including problems that involve money.

## Grade 6 - Mathematics

| Old TEKS - Number, Operations, and Quantitative Reasoning | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: |
| $6(1)(C)$ Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms. | 6(2)(B) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. | Specificity has been added regarding the concept of integers with the identification of a number and its opposite and the identification of a number and its absolute value. Because absolute value is the distance of a value from zero on a number line, this SE implies the use of a number line. |  |
| The student is expected to use integers to represent real-life situations. | The student is expected to identify a number, its opposite, and its absolute value. | When the revised SE 6(2)(B) is coupled with the revised SE 6(1)(A), the expectation is that students apply the skill of identifying integers everyday life. |  |
|  |  | The revised SE adds the use of the absolute value symbol and the formal mathematics vocabulary as students identify a number and its opposite as being the same distance from zero, or absolute value. |  |

## 6(1)(D) Number, operation, and

 quantitative reasoning. The studentrepresents and uses rational numbers in a variety of equivalent forms

The student is expected to write prime factorizations using exponents.

6(7)(A) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations.

The student is expected to generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization.

Specificity has been added regarding the num or integers with the identification of a f a number and its absolute value. Because aro value is the distance of a value from on a number line, this SE implies the use

When the revised SE 6(2)(B) is coupled with the revised SE 6(1)(A), the expectation is that students apply the skill of identifying integers

The revised SE adds the use of the absolute value symbol and the formal mathematics ocabulary as students identify a number and zero, or absolute value

The current SE 6(1)(D) has been subsumed within the revised SE 6(7)(A)

6(1)(E) Number, operation, and quantitative reasoning. The studen represents and uses rational numbers in a variety of equivalent forms.
-
The student is expected to identify factors of a positive integer, common factors, and the greatest common factor of a set of positive integers.

This skill is not included within the Revised TEKS (2012).

6(1)(F) Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms.

- The student is expected to identify The student is expected to identify
multiples of a positive integer and common multiples and the least common multiple of a set of positive integers.

This skill is not included within the Revised TEKS (2012).

## Grade 6 - Mathematics

| Old TEKS - Number, Operations, and Quantitative Reasoning | Current TEKS (2012) | Supporting Information | Notes |
| :---: | :---: | :---: | :---: |

6(2)(A) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.

The student is expected to model addition and subtraction situations involving fractions with objects, pictures, words and numbers.

The content of this SE has moved to grade 5: Number and operations 5(3)(H)

## 6(2)(B) Number, operation, and

 quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.The student is expected to use addition and subtraction to solve problems involving fractions and decimals.

The content of this SE has moved to grade 5: Number and operations

6(2)(C) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.

+ The student is expected to use multiplication and division of whole numbers to solve problems including situations involving equivalent ratios and rates.
(2)(D) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.
- The student is expected to estimate and round to approximate reasonable results and to solve problems where exact answers are not required.


## 6(2)(E) Number, operation, an

 quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve problems and justify solutions.$+$
The student is expected to use order of operations to simplify whole number expressions (without exponents) in problem solving situations.

6(3)(E) Number and operations. The studen applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions.

The student is expected to multiply and divide positive rational numbers fluently.
tudents continue work with multiplication and division. Ratios and rates are related to rational number concepts.

The revised SE 6(3)(E) expects students to multiply and divide positive fractions and decimal values fluently. The foundation for this fluency begins in grade 5 with revised SEs $5(3)(D), 5(3)(E), 5(3)(F), 5(3)(G), 5(3)(1)$, $5(3)(\mathrm{J})$, and $5(3)(\mathrm{L})$

The content of this SE has moved to grade 5: Number and operations

5(3)(A)

## 6(7)(A) Expressions, equations, and

 relationships. The student applies mathematical process standards to develop concepts of expressions and equations.The student is expected to generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization.

The revised SE 6(7)(A) rephrases "simplify" as "generate equivalent numerical expressions." This is a more accurate statement.

The inclusion of whole number exponents brings content that was in grade 7 with the current SE 7(2)(E) to grade 6 with the Revised TEKS (2012).

| Old TEKS - Number, Operations, and Quantitative Reasoning | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: |
| $\uparrow$ | 6(2)(A) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. <br> The student is expected to classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers. | A Venn diagram is an applicable visual representation. |  |
| $\not+$ | 6(2)(E) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. <br> The student is expected to extend representations for division to include fraction notation such as $\mathbf{a} / \mathbf{b}$ represents the same number as $\mathbf{a} \div \mathbf{b}$ where $\mathbf{b} \neq 0$. | In the current SE, students have seen fraction notation with whole number values when writing expressions and equations. The revised SE adds the understanding that one can divide the numerator of a fraction by its denominator to yield a decimal equivalent. <br> This extends the notion that $4 / 4=1,5 / 4=11 / 4$ or $1.25,6 / 4=12 / 4$ or 1.5 , etc. to thinking about $1 / 4$ as 0.25 using the standard algorithm for division to yield the same result as converting $1 / 4$ into a fraction with a denominator of 100 . |  |
| $+$ | 6(3)(A) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. <br> The student is expected to recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values. | This understanding is implicit in the current SE $7(2)(A)$. It is made explicit with this grade 6 SE. |  |
| $\not+$ | 6(3)(B) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. <br> The student is expected to determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one. | This understanding is implicit in the current SE $7(2)(A)$. It is made explicit with this grade 6 SE. |  |
| $\uparrow$ | $6(3)(C)$ Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. <br> The student is expected to represent integer operations with concrete models and connect the actions with the models to standardized algorithms. | The inclusion of integer operations brings content that was in grade 7 with the current SE $7(2)(C)$ to grade 6 with the Revised TEKS (2012). |  |


| < | 4 C | 3 | K | W8 |
| :---: | :---: | :---: | :---: | :---: |
| Grade 6 - Mathematics |  |  |  |  |
| Old TEKS - Number, Operations, and Quantitative Reasoning | Current TEKS (2012) | Supporting Information | Notes |  |
| + | 6(3)(D) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. <br> The student is expected to add, subtract, multiply, and divide integers fluently. | The inclusion of integer operations brings content that was in grade 7 with the current SE 7(2)(C) to grade 6 with the Revised TEKS (2012). |  |  |


| Old TEKS - Patterns, Relationships, and Algebraic Thinking | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: |

6(3)(A) Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional
relationships.
The student is expected to use ratios to describe proportional situations.

6(3)(B) Patterns, relationships, and algebraic thinking. The student solves problems involving direct proportional
relationships
The student is expected to represent ratios and percents with concrete models, fractions, and decimals.

6(4)(C) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to give examples of ratios as multiplicative comparisons of two quantities describing the same attribute.

Specificity has been added regarding the description of the proportional situations described by ratios.

6(4)(D) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients.

Specificity has been added regarding the description of the proportional situations described by rates, a specific form of ratios.

6(4)(E) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to represent ratios and percents with concrete models, fractions, and decimals.

6(4)(F) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to represent
benchmark fractions and percents such as
$1 \%$, 10\% , 25\%, $331 / 3 \%$, and multiples of these values using $\mathbf{1 0}$ by 10 grids, strip diagrams, number lines, and numbers.

The language of the current SE matches the language of the revised SE.

Specificity has been added regarding percent benchmarks and models.

Old TEKS - Patterns, Relationships,
$6(3)(C)$ Patterns, relationships, and algebraic thinking. The student solvesproblems involving direct proportional
relationships.
The student is expected to use ratios to make predictions in proportional situations.

6(4)(A) Patterns, relationships, and algebraic thinking. The student uses letters as variables in mathematical expressions to describe how one quantity changes when a

+ related quantity changes
The student is expected to use tables and symbols to represent and describe proportional and other relationships such as those involving conversions, arithmetic sequences ( with a constant rate of change), perimeter and area.

6(4)(B) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations.

The student is expected to apply qualitative and quantitative reasoning to solve prediction and comparison realworld problems involving ratios and rates.

Supporting I nformation
Specificity has been added regarding the description of the proportional situations to include prediction situations and comparison that involve ratios and rates

Quantitative reasoning focuses on the relationships between and within equivalent ratios.
When given two ratios $\mathrm{a} / \mathrm{b}$ and $\mathrm{e} / \mathrm{f}$, qualitative reasoning involves considering $a / b=c$ and $\mathrm{e} / \mathrm{f}=\mathrm{g}$ and how qualitative changes in a or b and $e$ or $f$ affect $c$ and $g$ and how these qualitative changes affect comparisons of $c$ and g.

For example, $a / b$ describes the ratio of lemon juice to water for Maria's lemonade. C describes how "lemony" her lemonade is. E/f describes the ratio of lemon juice to water for Mark's lemonade. G describes how "lemony" his lemonade is. If Maria's and Mark's emonades have the same amount of "lemony" flavor, what happens if Maria add lemons? What is she adds lemons and water? Specificity has been added regarding symbols and their use. The algebraic representations should be in the form $y=a x$ or $y=x+a$.

Revised SE 6(4)(A) is a building block for revised SEs 7(7)(A), 8(5)(B), and 8(5)(1).
elationships.
Students are expected to compare two rules to differentiate between additive and
multiplicative representations. This is a building block for work with proportional and non-
proportional situations in grades 7 and 8.
The revised SE focuses on proportional relationships rather than "other relationships." Specificity has been added with the inclusion of scale factors.

Students are expected to graph these relationships.

| Old TEKS - Patterns, Relationships, and Algebraic Thinking | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: |

6(4)(A) Patterns, relationships, and algebraic thinking. The student uses letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes

The student is expected to use tables and symbols to represent and describe proportional and other relationships such as those involving conversions, arithmetic sequences ( with a constant rate of change), perimeter and area.

6(6)(C) Expressions, equations and relationships. The student applies mathematical process standards to use multiple representations to describe algebraic relationships

The student is expected to represent a given situation using verbal descriptions, tables, graphs, and equations in the form $\mathbf{y}=\mathbf{k x}$ or $\mathbf{y}=\mathbf{x}+\mathbf{b}$.

6(4)(B) Patterns, relationships, and algebraic thinking. The student uses letters as variables in mathematical expressions to describe how one quantity changes when a related quantity changes

The student is expected to use tables of data to generate formulas representing relationships involving perimeter, area, volume of a rectangular prism, etc.

6(8)(C) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems.

The student is expected to write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.

Revised SE 6(4)(A) is a building block for
revised SEs 7(7)(A), 8(5)(B), and 8(5)(1)

Students are expected to graph these relationships.
When the revised SE is paired with 6(1)(D) and
$6(1)(G)$, the expectation is that students use
tables to generate equations as appropriate to
the problem.
Specificity has been added for formulas.
The dimensions may be positive rational
numbers.
In the revised SE, perimeter is addressed in
grade 4 and grade 5:
Algebraic reasoning
4(5)(C)
4(5)(D)
5(4)(H)

6(6)(B) Expressions, equations and relationships. The student applies mathematical process standards to use multiple representations to describe algebraic relationships.

The student is expected to write an equation that represents the relationship between independent and dependent

## quantities from a table.

6 (9)(A) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations.

The student is expected to write onevariable, one-step equations and inequalities to represent constraints or conditions within problems.

The revised SE extends revised SE 5(8)(C) with an equation from an input-output table.

Specificity has been added: the linear relationships will be represented with a table of paired values.

Specificity has been added regarding the type of equations which may be written in grade 6.

This SE is a building block for one-variable,
two-step equations and inequalities with
7(10)(B).
The revised SE extends to include 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.

| Grade 6 - Mathematics |  |  |  |
| :---: | :---: | :---: | :---: |
| Old TEKS - Patterns, Relationships, and Algebraic Thinking | Current TEKS (2012) | Supporting I nformation | Notes |
| + | 6(5)(B) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. <br> The student is expected to solve realworld problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole including the use of concrete and pictorial models. | This extends the ideas in the current 6(3)(B) and the revised SE 6(4)(E). <br> Concrete and pictorial models include strip diagrams. <br> The parts and the percentages are less than the whole. For example, a student may determine the amount of tax for a given item. However, the student would not be expected to determine the pre-tax price of an item given the sales tax rate and the poste-tax price. |  |
| + | 6(6)(A) Expressions, equations, and relationships. The student applies mathematical process standards to use multiple representations to describe algebraic relationships. <br> The student is expected to identify independent and dependent quantities from tables and graphs. | The revised SE extends revised SE 5(8)(C) which includes an input-output table which implies independent and dependent quantities. <br> The tables and graphs should be labeled with the related quantities. |  |
| + | 6(7)(B) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. <br> The student is expected to distinguish between expressions and equations verbally, numerically, and algebraically. | Students have previously been exposed to the terms expressions and equations. This student expectation makes the distinction explicit. Verbally, students are expected to explain that equations are sentences that state that two things are equal. An expression is a phrase that represents a single number. <br> If an equation contains a variable, it may be proved true or false by replacing the variable with a number. If an expression contains a variable, the expression may represent different numbers depending on the value assigned to the variable with a number. <br> An equation includes an equals sign. |  |
| + | 6(7)(C) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations <br> The student is expected to determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations. | For the SE expressions may be entirely numeric or a mixture of numbers and one variable. <br> The order of operations and properties of operations may be applied to determine if the two expressions are equivalent. |  |


| Grade 6 - Mathematics |  |  |  |
| :---: | :---: | :---: | :---: |
| Old TEKS - Patterns, Relationships, and Algebraic Thinking | Current TEKS (2012) | Supporting I nformation | Notes |
| $+$ | 6(7)(D) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. <br> The student is expected to generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties. | For this SE, expressions may be entirely numeric or a mixture of numbers and one variable. |  |
| $+$ | 6(9)(B) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. <br> The student is expected to represent solutions for one-variable, one-step equations and inequalities on number lines. | This SE is a building block for one-variable, two-step equations and inequalities with 7(10)(B). |  |
| $+$ | 6(9)(C) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. <br> The student is expected to write corresponding real-world problems given one-variable, one-step equations or inequalities. | This represents the separation of the current 7 (5)(B) into component parts that are developed in grades 6 through 8. <br> The revised SE extends to include inequalities. |  |
| $+$ | 6(10)(A) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. <br> The student is expected to model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts. | This SE is a building block for one-variable, two-step equations and inequalities with $7(11)$ (C) and may include concepts developed in $6(8)(A)$ and $4(7)(E)$ as contexts. <br> Geometric concepts may include complementary and supplementary angles. |  |
| $+$ | 6(10)(B) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. <br> The student is expected to determine if the given value(s) make(s) one-variable, one-step equations or inequalities true. | This SE makes explicit the meaning of a solution to an equation or an inequality. <br> This SE is a building block for one-variable, two-step equations and inequalities with 7(11)(B). |  |

## Grade 6 - Mathematics

|  | Old TEKS - Geometry and Spatial Reasoning | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: | :---: |
| - | 6(6)(A) Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles. <br> The student is expected to use angle measurements to classify angles as acute, obtuse, or right. |  | The content of this SE was moved to grade 4: Geometry and measurement $4(6)(C)$ |  |
| $0+$ | 6(6)(B) Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles. <br> The student is expected to identify relationships involving angles in triangles and quadrilaterals. | 6(8)(A) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems. <br> The student is expected to extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle. | Specificity as been provided for the relationships involving triangles. <br> The revised SE adds determining when three lengths form a triangle. <br> Relationships involving quadrilaterals are not included within the Revised TEKS (2012). |  |
|  | 6(6)(C) Geometry and spatial reasoning. The student uses geometric vocabulary to describe angles, polygons, and circles. <br> The student is expected to describe the relationship between radius, diameter, and circumference of a circle. |  | The content of this SE has moved to grade 7: Proportionality $7(5)(B)$ |  |
| - + | 6(7) Geometry and spatial reasoning. The student uses coordinate geometry to identify location in two dimensions. <br> The student is expected to locate and name points on a coordinate plane using ordered pairs of non-negative rational numbers. | 6(11) Measurement and data. The student applies mathematical process standards to use coordinate geometry to identify locations on a plane. <br> The student is expected to graph points in all four quadrants using ordered pairs of rational numbers. | Students will continue to graph ordered pairs of non-negative rational numbers. <br> The revised SE 6(11) extends to graphing ordered pairs of rational numbers in all four quadrants from the current SE 7(7)(A) and 8(7)(D). |  |

Current TEKS (2012)
Supporting I nformation
Notes
6(8)(A) Measurement. The student solves application problems involving estimation and measurement of length, area, time,
temperature, volume, weight, and angles.
The student is expected to estimate measurements (including circumference) and evaluate reasonableness of results.

6(8)(B) Measurement. The student solves application problems involving estimation and measurement of length, area, time,
temperature, volume, weight, and angles.
-
The student is expected to select and use appropriate units, tools, or formulas to measure and to solve problems involving length (including perimeter), area, time, temperature, volume, and weight.

6(8)(B) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems.

The student is expected to model area formulas for parallelograms, trapezoids and triangles by decomposing and rearranging parts of these shapes.

6(8)(D) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems.

The student is expected to determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers.

This skill is not included within the Revised TEKS (2012).

Specificity has been added regarding the development of formulas.

Specificity has been added regarding formulas for area and volume

Dimensions may be positive rational numbers.

In the revised SE, measurement concepts and skills have been focused:

- Time: grades 1, 2, 3, 4
- Length (including perimeter): grades 1, 2, 3, 4, 5
- Weight: grades $3,4,5$

Temperature is not included within the Revised TEKS (2012) within the Measurement strand. It may be included in problems related to
everyday life.

6(8)(C) Measurement. The student solves application problems involving estimation and measurement of length, area, time,

- temperature, volume, weight, and angles.


## The student is expected to measure

angles.
6(8)(D) Measurement. The student solves application problems involving estimation and measurement of length, area, time
temperature, volume, weight, and angles.
The student is expected to convert measures within the same measurement system (customary and metric) based on relationships between units.

The content of this SE has moved to grade 4:
Geometry and measurement
4(7) (C)

Grade 6 - Mathematics
OId TEKS - Probability and Statistics Current TEKS (2012) Supporting Information

6(9)(A) Probability and statistics. The student uses experimental and theoretical probability to make predictions.

- The student is expected to construct sample spaces using lists and tree diagrams.
6(9)(B) Probability and statistics. The student uses experimental and theoretical probability to make predictions.
- The student is expected to find the probabilities of a simple event and its complement and describe the relationship between the two.

6(10)(A) Probability and statistics. The student uses statistical representations to analyze data.

+ The student is expected to select and use an appropriate representation for presenting and displaying different graphical representations of the same data including line plot, line graph, bar graph, and stem and leaf plot.

6(12)(A) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems.

The student is expected to represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots.

6(10)(B) Probability and statistics. Thestudent uses statistical representations to analyze data.

The student is expected to identify mean

6(12)(B) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems.

The content of this SE has moved to grade 7:
The content of this SE has moved to grade 7:
Proportionality
7(6) (A)

$$
7(6)(E)
$$

## Students will continue to represent data using stem-and-leaf plots.

When the revised SE $6(12)(A)$ is paired with the Mathematical process standards, the expectation is that student select and use an appropriate representation to communicate and justify mathematical relationships.

In the current TEKS, dot plots (line plots) are included in the grade 7 TEKS. Box plots (box and whisker plots) and histograms are included in the grade 8 TEKS.

In the revised SE , representing and drawing conclusions with data, which includes interpreting data, has moved to prior grades:

- Line plots have been renamed dot plots: grades 3, 4, 5
- Stem-and-leaf plots: grades 4,5
- Frequency tables: grades 3,4,5
- Bar graphs: grades 2,3,5
- Scatterplots: grade 5

In the revised SE, the use of histograms and box plots begins in grade 6 .

While students will continue to describe the center (median and mean), and spread
(range), they will do so based on a graphical representation of numeric data rather than from a list of numeric data.

Grade 6 - Mathematics

| Old TEKS - Probability and Statistics | Current TEKS (2012) | Supporting Information | Notes |
| :---: | :---: | :---: | :---: |
| (using concrete objects and pictorial models), median, mode, and range of a set of data. | The student is expected to use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution. | The revised SE adds describing the shape (affected by mean, median, mode, and range) based on a graphical representation. |  |
|  | 6(12)(C) Measurement and data. The student applies mathematical process | The revised SE 6(12)(C) focuses on numeric data and its related measures: mean, median, range, and interquartile ranges. |  |
|  | standards to use numerical or graphical representations to analyze problems. | In the current SE , interquartile ranges are determined in grade 8 when representing data with box and whisker plots. |  |
|  | The student is expected to summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution. | Determining the mean using concrete objects and pictorial models is not included within the Revised TEKS (2012). |  |
|  | 6(12)(D) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems. | The revised SE 6(12)(C) focuses on categorical data and its related measures: mode and relative frequencies. |  |
|  | The student is expected to summarize categorical data with numerical and graphical summaries, including the mode, the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution. | The focus is now on the percent bar graph instead of the circle graph. This connects the use of strip diagrams to represent and solve problems related to percents with the relative frequency table. |  |

$6(10)(C)$ Probability and statistics. The student uses statistical representations to analyze data.
$-$
The student is expected to sketch circle graphs to display data.

The content of this SE was moved to grade 7: Proportionality

7(6)(G)

6(13)(A) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to solve problems.

Specificity has been added regarding data representations.

6(10)(D) Probability and statistics. The student uses statistical representations to analyze data.

The student is expected to solve problems by collecting, organizing, displaying, and

| OId TEKS - Probability and Statistics | Current TEKS (2012) | Supporting Information |
| :--- | :--- | :--- |
| interpreting data. | numeric data summarized in dot plots, <br> stem-and-leaf plots, histograms, and box <br> plots. | In the current TEKS, dot plots (line plots) are <br> included in the grade 7 TEKS. Box plots (box <br> and whisker plots) and histograms are included <br> in the grade 8 TEKS. |

Grade 6 - Mathematics
Old TEKS - Underlying Processes and
Current TEKS (2012)
Supporting I nformation
Notes

6(11)(A) Underlying processes and mathematical tools. The student applies grade 6 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

## 6(11)(B) Underlying processes and

mathematical tools. The student applies
Grade 6 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 problemsolving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness. $6(11)(C)$ Underlying processes and mathematical tools. The student applies Grade 6 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activitie 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. 6(11)(D) Underlying processes and mathematical tools. The student applies Grade 6 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activitie 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.

6(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.

The revised SE restates and condenses $6(11)(B)$ and $6(11)(C)$

6(1)(B) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding.

The student is expected to use a problemsolving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problemsolving process and the reasonableness of the solution.

6(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

| Problem-Solving Model |  |
| :--- | :--- |
| Current TEKS | Revised TEKS <br> (2012) |
| Understanding the <br> problem | Analyzing given <br> information |
| Making a plan | Formulating a plan <br> or strategy |
| Carrying out the <br> plan | Determining a <br> solution |
|  | Justifying the <br> solution |
| Evaluating the <br> solution for <br> reasonableness | Evaluating the <br> problem-solving <br> process and the <br> reasonableness of <br> the solution |

The phrase "as appropriate" has been inserted into the revised SE. This implies that students are assessing which tool to apply rather than rying only one or all.

Grade 6 - Mathematics

## Old TEKS - Underlying Processes and <br> Mathematical Tools

6(12)(A) Underlying processes and mathematical tools. The student communicates about Grade 6 mathematics through informal and mathematical languagerepresentations, and models.
The student is expected to communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models. 6 (12)(B) Underlying processes and mathematical tools. The student
communicates about Grade 6 mathematics through informal and mathematical language
representations, and models.
The student is expected to evaluate the effectiveness of different representations to communicate ideas.

6(13)(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.

6(13)(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.

Current TEKS (2012)
Supporting I nformation
Notes
6(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.

6(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.

## 6(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.

6(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

Communication has expanded to include reasoning and the implications of mathematical deas and reasoning.

The list of representations is now summarized with "multiple representations," with specificity added for symbols and diagrams.

## The use of representations is extended to

 include organizing and recording mathematical ideas in addition to communicatingAs 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.
The revised SE extends the current TEKS to allow for additional means to analyze relationships and to form connections with mathematical ideas past conjecturing and set of examples and non-examples.

Students should still form conjectures based on patterns or sets of examples and nonexamples.

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.

Grade 6 - Mathematics

| Old TEKS | Current TEKS (2012) | Supporting I nformation | Notes |
| :---: | :---: | :---: | :---: |
| 十 | 6(14)(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. <br> The student is expected to compare the features and costs of a checking account and a debit card offered by different local financial institutions. |  |  |
| $T$ | 6(14)(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. <br> The student is expected to distinguish between debit cards and credit cards. |  |  |
| F | 6(14)(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. <br> The student is expected to balance a check register that includes deposits, withdrawals, and transfers. |  |  |
| $T$ | 6(14)(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. <br> The student is expected to explain why it is important to establish a positive credit history. |  |  |
| 千 | 6(14)(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. <br> The student is expected to describe the information in a credit report and how long it is retained. |  |  |
| $+$ | 6(14)(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. <br> The student is expected to describe the value of credit reports to borrowers and to lenders. |  |  |

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| :---: | :---: | :---: | :---: | :---: |
| Grade 6 - Mathematics |  |  |  |  |
| Old teks | Current TEKS (2012) | Supporting Information | Notes |  |
| $+$ | 6(14)(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. <br> The student is expected to explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work study. |  |  |  |
| + | 6(14)(H) 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. <br> The student is expected to compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income. |  |  |  |


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    Introduction to the Revised Mathematics TEKS: Side-by-Side TEKS Comparison

