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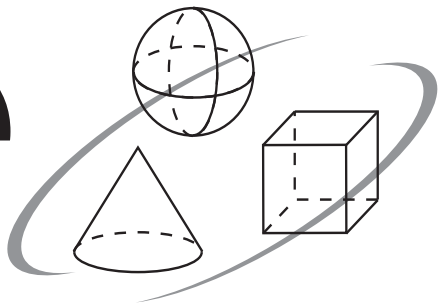

Minutes a Day–Mastery for a Lifetime!

Simple Solutions Standards Mapping

Texas Essential Knowledge Skills (TEKS)

for Mathematics

Grades K - 8

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Introduction

The purpose of this document is to demonstrate how *Simple Solutions Mathematics* aligns with the Texas Essential Knowledge and Skills for Mathematics. Each grade document aligns the standards from the *Simple Solutions Mathematics* series to the standards approved by the Texas Education Agency, and highlights the standards and eligible content identified within the Texas Essential Knowledge and Skills for Mathematics.

Simple Solutions Website:
https://simplesolutions.org/

Texas Education Agency:
https://tea.texas.gov/academics/curriculum-standards/teks/texas-essential-knowledge-and-skills

Level K - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system. The student is expected to:			
K.b2.A	count forward and backward to at least 20 with and without objects	**K.CC.1**	Count to 100 by ones and by tens.
		K.CC.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
		K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
K.b2.B	read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures	**K.CC.3**	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
		K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality. *A) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.*
K.b2.C	count a set of objects up to at least 20 and demonstrate that the last number said tells the number of objects in the set regardless of their arrangement or order	**K.CC.4**	Understand the relationship between numbers and quantities; connect counting to cardinality. *A) When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.* *B) Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.*
K.b2.D	recognize instantly the quantity of a small group of objects in organized and random arrangements	**K.CC.5**	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.
K.b2.E	generate a set using concrete and pictorial models that represents a number that is more than, less than, and equal to a given number up to 20	**K.CC.6**	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
K.b2.F	generate a number that is one more than or one less than another number up to at least 20	**1.NBT.5** **(Next Level)**	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
K.b2.G	compare sets of objects up to at least 20 in each set using comparative language	**K.CC.6**	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
		K.CC.7	Compare two numbers between 1 and 10 presented as written numerals.
K.b2.H	use comparative language to describe two numbers up to 20 presented as written numerals	**K.CC.7** ***(Partial)***	Compare two numbers between 1 and 10 presented as written numerals. *(Up to 10.)*
K.b2.I	compose and decompose numbers up to 10 with objects and pictures	**K.OA.3**	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation. (e.g., 5 = 2 + 3 and 5 = 4 + 1).
(b3) Numbers and Operations:			
The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems. The student is expected to:			
K.b3.A	model the action of joining to represent addition and the action of separating to represent subtraction	**K.0A.1**	Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.
K.b3.B	solve word problems using objects and drawings to find sums up to 10 and differences within 10	**K.0A.2**	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
K.b3.C	explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences	**K.0A.2**	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
(b4) Numbers and Operations:			
The student applies mathematical process standards to identify coins in order to recognize the need for monetary transactions. The student is expected to:			
K.b4	identify U.S. coins by name, including pennies, nickels, dimes, and quarters.	**1.MD.1** **(Next Level)**	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
		2.MD.8 **(Future Level)**	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?
(b5) Algebraic Reasoning:			
The student applies mathematical process standards to identify the pattern in the number word list. The student is expected to:			
K.b5	recite numbers up to at least 100 by ones and tens beginning with any given number	**K.CC.5**	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

Level K - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b6) Geometry and Measurement:			
The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:			
K.b6.A	identify two-dimensional shapes, including circles, triangles, rectangles, and squares as special rectangles	**K.G.2**	Correctly name shapes regardless of their orientations or overall size.
K.b6.B	identify three-dimensional solids, including cylinders, cones, spheres, and cubes, in the real world	**K.G.5**	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
K.b6.C	identify two-dimensional components of three-dimensional objects	**K.G.3**	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid").
K.b6.D	identify attributes of two-dimensional shapes using informal and formal geometric language interchangeably	**K.G.2**	Correctly name shapes regardless of their orientations or overall size.
K.b6.E	classify and sort a variety of regular and irregular two- and three-dimensional figures regardless of orientation or size	**K.G.4**	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).
K.b6.F	create two-dimensional shapes using a variety of materials and drawings	**K.G.6**	Compose simple shapes to form larger shapes.
(b7) Geometry and Measurement:			
The student applies mathematical process standards to directly compare measurable attributes. The student is expected to:			
K.b7.A	give an example of a measurable attribute of a given object, including length, capacity, and weight	**K.MD.1**	Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.
K.b7.B	compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference	**K.MD.2**	Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.
(b8) Data Analysis:			
The student applies mathematical process standards to collect and organize data to make it useful for interpreting information. The student is expected to:			
K.b8.A	collect, sort, and organize data into two or three categories	**K.MD.3**	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count.
K.b8.B	use data to create real-object and picture graphs		
K.b8.C	draw conclusions from real-object and picture graphs		
(b9) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
K.b9.A	identify ways to earn income		Not included in *Simple Solutions Standards-Based Mathematics.*
K.b9.B	differentiate between money received as income and money received as gifts		
K.b9.C	list simple skills required for jobs		
K.b9.D	distinguish between wants and needs and identify income as a source to meet one's wants and needs		

Level 1 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value.. The student is expected to:			
1.b2.A	recognize instantly the quantity of structured arrangements		*Not included in Simple Solutions Standards-Based Mathematics.*
1.b2.B	use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones	**1.NBT.2**	Understand that the two digits of a two-digit number represent amounts of tens and ones. *A)10 can be thought of as a bundle of ten ones — called a "ten."* *B) The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.* *C) The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).*
1.b2.C	use objects, pictures, and expanded and standard forms to represent numbers up to 120	**1.NBT.1**	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
1.b2.D	generate a number that is greater than or less than a given whole number up to 120		
1.b2.E	use place value to compare whole numbers up to 120 using comparative language	**1.NBT.3**	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
1.b2.F	order whole numbers up to 120 using place value and open number lines		
1.b2.G	represent the comparison of two numbers to 100 using the symbols >, <, or =.		
(b3) Numbers and Operations:			
The student applies mathematical process standards to develop and use strategies for whole number addition and subtraction computations in order to solve problems. The student is expected to:			
1.b3.A	use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99	**1.OA.1**	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.b3.B	use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] - 3	**1.OA.1**	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
		1.OA.2	Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.b3.C	compose 10 with two or more addends with and without concrete objects	**1.OA.1**	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
1.b3.D	apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10	**1.OA.6**	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
1.b3.E	explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences		
1.b3.F	generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20		
(b4) Numbers and Operations:			
The student applies mathematical process standards to identify coins, their values, and the relationships among them in order to recognize the need for monetary transactions. The student is expected to:			
1.b4.A	identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them	**2.MD.8 (prep)**	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? *Note: In this level, coin values, symbols, and relationships are introduced to the students.*
1.b4.B	write a number with the cent symbol to describe the value of a coin		
1.b4.C	use relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes		

Level 1 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b5) Algebraic Reasoning:			
The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:			
1.b5.A	recite numbers forward and backward from any given number between 1 and 120	**1.NBT.1**	Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.
1.b5.B	skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set	**1.OA.5**	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
1.b5.C	use relationships to determine the number that is 10 more and 10 less than a given number up to 120	**1.NBT.5**	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.
1.b5.D	represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences	**1.OA.6**	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
1.b5.E	understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s)	**1.OA.7**	Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false.
1.b5.F	determine the unknown whole number in an addition or subtraction equation when the unknown may be any one of the three or four terms in the equation	**1.OA.8**	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.
1.b5.G	apply properties of operations to add and subtract two or three numbers	**1.OA.6**	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
(b6) Geometry and Measurement:			
The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:			
1.b6.A	classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language	**1.G.1**	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
1.b6.B	distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape		
1.b6.C	create two-dimensional figures, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons	**1.G.2**	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
1.b6.D	identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language	**1.G.1**	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.
1.b6.E	identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language		
1.b6.F	compose two-dimensional shapes by joining two, three, or four figures to produce a target shape in more than one way if possible	**1.G.2**	Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape.
1.b6.G	partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words	**1.G.3**	Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.
1.b6.H	identify examples and non-examples of halves and fourths		

Level 1 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b7) Geometry and Measurement:			
The student applies mathematical process standards to select and use units to describe length and time. The student is expected to:			
1.b7.A	use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement	**1.MD.2**	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
1.b7.B	illustrate that the length of an object is the number of same-size units of length that, when laid end-to-end with no gaps or overlaps, reach from one end of the object to the other		
1.b7.C	measure the same object/distance with units of two different lengths and describe how and why the measurements differ	**1.MD.1**	Order three objects by length; compare the lengths of two objects indirectly by using a third object.
1.b7.D	describe a length to the nearest whole unit using a number and a unit	**1.MD.2**	Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.
1.b7.E	tell time to the hour and half hour using analog and digital clocks	**1.MD.3**	Tell and write time in hours and half-hours using analog and digital clocks.
(b8) Data Analysis:			
The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:			
1.b8.A	collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts	**1.MD.4**	Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.
1.b8.B	use data to create picture and bar-type graphs		
1.b8.C	draw conclusions and generate and answer questions using information from picture and bar-type graphs		
(b9) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
1.b9.A	define money earned as income		Not included in *Simple Solutions Standards-Based Mathematics*
1.b9.B	identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs		
1.b9.C	distinguish between spending and saving		
1.b9.D	consider charitable giving		

Level 2 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:			
2.b2.A	use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones	**2.NBT.1**	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones.
		2.NBT.2	Count within 1000; skip-count by 5s, 10s, and 100s.
		2.NBT.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
2.b2.B	use standard, word, and expanded forms to represent numbers up to 1,200	**2.NBT.3**	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
2.b2.C	generate a number that is greater than or less than a given whole number up to 1,200		
2.b2.D	use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =)	**2.NBT.4**	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
2.b2.E	locate the position of a given whole number on an open number line	**2.MD.6**	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
2.b2.F	name the whole number that corresponds to a specific point on a number line		
(b3) Numbers and Operations:			
The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole. The student is expected to:			
2.b3.A	partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words	**2.G.2**	Partition a rectangle into rows and columns of same-size squares and count to find the total number of them.
		2.G.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
2.b3.B	explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part	**2.G.3**	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
2.b3.C	use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole	**2.G.3**	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.
2.b3.D	identify examples and non-examples of halves, fourths, and eighths		
(b4) Numbers and Operations:			
The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy. The student is expected to:			
2.b4.A	recall basic facts to add and subtract within 20 with automaticity	**2.OA.2**	Fluently add and subtract within 20 using mental strategies.2 By end of Grade 2, know from memory all sums of two one-digit numbers.
2.b4.B	add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations	**2.NBT.5**	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
2.b4.C	solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms	**2.OA.1** ***(Partial)***	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. *(Simple Solutions Standards-Based Mathematics supports this skill with 2.G.1, up to 100.)*

Level 2 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
2.b4.D	generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000	**2.NBT.5** ***(Partial)***	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. *(Simple Solutions Standards-Based Mathematics supports this skill with 2.NBT.5, up to 100.)*
(b5) Number and Operations:			
The student applies mathematical process standards to determine the value of coins in order to solve monetary transactions. The student is expected to:			
2.b5.A	determine the value of a collection of coins up to one dollar	**2.MD.8**	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?
2.b5.B	use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins		
(b6) Number and Operations:			
The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares. The student is expected to:			
2.b6.A	model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined	**2.OA.1**	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
2.b6.B	model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets		
(b7) Algebraic Reasoning:			
The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:			
2.b7.A	determine whether a number up to 40 is even or odd using pairings of objects to represent the number	**2.OA.3** ***(Partial)***	Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. *(Simple Solutions Standards-Based Mathematics supports this skill with 2.OA.3, up to 20.)*
2.b7.B	use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200	**2.NBT.4**	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons.
2.b7.C	represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem	**2.OA.1**	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
(b8) Geometry and Measurement:			
The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties. The student is expected to:			
2.b8.A	create two-dimensional shapes based on given attributes, including number of sides and vertices	**2.G.1**	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2.b8.B	classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language		Not included in this level of *Simple Solutions Standards-Based Mathematics,* but supported by K.MD.3 in a previous level .
2.b8.C	classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices	**2.G.1**	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.
2.b8.D	compose two-dimensional shapes and three-dimensional solids with given properties or attributes		
2.b8.E	decompose two-dimensional shapes such as cutting out a square from a rectangle, dividing a shape in half, or partitioning a rectangle into identical triangles and identify the resulting geometric parts	**2.G.3**	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Level 2 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b9) Geometry and Measurement:			
The student applies mathematical process standards to select and use units to describe length, area, and time. The student is expected to:			
2.b9.A	find the length of objects using concrete models for standard units of length	**2.MD.1**	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2.b9.B	describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object		Not included in this level of *Simple Solutions Standards-Based Mathematics,* but supported by 1.MD.4 from the previous level.)
2.b9.C	represent whole numbers as distances from any given location on a number line	**2.MD.6**	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.
2.b9.D	determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes	**2.MD.1**	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
2.b9.E	determine a solution to a problem involving length, including estimating lengths	**2.MD.5**	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
2.b9.F	use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit	**2.OA.4**	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.
2.b9.G	read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.	**2.MD.7**	Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.
(b10) Data Analysis:			
The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems. The student is expected to:			
2.b10.A	explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category	**2.MD.10**	Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.
2.b10.B	organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more		
2.b10.C	write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one		
2.b10.D	draw conclusions and make predictions from information in a graph		
(b11) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
2.b11.A	calculate how money saved can accumulate into a larger amount over time		Not included in *Simple Solutions Standards-Based Mathematics.*
2.b11.B	explain that saving is an alternative to spending		
2.b11.C	distinguish between a deposit and a withdrawal		
2.b11.D	identify examples of borrowing and distinguish between responsible and irresponsible borrowing		
2.b11.E	identify examples of lending and use concepts of benefits and costs to evaluate lending decisions		
2.b11.F	differentiate between producers and consumers and calculate the cost to produce a simple item		

Level 3 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent and compare whole numbers and understand relationships related to place value. The student is expected to:			
3.b2.A	compose and decompose numbers up to 100,000 as a sum of so many ten thousands, so many thousands, so many hundreds, so many tens, and so many ones using objects, pictorial models, and numbers, including expanded notation as appropriate	**3.NBT.2** ***(Partial)***	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. *(Simple Solutions Standards-Based Mathematics supports this skill with 3.NBT.2, up to 1,000.)*
3.b2.B	describe the mathematical relationships found in the base-10 place value system through the hundred thousands place	**3.NBT.1**	Use place value understanding to round whole numbers to the nearest 10 or 100.
3.b2.C	represent a number on a number line as being between two consecutive multiples of 10; 100; 1,000; or 10,000 and use words to describe relative size of numbers in order to round whole numbers	**3.NBT.1** ***(Partial)***	Use place value understanding to round whole numbers to the nearest 10 or 100. *(Simple Solutions Standards-Based Mathematics supports this skill with 3.NBT.1, up to 1,000 for 10s and 100s.)*
3.b2.D	compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or =	**4.NBT.2** **(Next Level)**	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
(b3) Numbers and Operations:			
The student applies mathematical process standards to represent and explain fractional units. The student is expected to:			
3.b3.A	represent fractions greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 using concrete objects and pictorial models, including strip diagrams and number lines	**3.NF.2**	Understand a fraction as a number on the number line; represent fractions on a number line diagram. *A) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line.*
3.b3.B	determine the corresponding fraction greater than zero and less than or equal to one with denominators of 2, 3, 4, 6, and 8 given a specified point on a number line	**3.NF.2**	Understand a fraction as a number on the number line; represent fractions on a number line diagram. *B) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.*
3.b3.C	explain that the unit fraction 1/b represents the quantity formed by one part of a whole that has been partitioned into b equal parts where b is a non-zero whole number	**3.NF.1**	Understand a fraction 1/*b* as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction *a* /*b* as the quantity formed by a parts of size 1/*b* .
3.b3.D	compose and decompose a fraction *a/b* with a numerator greater than zero and less than or equal to b as a sum of parts 1/*b*	**4.NF.3** **(Next Level)**	Understand a fraction *a* /*b* with a > 1 as a sum of fractions 1/*b* . *A) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.*
3.b3.E	solve problems involving partitioning an object or a set of objects among two or more recipients using pictorial representations of fractions with denominators of 2, 3, 4, 6, and 8	**3.NF.2**	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
3.b3.F	represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines	**3.NF.2**	Understand a fraction as a number on the number line; represent fractions on a number line diagram. *A) Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. B) Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.*
		3.NF.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. *A) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.*
3.b3.G	explain that two fractions are equivalent if and only if they are both represented by the same point on the number line or represent the same portion of a same size whole for an area model	**3.NF.3**	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. *A) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.*
3.b3.H	compare two fractions having the same numerator or denominator in problems by reasoning about their sizes and justifying the conclusion using symbols, words, objects, and pictorial models	**3.NF.3**	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. *D) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual fraction model.*

Level 3 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b4) Numbers and Operations:			
The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve problems with efficiency and accuracy. The student is expected to:			
3.b4.A	solve with fluency one-step and two-step problems involving addition and subtraction within 1,000 using strategies based on place value, properties of operations, and the relationship between addition and subtraction	**3.NBT.2**	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.b4.B	round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems	**2.NBT.5 (Previous Level)**	Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction.
3.b4.C	determine the value of a collection of coins and bills	**2.MD.8 (Previous Level)**	Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have?
3.b4.D	determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10	**3.OA.1**	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.b4.E	represent multiplication facts by using a variety of approaches such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, and skip counting	**3.OA.1**	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
		3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.b4.F	recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts	**3.NBT.3**	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations.
3.b4.G	use strategies and algorithms, including the standard algorithm, to multiply a two-digit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties	**3.NBT.3** ***(Partial)***	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 × 80, 5 × 60) using strategies based on place value and properties of operations. *(Simple Solutions Standards-Based Mathematics supports this skill with 3.NBT.3, multiples of 10 only.)*
3.b4.H	determine the number of objects in each group when a set of objects is partitioned into equal shares or a set of objects is shared equally	**3.OA.1**	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.b4.I	determine if a number is even or odd using divisibility rules	**3.OA.9**	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.
3.b4.J	determine a quotient using the relationship between multiplication and division	**3.OA.2**	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.
3.b4.K	solve one-step and two-step problems involving multiplication and division within 100 using strategies based on objects; pictorial models, including arrays, area models, and equal groups; properties of operations; or recall of facts	**3.OA.8**	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
(b5) Algebraic Reasoning:			
The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:			
3.b5.A	represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations	**3.OA.8**	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.b5.B	represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations		
3.b5.C	describe a multiplication expression as a comparison such as 3 x 24 represents 3 times as much as 24	**3.OA.1**	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
3.b5.D	determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is either a missing factor or product	**3.OA.4**	Determine the unknown whole number in a multiplication or division equation relating three whole numbers.
3.b5.E	represent real-world relationships using number pairs in a table and verbal descriptions	**3.OA.9**	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.

Level 3 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b6) Geometry and Measurement:			
The student applies mathematical process standards to analyze attributes of two-dimensional geometric figures to develop generalizations about their properties. The student is expected to:			
3.b6.A	classify and sort two- and three-dimensional figures, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language	**3.G.1**	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.b6.B	use attributes to recognize rhombuses, parallelograms, trapezoids, rectangles, and squares as examples of quadrilaterals and draw examples of quadrilaterals that do not belong to any of these subcategories		
3.b6.C	determine the area of rectangles with whole number side lengths in problems using multiplication related to the number of rows times the number of unit squares in each row	**3.MD.6**	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).
		3.MD.7	Relate area to the operations of multiplication and addition.
		3.MD.5	Recognize area as an attribute of plane figures and understand concepts of area measurement. *A) A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area.* *B)A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.*
3.b6.D	decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area	**3.MD.5**	Recognize area as an attribute of plane figures and understand concepts of area measurement.
		3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
3.b6.E	decompose two congruent two-dimensional figures into parts with equal areas and express the area of each part as a unit fraction of the whole and recognize that equal shares of identical wholes need not have the same shape	**3.MD.5**	Recognize area as an attribute of plane figures and understand concepts of area measurement.
		3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.
(b7) Geometry and Measurement:			
The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving customary and metric measurement. The student is expected to:			
3.b7.A	represent fractions of halves, fourths, and eighths as distances from zero on a number line	**3.NF.2**	Understand a fraction as a number on the number line; represent fractions on a number line diagram.
3.b7.B	determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems	**3.MD.8**	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.
3.b7.C	determine the solutions to problems involving addition and subtraction of time intervals in minutes using pictorial models or tools such as a 15-minute event plus a 30-minute event equals 45 minutes	**3.MD.1**	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.
3.b7.D	determine when it is appropriate to use measurements of liquid volume (capacity) or weight	**3.MD.2**	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l).1 Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.
3.b7.E	determine liquid volume (capacity) or weight using appropriate units and tools		
(b8) Data Analysis:			
The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:			
3.b8.A	summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals	**3.MD.3**	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
		3.MD.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

Level 3 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
3.b8.B	solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals	**3.MD.3**	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.
(b9) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
3.b9.A	explain the connection between human capital/labor and income	Not included in *Simple Solutions Standards-Based Mathematics.*	
3.b9.B	describe the relationship between the availability or scarcity of resources and how that impacts cost		
3.b9.C	identify the costs and benefits of planned and unplanned spending decisions		
3.b9.D	explain that credit is used when wants or needs exceed the ability to pay and that it is the borrower's responsibility to pay it back to the lender, usually with interest		
3.b9.E	list reasons to save and explain the benefit of a savings plan, including for college		
3.b9.F	identify decisions involving income, spending, saving, credit, and charitable giving		

Level 4 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent, compare, and order whole numbers and decimals and understand relationships related to place value. The student is expected to:			
4.b2.A	interpret the value of each place-value position as 10 times the position to the right and as one-tenth of the value of the place to its left	**4.NBT.1**	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.
4.b2.B	represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals	**4.NBT.2**	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
4.b2.C	compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or =	**4.NBT.2**	Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.
4.b2.D	round whole numbers to a given place value through the hundred thousands place	**4.NBT.3**	Use place value understanding to round multi-digit whole numbers to any place.
4.b2.E	represent decimals, including tenths and hundredths, using concrete and visual models and money	**4.NF.6**	Use decimal notation for fractions with denominators 10 or 100.
4.b2.F	compare and order decimals using concrete and visual models to the hundredths	**4.NF.6**	Use decimal notation for fractions with denominators 10 or 100.
		4.NF.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions, e.g., by using a visual model.
4.b2.G	relate decimals to fractions that name tenths and hundredths	**4.NF.6**	Use decimal notation for fractions with denominators 10 or 100.
4.b2.H	determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line		
(b3) Numbers and Operations:			
The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:			
4.b3.A	represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$	**4.NF.3**	Understand a fraction a/b with a > 1 as a sum of fractions $1/b$. *A) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.*
4.b3.B	decompose a fraction in more than one way into a sum of fractions with the same denominator using concrete and pictorial models and recording results with symbolic representations	**4.NF.3**	Understand a fraction a/b with a > 1 as a sum of fractions $1/b$. *B) Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.*
4.b3.C	determine if two given fractions are equivalent using a variety of methods		
4.b3.D	compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or <	**5.NF.2** (Next Level)	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
4.b3.E	represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations	**4.NF.3**	Understand a fraction a/b with a > 1 as a sum of fractions $1/b$. *C) Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.*
4.b3.F	evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, 1/4, 1/2, 3/4, and 1, referring to the same whole	**4.NF.3**	Understand a fraction a/b with a > 1 as a sum of fractions $1/b$. *A) Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.*
		5.NF.2 (Next Level)	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
4.b3.G	represent fractions and decimals to the tenths or hundredths as distances from zero on a number line	**4.NF.3**	Understand a fraction a/b with a > 1 as a sum of fractions $1/b$. *A) Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.*

Level 4 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b4) Numbers and Operations:			
The student applies mathematical process standards to develop and use strategies and methods for whole number computations and decimal sums and differences in order to solve problems with efficiency and accuracy. The student is expected to:			
4.b4.A	add and subtract whole numbers and decimals to the hundredths place using the standard algorithm	**4.NBT.4** *(Partial)*	Fluently add and subtract multi-digit whole numbers using the standard algorithm. *(Whole numbers only.)*
4.b4.B	determine products of a number and 10 or 100 using properties of operations and place value understandings	**4.NBT.5**	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
4.b4.C	represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15		
4.b4.D	use strategies and algorithms, including the standard algorithm, to multiply up to a four-digit number by a one-digit number and to multiply a two-digit number by a two-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties		
4.b4.E	represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations	**4.NBT.6**	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
4.b4.F	use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor		
4.b4.G	round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers	**4.NBT.3**	Use place value understanding to round multi-digit whole numbers to any place.
4.b4.H	solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders	**4.OA.1**	Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.
		4.OA.2	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
(b5) Algebraic Reasoning:			
The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:			
4.b5.A	represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity	**4.OA.2**	Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.
		4.OA.3	Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
4.b5.B	represent problems using an input-output table and numerical expressions to generate a number pattern that follows a given rule representing the relationship of the values in the resulting sequence and their position in the sequence	**4.OA.5**	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.
4.b5.C	use models to determine the formulas for the perimeter of a rectangle ($l + w + l + w$ or $2l + 2w$), including the special form for perimeter of a square ($4s$) and the area of a rectangle ($l \times w$)	**4.MD.3**	Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
4.b5.D	solve problems related to perimeter and area of rectangles where dimensions are whole numbers		

Level 4 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b6) Geometry and Measurement:			
The student applies mathematical process standards to analyze geometric attributes in order to develop generalizations about their properties. The student is expected to:			
4.b6.A	identify points, lines, line segments, rays, angles, and perpendicular and parallel lines	**4.G.1**	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.b6.B	identify and draw one or more lines of symmetry, if they exist, for a two-dimensional figure	**4.G.3**	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
4.b6.C	apply knowledge of right angles to identify acute, right, and obtuse triangles	**4.G.1**	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
4.b6.D	classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines or the presence or absence of angles of a specified size	**4.G.2**	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
(b7) Geometry and Measurement:			
The student applies mathematical process standards to solve problems involving angles less than or equal to 180 degrees. The student is expected to:			
4.b7.A	illustrate the measure of an angle as the part of a circle whose center is at the vertex of the angle that is "cut out" by the rays of the angle. Angle measures are limited to whole numbers	**4.MD.5**	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement. *A) An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through 1/360 of a circle is called a "one-degree angle," and can be used to measure angles.* *B) An angle that turns through n one-degree angles is said to have an angle measure of n degrees.*
4.b7.B	illustrate degrees as the units used to measure an angle, where 1/360 of any circle is one degree and an angle that "cuts" n/360 out of any circle whose center is at the angle's vertex has a measure of n degrees. Angle measures are limited to whole numbers		
4.b7.C	determine the approximate measures of angles in degrees to the nearest whole number using a protractor	**4.MD.6**	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
4.b7.D	draw an angle with a given measure		
4.b7.E	determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures	**4.MD.7**	Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.
(b8) Geometry and Measurement:			
The student applies mathematical process standards to select appropriate customary and metric units, strategies, and tools to solve problems involving measurement. The student is expected to:			
4.b8.A	identify relative sizes of measurement units within the customary and metric systems	**4.MD.1**	Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.
4.b8.B	convert measurements within the same measurement system, customary or metric, from a smaller unit into a larger unit or a larger unit into a smaller unit when given other equivalent measures represented in a table		
4.b8.C	solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate	**4.MD.2**	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.
(b9) Data Analysis:			
The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:			
4.b9.A	represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions	**4.MD.4** ***(Partial)***	Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. *(Whole numbers only.)*
4.b9.B	solve one- and two-step problems using data in whole number, decimal, and fraction form in a frequency table, dot plot, or stem-and-leaf plot		

Level 4 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b10) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
4.b10.A	distinguish between fixed and variable expenses		*Not included in Simple Solutions Standards-Based Mathematics.*
4.b10.B	calculate profit in a given situation		
4.b10.C	compare the advantages and disadvantages of various savings options		
4.b10.D	describe how to allocate a weekly allowance among spending; saving, including for college; and sharing		
4.b10.E	describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending		

Level 5 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent, compare, and order positive rational numbers and understand relationships as related to place value. The student is expected to:			
5.b2.A	represent the value of the digit in decimals through the thousandths using expanded notation and numerals	**5.NBT.3**	Read, write, and compare decimals to thousandths. *A) Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000).*
5.b2.B	compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =	**5.NBT.3**	Read, write, and compare decimals to thousandths. *B) Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.*
5.b2.C	round decimals to tenths or hundredths	**5.NBT.4**	Use place value understanding to round decimals to any place.
(b3) Numbers and Operations:			
The student applies mathematical process standards to develop and use strategies and methods for positive rational number computations in order to solve problems with efficiency and accuracy. The student is expected to:			
5.b3.A	estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division	**5.NBT.7**	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5.b3.B	multiply with fluency a three-digit number by a two-digit number using the standard algorithm	**5.NBT.5**	Fluently multiply multi-digit whole numbers using the standard algorithm.
5.b3.C	solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm	**5.NBT.6**	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.b3.D	represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models	**5.NBT.7**	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
5.b3.E	solve for products of decimals to the hundredths, including situations involving money, using strategies based on place-value understandings, properties of operations, and the relationship to the multiplication of whole numbers		
5.b3.F	represent quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using objects and pictorial models, including area models		
5.b3.G	solve for quotients of decimals to the hundredths, up to four-digit dividends and two-digit whole number divisors, using strategies and algorithms, including the standard algorithm		
5.b3.H	represent and solve addition and subtraction of fractions with unequal denominators referring to the same whole using objects and pictorial models and properties of operations	**5.NF.1**	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
		5.NF.2	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
5.b3.I	represent and solve multiplication of a whole number and a fraction that refers to the same whole using objects and pictorial models, including area models	**5.NF.4**	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.
		5.NF.5	Interpret multiplication as scaling (resizing).
		5.NF.6	Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
5.b3.J	represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as 1/3 ÷ 7 and 7 ÷ 1/3 using objects and pictorial models, including area models;	**5.NF.7**	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.
5.b3.K	add and subtract positive rational numbers fluently	**4.NBT.4 (Previous Level)**	Fluently add and subtract multi-digit whole numbers using the standard algorithm.
5.b3.L	divide whole numbers by unit fractions and unit fractions by whole numbers	**5.NF.7**	Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

Level 5 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b4) Algebraic Reasoning:			
The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:			
5.b4.A	identify prime and composite numbers	**4.OA.4** (Previous Level)	Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.
5.b4.B	represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity	**4.NBT.4** (Previous Level)	Fluently add and subtract multi-digit whole numbers using the standard algorithm.
		4.NBT.5 (Previous Level)	Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
		4.NBT.6 (Previous Level)	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
5.b4.C	generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph	**5.OA.3**	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.
5.b4.D	recognize the difference between additive and multiplicative numerical patterns given in a table or graph		
5.b4.E	describe the meaning of parentheses and brackets in a numeric expression	**5.OA.1**	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
5.b4.F	simplify numerical expressions that do not involve exponents, including up to two levels of grouping	**5.OA.2**	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
5.b4.G	use concrete objects and pictorial models to develop the formulas for the volume of a rectangular prism, including the special form for a cube ($V = l \times w \times h$, $V = s \times s \times s$, and $V = Bh$)	**5.MD.5**	Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume. *A)Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.* *B) Apply the formulas $V = l \times w \times h$ and $V = b \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.*
5.b4.H	represent and solve problems related to perimeter and/or area and related to volume	**5.MD.3**	Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
(b5) Geometry and Measurement:			
The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to:			
5.b5	classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties	**5.G.3**	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
		5.G.4	Classify two-dimensional figures in a hierarchy based on properties.
(b6) Geometry and Measurement:			
The student applies mathematical process standards to understand, recognize, and quantify volume. The student is expected to:			
5.b6.A	recognize a cube with side length of one unit as a unit cube having one cubic unit of volume and the volume of a three-dimensional figure as the number of unit cubes (n cubic units) needed to fill it with no gaps or overlaps if possible	**5.MD.3**	Recognize volume as an attribute of solid figures and understand concepts of volume measurement. *A) A cube with side length 1 unit, called a "unit cube," is said to have "one cubic unit" of volume, and can be used to measure volume.* *B) A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.*
5.b6.B	determine the volume of a rectangular prism with whole number side lengths in problems related to the number of layers times the number of unit cubes in the area of the base		

Level 5 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b7) Geometry and Measurement:			
The student applies mathematical process standards to select appropriate units, strategies, and tools to solve problems involving measurement. The student is expected to:			
5.b7	solve problems by calculating conversions within a measurement system, customary or metric	**5.MD.1**	Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
(b8) Geometry and Measurement:			
The student applies mathematical process standards to identify locations on a coordinate plane. The student is expected to:			
5.b8.A	describe the key attributes of the coordinate plane, including perpendicular number lines (axes) where the intersection (origin) of the two lines coincides with zero on each number line and the given point (0, 0); the *x* -coordinate, the first number in an ordered pair, indicates movement parallel to the *x* -axis starting at the origin; and the *y* -coordinate, the second number, indicates movement parallel to the *y* -axis starting at the origin	**5.G.1**	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., *x* -axis and *x* -coordinate, *y* -axis and *y* -coordinate).
5.b8.B	describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane		
5.b8.C	graph in the first quadrant of the coordinate plane ordered pairs of numbers arising from mathematical and real-world problems, including those generated by number patterns or found in an input-output table	**5.G.2**	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.
(b9) Data Analysis:			
The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:			
5.b9.A	represent categorical data with bar graphs or frequency tables and numerical data, including data sets of measurements in fractions or decimals, with dot plots or stem-and-leaf plots	**6.SP.4 (Next Level)**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
5.b9.B	represent discrete paired data on a scatterplot	**8.SP.1 (Future Level)**	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
5.b9.C	solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot	**6.SP.4 (Next Level)**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
(b10) Personal Financial Literacy:			
The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security. The student is expected to:			
5.b10.A	define income tax, payroll tax, sales tax, and property tax		Not included in *Simple Solutions Standards-Based Mathematics.*
5.b10.B	explain the difference between gross income and net income		
5.b10.C	identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments		
5.b10.D	develop a system for keeping and using financial records		
5.b10.E	describe actions that might be taken to balance a budget when expenses exceed income		
5.b10.F	balance a simple budget		

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:			
6.b2.A	classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers		*Not included in Simple Solutions Standards-Based Mathematics.*
6.b2.B	identify a number, its opposite, and its absolute value	**6.NS.7**	Understand ordering and absolute value of rational numbers. *C) Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.* *D)Distinguish comparisons of absolute value from statements about order.*
		6.NS.8	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.
6.b2.C	locate, compare, and order integers and rational numbers using a number line	**6.NS.6**	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
6.b2.D	order a set of rational numbers arising from mathematical and real-world contexts	**5.NBT.1** **(Previous Level)**	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
6.b2.E	extend representations for division to include fraction notation such as a/b represents the same number as $a \div b$ where $b \neq 0$	**6.NS.1**	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
(b3) Numbers and Operations:			
The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:			
6.b3.A	recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values	**6.NS.1**	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
6.b3.B	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	**6.NS.7**	Understand ordering and absolute value of rational numbers. *C) Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.* *D)Distinguish comparisons of absolute value from statements about order.*
6.b3.C	represent integer operations with concrete models and connect the actions with the models to standardized algorithms	**6.NS.5**	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
		7.RP.1 **(Next Level)**	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *D) Apply properties of operations as strategies to add and subtract rational numbers.*
6.b3.D	add, subtract, multiply, and divide integers fluently	**6.NS.2**	Fluently divide multi-digit numbers using the standard algorithm.
		6.NS.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.
		6.NS.7	Understand ordering and absolute value of rational numbers.
6.b3.E	multiply and divide positive rational numbers fluently	**6.NS.2**	Fluently divide multi-digit numbers using the standard algorithm.

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b4) Proportionality:			
The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:			
6.b4.A	compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships	**6.EE.7**	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
6.b4.B	apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates	**6.RP.1**	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
		6.RP.2	Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.
6.b4.C	give examples of ratios as multiplicative comparisons of two quantities describing the same attribute	**6.RP.1**	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
6.b4.D	give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients	**6.RP.3**	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
6.b4.E	represent ratios and percents with concrete models, fractions, and decimals	**6.RP.1**	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
		6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *B) Solve unit rate problems including those involving unit pricing and constant speed.*
6.b4.F	represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers	**5.NBT.2** **(Previous Level)**	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
6.b4.G	generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money	**5.NF.1** **(Previous Level)**	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
		5.NF.2 **(Previous Level)**	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
6.b4.H	convert units within a measurement system, including the use of proportions and unit rates	**6.RP.3**	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *B) Solve unit rate problems including those involving unit pricing and constant speed.* *B) Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.*
		6.EE.6	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
		6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b5) Proportionality:			
The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to:			
6.b5.A	represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions	**6.RP.3**	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *A) Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.*
6.b5.B	solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models	**6.RP.3**	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *C) Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.*
6.b5.C	use equivalent fractions, decimals, and percents to show equal parts of the same whole	**5.NF.1 (Previous Level)**	Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
		5.NF.2 (Previous Level)	Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
(b6) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use multiple representations to describe algebraic relationships. The student is expected to:			
6.b6.A	identify independent and dependent quantities from tables and graphs	**6.EE.9**	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
6.b6.B	write an equation that represents the relationship between independent and dependent quantities from a table	**6.EE.7**	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
		6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
6.b6.C	represent a given situation using verbal descriptions, tables, graphs, and equations in the form $y = kx$ or $y = x + b$	**6.EE.4**	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).
		6.EE.7	Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p, q and x are all nonnegative rational numbers.
		6.RP.3	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. *A) Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.*

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b7) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:			
6.b7.A	generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization	**6.EE.1**	Write and evaluate numerical expressions involving whole-number exponents.
		6.EE.2	Write, read, and evaluate expressions in which letters stand for numbers. *C) Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).*
		6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
		6.NS.7	Understand ordering and absolute value of rational numbers. *B) Write, interpret, and explain statements of order for rational numbers in real-world contexts.*
6.b7.B	distinguish between expressions and equations verbally, numerically, and algebraically	**6.EE.2**	Write, read, and evaluate expressions in which letters stand for numbers. *B) Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.*
		6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.b7.C	determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations	**6.EE.2**	Write, read, and evaluate expressions in which letters stand for numbers. *C) Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).*
		6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
		6.NS.7	Understand ordering and absolute value of rational numbers. *B) Write, interpret, and explain statements of order for rational numbers in real-world contexts.*
6.b7.D	generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties	**6.NS.4**	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.
		6.EE.3	Apply the properties of operations to generate equivalent expressions.
		6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b8) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is expected to:			
6.b8.A	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	**5.G.3** (Previous Level)	Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.
6.b8.B	model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes	**6.G.1**	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
6.b8.C	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	**6.G.2**	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
6.b8.D	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	**6.G.1**	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
		6.G.2	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l\,w\,h$ and $V = b\,h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.
(b9) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to:			
6.b9.A	write one-variable, one-step equations and inequalities to represent constraints or conditions within problems	**6.EE.2**	Write, read, and evaluate expressions in which letters stand for numbers. *A) Write expressions that record operations with numbers and with letters standing for numbers.*
		6.EE.5	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
6.b9.B	represent solutions for one-variable, one-step equations and inequalities on number lines	**6.EE.2**	Write, read, and evaluate expressions in which letters stand for numbers. *A) Write expressions that record operations with numbers and with letters standing for numbers.*
		6.EE.8	Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
6.b9.C	write corresponding real-world problems given one-variable, one-step equations or inequalities	**6.EE.6**	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
		6.EE.9	Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.
(b10) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to:			
6.b10.A	model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts	**6.NS.7**	Understand ordering and absolute value of rational numbers. *A) Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.*
6.b10.B	determine if the given value(s) make(s) one-variable, one-step equations or inequalities true	**6.EE.5**	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Level 6 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b11) Measurement and Data:			
The student applies mathematical process standards to use coordinate geometry to identify locations on a plane. The student is expected to:			
6.b11	graph points in all four quadrants using ordered pairs of rational numbers	**6.NS.6**	Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
		6.G.3	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.
(b12) Measurement and Data:			
The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to:			
6.b12.A	represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots	**6.SP.4**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
		6.SP.5	Summarize numerical data sets in relation to their context.
6.b12.B	use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution	**6.SP.2**	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
		6.SP.5	Summarize numerical data sets in relation to their context.
6.b12.C	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	**6.SP.1**	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
		6.SP.2	Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
		6.SP.3	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
		6.SP.5	Summarize numerical data sets in relation to their context.
6.b12.D	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	**6.SP.4**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
		6.SP.5	Summarize numerical data sets in relation to their context.
(b13) Measurement and Data:			
The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to:			
6.b13.A	interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots	**6.SP.4**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
		6.SP.5	Summarize numerical data sets in relation to their context.
6.b13.B	distinguish between situations that yield data with and without variability	**6.SP.4**	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
		6.SP.5	Summarize numerical data sets in relation to their context.
(b14) 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:			
6.b14.A	compare the features and costs of a checking account and a debit card offered by different local financial institutions	Not included in Simple Solutions Standards-Based Mathematics.	
6.b14.B	distinguish between debit cards and credit cards		
6.b14.C	balance a check register that includes deposits, withdrawals, and transfers		
6.b14.D	explain why it is important to establish a positive credit history		
6.b14.E	describe the information in a credit report and how long it is retained		
6.b14.F	describe the value of credit reports to borrowers and to lenders		
6.b14.G	explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study		
6.b14.H	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		

Level 7 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:			
7.b2	extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers	**7.NS.2**	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. *D) Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.*
(b3) Numbers and Operations:			
The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. The student is expected to:			
7.b3.A	add, subtract, multiply, and divide rational numbers fluently	**7.NS.1**	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. *A) Describe situations in which opposite quantities combine to make 0.* *B) Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.* *C) Understand subtraction of rational numbers as adding the additive inverse, p - q = p + (-q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.* *D)Apply properties of operations as strategies to add and subtract rational numbers.*
		7.NS.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. *B) Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing real-world contexts.* *C) Apply properties of operations as strategies to multiply and divide rational numbers.*
7.b3.B	apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers	**7.NS.1**	Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. *D)Apply properties of operations as strategies to add and subtract rational numbers.*
(b4) Proportionality:			
The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:			
7.b4.A	represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$	**7.RP.2**	Recognize and represent proportional relationships between quantities. *B) Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.*
7.b4.B	calculate unit rates from rates in mathematical and real-world problems	**7.RP.1**	Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.
7.b4.C	determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems	**7.RP.2**	Recognize and represent proportional relationships between quantities. *A) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.* *C) Represent proportional relationships by equations.*
7.b4.D	solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems	**7.RP.3**	Use proportional relationships to solve multistep ratio and percent problems.
7.b4.E	convert between measurement systems, including the use of proportions and the use of unit rates	**7.RP.2**	Recognize and represent proportional relationships between quantities. *A) Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.*

Level 7 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b5) Proportionality:			
The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. The student is expected to:			
7.b5.A	generalize the critical attributes of similarity, including ratios within and between similar shapes	**8.G.1** (Next Level)	Verify experimentally the properties of rotations, reflections, and translations.
		8.G.2 (Next Level)	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
7.b5.B	describe π as the ratio of the circumference of a circle to its diameter	**7.G.4**	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
7.b5.C	solve mathematical and real-world problems involving similar shape and scale drawings	**7.G.1**	Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
(b6) Proportionality:			
The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships. The student is expected to:			
7.b6.A	represent sample spaces for simple and compound events using lists and tree diagrams	**7.SP.1**	Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
		7.SP.2	Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.
7.b6.B	select and use different simulations to represent simple and compound events with and without technology	**7.SP.8**	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
7.b6.C	make predictions and determine solutions using experimental data for simple and compound events		
7.b6.D	make predictions and determine solutions using theoretical probability for simple and compound events		
7.b6.E	find the probabilities of a simple event and its complement and describe the relationship between the two		
7.b6.F	use data from a random sample to make inferences about a population	**7.SP.4**	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
7.b6.G	solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents	**7.SP.6**	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
7.b6.H	solve problems using qualitative and quantitative predictions and comparisons from simple experiments	**7.SP.8**	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
7.b6.I	determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces	**7.SP.6**	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
(b7) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to:			
7.b7	represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$	**7.EE.1**	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

Level 7 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b8) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to develop geometric relationships with volume. The student is expected to:			
7.b8.A	model the relationship between the volume of a rectangular prism and a rectangular pyramid having both congruent bases and heights and connect that relationship to the formulas	**7.G.6**	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.b8.B	explain verbally and symbolically the relationship between the volume of a triangular prism and a triangular pyramid having both congruent bases and heights and connect that relationship to the formulas		
7.b8.C	use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas	**7.G.4**	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
(b9) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to solve geometric problems. The student is expected to:			
7.b9.A	solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids	**7.G.6**	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.b9.B	determine the circumference and area of circles	**7.G.4**	Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
7.b9.C	determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles	**7.G.6**	Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.
7.b9.D	solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net		
(b10) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use one-variable equations and inequalities to represent situations. The student is expected to:			
7.b10.A	write one-variable, two-step equations and inequalities to represent constraints or conditions within problems	**7.EE.4**	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *A) Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.*
7.b10.B	represent solutions for one-variable, two-step equations and inequalities on number lines		
7.b10.C	write a corresponding real-world problem given a one-variable, two-step equation or inequality		
(b11) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:			
7.b11.A	model and solve one-variable, two-step equations and inequalities	**7.EE.4**	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *B) Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.*
7.b11.B	determine if the given value(s) make(s) one-variable, two-step equations and inequalities true	**7.EE.4**	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
7.b11.C	write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships		

Level 7 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b12) Measurement and Data:			
The student applies mathematical process standards to use statistical representations to analyze data. The student is expected to:			
7.b12.A	compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads	**7.SP.4**	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.
7.b12.B	use data from a random sample to make inferences about a population	**7.SP.5**	Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.
		7.SP.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
		7.SP.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
7.b12.C	compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations	**7.SP.8**	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
(b13) Personal Financial Literacy:			
The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:			
7.b14.A	calculate the sales tax for a given purchase and calculate income tax for earned wages		Not included in *Simple Solutions Standards-Based Mathematics.*
7.b14.B	identify the components of a personal budget, including income; planned savings for college, retirement, and emergencies; taxes; and fixed and variable expenses, and calculate what percentage each category comprises of the total budget		
7.b14.C	create and organize a financial assets and liabilities record and construct a net worth statement		
7.b14.D	use a family budget estimator to determine the minimum household budget and average hourly wage needed for a family to meet its basic needs in the student's city or another large city nearby		
7.b14.E	calculate and compare simple interest and compound interest earnings		
7.b14.F	analyze and compare monetary incentives, including sales, rebates, and coupons		

Level 8 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b2) Numbers and Operations:			
The student applies mathematical process standards to represent and use real numbers in a variety of forms. The student is expected to:			
8.b2.A	extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers	**8.NS.1**	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
8.b2.B	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	**8.EE.2**	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational.
		8.NS.2	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.
8.b2.C	convert between standard decimal notation and scientific notation	**8.EE.3**	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.
		8.EE.4	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.
		8.EE.7	Solve linear equations in one variable. *A) Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).*
8.b2.D	order a set of real numbers arising from mathematical and real-world contexts	**8.NS.1**	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.
(b3) Proportionality:			
The student applies mathematical process standards to use proportional relationships to describe dilations The student is expected to:			
8.b3.A	generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation	**8.G.4**	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
8.b3.B	compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane	**8.G.3**	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
8.b3.C	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		

Level 8 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b4) Proportionality:			
The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope ***The student is expected to:***			
8.b4.A	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	**8.EE.6**	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.
8.b4.B	graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship	**8.EE.5**	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
		8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
8.b4.C	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.F.1**	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
		8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
		8.F.3	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
		8.F.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
		8.EE.5	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
		8.EE.6	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.

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Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b5) 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:			
8.b5.A	epresent linear proportional situations with tables, graphs, and equations in the form of $y = kx$;	**8.SP.4**	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.
8.b5.B	represent linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$, where $b \neq 0$		*Not included in Simple Solutions Standards-Based Mathematics.*
8.b5.C	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	**8.SP.1**	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
		8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
8.b5.D	use a trend line that approximates the linear relationship between bivariate sets of data to make predictions	**8.SP.1**	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
		8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
8.b5.E	solve problems involving direct variation	**8.SP.3**	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.
8.b5.F	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.F.1**	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
		8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
8.b5.G	identify functions using sets of ordered pairs, tables, mappings, and graph	**8.F.1**	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
		8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
		8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.b5.H	identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems	**8.F.1**	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
		8.F.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
		8.F.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
8.b5.I	write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations	**8.F.3**	Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
(b6) 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:			
8.b6.A	describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height	**8.G.9**	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
8.b6.B	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		
8.b6.C	use models and diagrams to explain the Pythagorean theorem	**8.G.6**	Explain a proof of the Pythagorean Theorem and its converse.
		8.G.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

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Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b7) Expressions, Equations, and Relationships:			
The student applies mathematical process standards to use geometry to solve problems. The student is expected to:			
8.b7.A	solve problems involving the volume of cylinders, cones, and spheres	**8.G.9**	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.
8.b7.B	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	**8.G.4**	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
8.b7.C	use the Pythagorean Theorem and its converse to solve problems	**8.G.7**	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
8.b7.D	determine the distance between two points on a coordinate plane using the Pythagorean Theorem	**8.G.8**	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
(b8) 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:			
8.b8.A	write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants	**7.EE.4 (Previous Level)**	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *A) Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.*
8.b8.B	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		
8.b8.C	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	**7.EE.1 (Previous Level)**	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
		7.EE.4 (Previous Level)	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *A) Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.*
8.b8.D	use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles	**8.G.5**	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.
(b9) 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:			
8.b9	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	**8.EE.7**	Solve linear equations in one variable. *A) Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).* *B) Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.*

Level 8 - Mathematics

Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b10) Two-Dimensional Shapes:			
The student applies mathematical process standards to develop transformational geometry concepts. The student is expected to:			
8.b10.A	generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane	**8.G.2**	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
8.b10.B	differentiate between transformations that preserve congruence and those that do not	**8.G.1**	Verify experimentally the properties of rotations, reflections, and translations.
		8.G.2	Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.
8.b10.C	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	**8.G.3**	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
8.b10.D	model the effect on linear and area measurements of dilated two-dimensional shapes	**8.G.1**	Verify experimentally the properties of rotations, reflections, and translations.
		8.G.3	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
		8.G.4	Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
(b11) Measurement and Data:			
The student applies mathematical process standards to use statistical procedures to describe data. The student is expected to:			
8.b11.A	construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data	**8.SP.1**	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
		8.SP.2	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
8.b11.B	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	**8.SP.3**	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.
		8.SP.4	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.
8.b11.C	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	**8.SP.4**	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables.

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Texas Essential Knowledge and Skills		*Simple Solutions* Standards	
(b12) 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:			
8.b12.A	solve real-world problems comparing how interest rate and loan length affect the cost of credit		Not included in *Simple Solutions Standards-Based Mathematics* .
8.b12.B	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.b12.C	explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time		
8.b12.D	calculate and compare simple interest and compound interest earnings		
8.b12.E	identify and explain the advantages and disadvantages of different payment methods		
8.b12.F	analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility		
8.b12.G	estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college		

TEKS to Simple Solutions Gap Analysis (by level)

Level K	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7	Level 8
2a	2a	2a	2a	2a	2a	2a	2	2a
2b	2b	2b	2b	2b	2b	2b	3a	2b
2c	2c	2c	2c	2c	2c	2c	3b	2c
2d	2d	2d	2d	2d	3a	2d	4a	2d
2e	2e	2e	3a	2e	3b	2e	4b	3a
2f	2f	2f	3b	2f	3c	3a	4c	3b
2g	2g	3a	3c	2g	3d	3b	4d	3c
2h	3a	3b	3d	2h	3e	3c	4e	4a
2i	3b	3c	3e	3a	3f	3d	5a	4b
3a	3c	3d	3f	3b	3g	3e	5b	4c
3b	3d	4a	3g	3c	3h	4a	5c	5a
3c	3e	4b	3h	3d	3i	4b	6a	5b
4	3f	4c	4a	3e	3j	4c	6b	5c
5	4a	4d	4b	3f	3k	4d	6c	5d
6a	4b	5a	4c	3g	3l	4e	6d	5e
6b	4c	5b	4d	4a	4a	4f	6e	5f
6c	5a	6a	4e	4b	4b	4g	6f	5g
6d	5b	6b	4f	4c	4c	4h	6g	5h
6e	5c	7a	4g	4d	4d	5a	6h	5i
6f	5d	7b	4h	4e	4e	5b	6i	6a
7a	5e	7c	4i	4f	4f	5c	7	6b
7b	5f	8a	4j	4g	4g	6a	8a	6c
8a	5g	8b	4k	4h	4h	6b	8b	7a
8b	6a	8c	5a	5a	5	6c	8c	7b
8c	6b	8d	5b	5b	6a	7a	9a	7c
9a	6c	8e	5c	5c	6b	7b	9b	7d
9b	6d	9a	5d	5d	7	7c	9c	8a
9c	6e	9b	5e	6a	8a	7d	9d	8b
9d	6f	9c	6a	6b	8b	8a	10a	8c
	6g	9d	6b	6c	8c	8b	10b	8d
	6h	9e	6c	6d	9a	8c	10c	9
	7a	9f	6d	7a	9b	8d	11a	10a
	7b	9g	6e	7b	9c	9a	11b	10b
	7c	10a	7a	7c	10a	9b	11c	10c
	7d	10b	7b	7d	10b	9c	12a	10d
	7e	10c	7c	7e	10c	10a	12b	11a
	8a	10d	7d	8a	10d	10b	12c	11b
	8b	11a	7e	8b	10e	11	13a	11c
	8c	11b	8a	8c	10f	12a	13b	12a
	9a	11c	8b	9a		12b	13c	12b
	9b	11d	9a	9b		12c	13d	12c
	9c	11e	9b	10a		12d	13e	12d
	9d	11f	9c	10b		13a	13f	12e
			9d	10c		13b		12f
			9e	10d		14a		12g
			9f	10e		14b		
						14c		
						14d		
						14e		
						14f		
						14g		
						14h		

KEY
Covered
Partially Covered
Previous Level
Next *or* Future Level
Not Included