STAAR®
Alternate 2

State of Texas
Assessments of
Academic Readiness
——Alternate 2——

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TEKS Curriculum Framework for STAAR Alternate 2
Grade 6 Mathematics

STAAR Reporting Category 1 – Numerical Representations and Relationships: The student will demonstrate an understanding of how to represent and manipulate numbers and expressions.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations**
(6.2) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to (A) classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers; Supporting Standard (B) identify a number, its opposite, and its absolute value; Supporting Standard (C) locate, compare, and order integers and rational numbers using a number line; Supporting Standard (D) order a set of rational numbers arising from mathematical and real-world contexts; Readiness Standard (E) extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0. Supporting Standard	Recognizes relationships in and between sets of numbers.

6.2	Prerequisite Skills/Links to TEKS Vertical Alignment
	Representing and Using Fractions, Decimals, Per cents and Probability • compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < • determine if two given fractions are equivalent using a variety of methods • 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 • represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$ • relate decimals to fractions that name tenths and hundredths • represent decimals, including tenths and hundredths, using concrete and visual models and money • 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 • represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines

6.2	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• 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
	• 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 $1/b$
	• 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
	• 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
	• identify examples and non-examples of halves, fourths, and eighths
	• use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole
	• explain that the more fractional parts used to make a whole, the smaller the part: the fewer the fractional parts, the larger the part
	• partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words
	• identify examples and non-examples of halves and fourths
	• partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words
	Determining and Simplifying Numeric and Algebraic Expressions
	• simplify numerical expressions that do not involve exponents, including up to two levels of grouping
	• describe the meaning of parentheses and brackets in a numeric expression
	• represent the value of the digit in decimals through the thousandths using expanded notation and numerals
	• represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals
	• 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
	• describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
	• 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
	• use standard, word, and expanded forms to represent numbers up to 1,200
	• 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
	• apply properties of operations to add and subtract two or three numbers
	• use objects, pictures, and expanded and standard forms to represent numbers up to 120
	• 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
	• compose and decompose numbers up to 10 with objects and pictures
	Continued

6.2	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Identifying Points and Distances on Number Lines

Identifying Points and Distances on Number Lines
- represent fractions and decimals to the tenths or hundredths as distances from zero on a number line
- determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line
- represent fractions of halves, fourths, and eighths as distances from zero on a number line
- 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
- 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
- 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
- represent whole numbers as distances from any given location on a number line
- name the whole number that corresponds to a specific point on a number line
- locate the position of a given whole number on an open number line

Geometry and spatial sense skills
- demonstrate use of location words (such as "over," "under," "above," "on," "beside," "next to," "between," "in front of," "near," "far," etc.)

Comparing, Ordering, and Rounding Numbers Using Place Value
- round decimals to tenths or hundredths
- compare and order two decimals to thousandths and represent comparisons using the symbols >, <, or =
- compare and order decimals using concrete and visual models to the hundredths
- round whole numbers to a given place value through the hundred thousands place
- compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols >, <, or =
- compare and order whole numbers up to 100,000 and represent comparisons using the symbols >, <, or =
- 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
- use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =)
- use relationships to determine the number that is 10 more and 10 less than a given number up to 120
- represent the comparison of two numbers to 100 using the symbols >,<, or =
- order whole numbers up to 120 using place value and open number lines
- use place value to compare whole numbers up to 120 using comparative language
- use comparative language to describe two numbers up to 20 presented as written numerals
- compare sets of objects up to at least 20 in each set using comparative language

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6.2	Prerequisite Skills/Links to TEKS Vertical Alignment

Recognizing Numbers and Counting
- identify prime and composite numbers
- determine if a number is even or odd using divisibility rules
- determine whether a number up to 40 is even or odd using pairings of objects to represent the number
- generate a number that is greater than or less than a given whole number up to 1,200
- skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set
- recite numbers forward and backward from any given number between 1 and 120
- generate a number that is greater than or less than a given whole number up to 120
- recognize instantly the quantity of structured arrangements
- recite numbers up to at least 100 by ones and tens beginning with any given number
- generate a number that is one more than or one less than another number up to at least 20
- 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
- recognize instantly the quantity of a small group of objects in organized and random arrangements
- 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
- read, write, and represent whole numbers from 0 to at least 20 with and without objects or pictures
- count forward and backward to at least 20 with and without objects

Counting skills
- recognize one-digit numerals, 0-9
- verbally identify, without counting, the number of objects from 1 to 5
- use the verbal ordinal terms
- demonstrate understanding that when counting, the items can be chosen in any order
- count up to 10 items and demonstrate that the last count indicates how many items were counted
- demonstrate that the order of the counting sequence is always the same, regardless of what is counted
- count 1-10 items, with one count per item
- use words to rote count from 1 to 30
- know that objects, or parts of an object, can be counted

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 1 – Numerical Representations and Relationships: The student will demonstrate an understanding of how to represent and manipulate numbers and expressions.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations**
(6.4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to (C) give examples of ratios as multiplicative comparisons of two quantities describing the same attribute; Supporting Standard (D) give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients; Supporting Standard (E) represent ratios and percents with concrete models, fractions, and decimals; Supporting Standard (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; Supporting Standard (G) generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money. Readiness Standard	Identifies proportional relationships in a variety of forms.

6.4	Prerequisite Skills/Links to TEKS Vertical Alignment
	Representing and Using Fractions, Decimals, Percents and Probability • compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < • determine if two given fractions are equivalent using a variety of methods • 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 • represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$ • relate decimals to fractions that name tenths and hundredths • represent decimals, including tenths and hundredths, using concrete and visual models and money • 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 • represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines

6.4	Prerequisite Skills/Links to TEKS Vertical Alignment
	• 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 • 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 $1/b$ • 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 • 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 • identify examples and non-examples of halves, fourths, and eighths • use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole • explain that the more fractional parts used to make a whole, the smaller the part: the fewer the fractional parts, the larger the part • partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words • identify examples and non-examples of halves and fourths • partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 1 – Numerical Representations and Relationships: The student will demonstrate an understanding of how to represent and manipulate numbers and expressions.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectation**
(6.5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to (C) use equivalent fractions, decimals, and percents to show equal parts of the same whole. Supporting Standard	Recognizes equal parts of a whole using equivalent fractions.

6.5	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Representing and Using Fractions, Decimals, Percents and Probability • compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < • determine if two given fractions are equivalent using a variety of methods • 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 • represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$ • relate decimals to fractions that name tenths and hundredths • represent decimals, including tenths and hundredths, using concrete and visual models and money • 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 • represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines • 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 • 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 $1/b$ • 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 • 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 • identify examples and non-examples of halves, fourths, and eighths • use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole • explain that the more fractional parts used to make a whole, the smaller the part: the fewer the fractional parts, the larger the part *Continued*

6.5	Prerequisite Skills/Links to TEKS Vertical Alignment	6.5
	• partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words • identify examples and non-examples of halves and fourths • partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words	

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 1 – Numerical Representations and Relationships: The student will demonstrate an understanding of how to represent and manipulate numbers and expressions.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to (A) generate equivalent numerical expressions using order of operations, including whole number exponents, and prime factorization; Readiness Standard (B) distinguish between expressions and equations verbally, numerically, and algebraically; Supporting Standard (C) determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations; and Supporting Standard (D) generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties. Readiness Standard	Determines equivalent expressions and equations.

6.7	Prerequisite Skills/Links to TEKS Vertical Alignment

Determining and Simplifying Numeric and Algebraic Expressions
- simplify numerical expressions that do not involve exponents, including up to two levels of grouping
- describe the meaning of parentheses and brackets in a numeric expression
- represent the value of the digit in decimals through the thousandths using expanded notation and numerals
- represent the value of the digit in whole numbers through 1,000,000,000 and decimals to the hundredths using expanded notation and numerals
- 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
- describe the mathematical relationships found in the base-10 place value system through the hundred thousands place
- 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
- use standard, word, and expanded forms to represent numbers up to 1,200
- 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
- apply properties of operations to add and subtract two or three numbers
- use objects, pictures, and expanded and standard forms to represent numbers up to 120

Continued

6.7	Prerequisite Skills/Links to TEKS Vertical Alignment
	• 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 • compose and decompose numbers up to 10 with objects and pictures

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.3) Number 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 (A) recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values; Supporting Standard (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; Supporting Standard (C) represent integer operations with concrete models and connect the actions with the models to standardized algorithms; Supporting Standard (D) add, subtract, multiply, and divide integers fluently; Readiness Standard (E) multiply and divide positive rational numbers fluently. Readiness Standard	Finds solutions to addition, subtraction, multiplication, or division problems.

6.3	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Multiplying Whole Numbers, Fractions, and Decimals • 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 • 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 • represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models • multiply with fluency a three-digit number by a two-digit number using the standard algorithm • 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 • represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15

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6.3	Prerequisite Skills/Links to TEKS Vertical Alignment

- determine products of a number and 10 or 100 using properties of operations and place value understandings
- describe a multiplication expression as a comparison such as 3×24 represents 3 times as much as 24
- 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
- recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts
- 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
- determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10
- model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined

Adding and Subtracting Whole Numbers, Fractions, and Decimals

- add and subtract positive rational numbers fluently
- 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
- add and subtract whole numbers and decimals to the hundredths place using the standard algorithm
- 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
- 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
- round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems
- 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
- 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
- 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
- recall basic facts to add and subtract within 20 with automaticity
- explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences
- apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10
- compose 10 with two or more addends with and without concrete objects
- 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
- use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99

Continued

6.3	Prerequisite Skills/Links to TEKS Vertical Alignment
	• explain the strategies used to solve problems involving adding and subtracting within 10 using spoken words, concrete and pictorial models, and number sentences
	• solve word problems using objects and drawings to find sums up to 10 and differences within 10
	• model the action of joining to represent addition and the action of separating to represent subtraction
	Dividing Whole Numbers, Fractions, and Decimals
	• divide whole numbers by unit fractions and unit fractions by whole numbers
	• represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as $1/3 \div 7$ and $7 \div 1/3$ using objects and pictorial models, including area models
	• 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
	• 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
	• solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm
	• use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor
	• represent the quotient of up to a four-digit whole number divided by a one-digit whole number using arrays, area models, or equations
	• 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
	• determine a quotient using the relationship between multiplication and division
	• 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
	• model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets
	Adding to/taking away skills
	• use informal strategies to separate up to 10 items into equal groups
	• use concrete models or make a verbal word problem for subtracting 0–5 objects from a set
	• use concrete objects, create pictorial models and share a verbal word problem for adding up to 5 objects

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations**
(6.4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to (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; Supporting Standard (B) apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates. Readiness Standard	Uses proportional relationships to solve problems.

6.4	Prerequisite Skills/Links to TEKS Vertical Alignment

Representing and Solving Algebraic Relationships
- recognize the difference between additive and multiplicative numerical patterns given in a table or graph
- generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph
- represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity
- 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
- represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity
- represent real-world relationships using number pairs in a table and verbal descriptions
- 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
- represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
- represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
- represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
- generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000
- 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

Continued

6.4	Prerequisite Skills/Links to TEKS Vertical Alignment
	• understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s) • represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20 **Classification and patterns skills** • recognize and create patterns *Representing and Using Fractions, Decimals, Percents and Probability* • compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < • determine if two given fractions are equivalent using a variety of methods • 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 • represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$ • relate decimals to fractions that name tenths and hundredths • represent decimals, including tenths and hundredths, using concrete and visual models and money • 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 • represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines • 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 • 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 $1/b$ • 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 • 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 • identify examples and non-examples of halves, fourths, and eighths • use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole • explain that the more fractional parts used to make a whole, the smaller the part: the fewer the fractional parts, the larger the part • partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words • identify examples and non-examples of halves and fourths • partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to (A) represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions; Supporting Standard (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. Readiness Standard	Solves problems involving ratios or rates.

6.5	**Prerequisite Skills/Links to TEKS Vertical Alignment**

Representing and Solving Algebraic Relationships
- recognize the difference between additive and multiplicative numerical patterns given in a table or graph
- generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph
- represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity
- 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
- represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity
- represent real-world relationships using number pairs in a table and verbal descriptions
- 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
- represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
- represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
- represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
- generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000
- 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

Continued

6.5	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s) • represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20 **Classification and patterns skills** • recognize and create patterns *Representing and Using Fractions, Decimals, Percents and Probability* • compare two fractions with different numerators and different denominators and represent the comparison using the symbols >, =, or < • determine if two given fractions are equivalent using a variety of methods • 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 • represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$ • relate decimals to fractions that name tenths and hundredths • represent decimals, including tenths and hundredths, using concrete and visual models and money • 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 • represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines • 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 • 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 $1/b$ • 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 • 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 • identify examples and non-examples of halves, fourths, and eighths • use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole • explain that the more fractional parts used to make a whole, the smaller the part: the fewer the fractional parts, the larger the part • partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words • identify examples and non-examples of halves and fourths • partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.6) Expressions, equations, and relationships. The student applies mathematical process standards to use multiple representations to describe algebraic relationships. The student is expected to (A) identify independent and dependent quantities from tables and graphs; Supporting Standard (B) write an equation that represents the relationship between independent and dependent quantities from a table; Supporting Standard (C) represent a given situation using verbal descriptions, tables, graphs, and equations in the form $y = kx$ or $y = x + b$. Readiness Standard	Identifies linear relationships in a variety of forms.

6.6	**Prerequisite Skills/Links to TEKS Vertical Alignment**

Representing and Solving Algebraic Relationships
- recognize the difference between additive and multiplicative numerical patterns given in a table or graph
- generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph
- represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity
- 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
- represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity
- represent real-world relationships using number pairs in a table and verbal descriptions
- 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
- represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
- represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
- represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
- generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000

Continued

6.6	Prerequisite Skills/Links to TEKS Vertical Alignment
	• 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 • understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s) • represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20 **Classification and patterns skills** • recognize and create patterns

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.9) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to (A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems; Supporting Standard (B) represent solutions for one-variable, one-step equations and inequalities on number lines; Supporting Standard (C) write corresponding real-world problems given one-variable, one-step equations or inequalities. Supporting Standard	Uses equations or inequalities to model real-life situations.

6.9	**Prerequisite Skills/Links to TEKS Vertical Alignment**

Representing and Solving Algebraic Relationships
- recognize the difference between additive and multiplicative numerical patterns given in a table or graph
- generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph
- represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity
- 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
- represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity
- represent real-world relationships using number pairs in a table and verbal descriptions
- 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
- represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
- represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
- represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
- generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000

Continued

6.9	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• 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 • understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s) • represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20 **Classification and patterns skills** • recognize and create patterns

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 2 – Computations and Algebraic Relationships: The student will demonstrate an understanding of how to perform operations and represent algebraic relationships.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.10) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to (A) model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts; Readiness Standard (B) determine if the given value(s) make(s) one-variable, one-step equations or inequalities true. Supporting Standard	Uses equations or inequalities to model and solve problems.

6.10	Prerequisite Skills/Links to TEKS Vertical Alignment

Representing and Solving Algebraic Relationships
- recognize the difference between additive and multiplicative numerical patterns given in a table or graph
- generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph
- represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity
- 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
- represent multi-step problems involving the four operations with whole numbers using strip diagrams and equations with a letter standing for the unknown quantity
- represent real-world relationships using number pairs in a table and verbal descriptions
- 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
- represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations
- represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations
- represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem
- generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000
- 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

Continued

6.10	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s) represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences • generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20 **Classification and patterns skills** • recognize and create patterns

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 3 – Geometry and Measurement: The student will demonstrate an understanding of how to represent and apply geometry and measurement concepts.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectation
(6.4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to (H) convert units within a measurement system, including the use of proportions and unit rates. Readiness Standard	Uses conversions within a measurement system to solve problems.

6.4	Prerequisite Skills/Links to TEKS Vertical Alignment
	Measuring Length, Area, Volume, and Weight/Mass • solve problems by calculating conversions within a measurement system, customary or metric • 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 • 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 • represent and solve problems related to perimeter and/or area and related to volume • 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 $V = Bh$) • solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate • 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 • identify relative sizes of measurement units within the customary and metric systems • solve problems related to perimeter and area of rectangles where dimensions are whole numbers • 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 ($l \times w$) • determine liquid volume (capacity) or weight using appropriate units and tools • determine when it is appropriate to use measurements of liquid volume (capacity) or weight • determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems • 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 *Continued*

6.4	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area • 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 • 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 • determine a solution to a problem involving length, including estimating lengths • determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes • describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object • find the length of objects using concrete models for standard units of length • describe a length to the nearest whole unit using a number and a unit • measure the same object/distance with units of two different lengths and describe how and why the measurements differ • 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 • use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement • compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference • give an example of a measurable attribute of a given object, including length, capacity, and weight *Measuring Time* • 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 • read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m. • tell time to the hour and half hour using analog and digital clocks **Measurement skills** • use language to describe concepts associated with the passing of time • informally recognize and compare weights of objects or people • recognize how much can be placed within an object • recognize and compare heights or lengths of people or objects

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 3 – Geometry and Measurement: The student will demonstrate an understanding of how to represent and apply geometry and measurement concepts.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations

(6.8) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is expected to
    (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; Supporting Standard
    (B) model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes; Supporting Standard
    (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; Supporting Standard
    (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. Readiness Standard
	Models or uses geometric relationships to solve problems.

6.8	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Measuring Angles and Using Angle Relationships • determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures • draw an angle with a given measure • determine the approximate measures of angles in degrees to the nearest whole number using a protractor • 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) • 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

Continued

6.8	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Measuring Length, Area, Volume, and Weight/Mass
	• solve problems by calculating conversions within a measurement system, customary or metric
	• 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
	• 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
	• represent and solve problems related to perimeter and/or area and related to volume
	• 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 $V = Bh$)
	• solve problems that deal with measurements of length, intervals of time, liquid volumes, mass, and money using addition, subtraction, multiplication, or division as appropriate
	• 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
	• identify relative sizes of measurement units within the customary and metric systems
	• solve problems related to perimeter and area of rectangles where dimensions are whole numbers
	• 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 ($l \times w$)
	• determine liquid volume (capacity) or weight using appropriate units and tools
	• determine when it is appropriate to use measurements of liquid volume (capacity) or weight
	• determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems
	• 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
	• decompose composite figures formed by rectangles into non-overlapping rectangles to determine the area of the original figure using the additive property of area
	• 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
	• 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
	• determine a solution to a problem involving length, including estimating lengths
	• determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes
	• describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object
	• find the length of objects using concrete models for standard units of length
	• describe a length to the nearest whole unit using a number and a unit
	Continued

6.8	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• measure the same object/distance with units of two different lengths and describe how and why the measurements differ
	• 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
	• use measuring tools to measure the length of objects to reinforce the continuous nature of linear measurement
	• compare two objects with a common measurable attribute to see which object has more of/less of the attribute and describe the difference
	• give an example of a measurable attribute of a given object, including length, capacity, and weight
	Measurement skills
	• informally recognize and compare weights of objects or people
	• recognize how much can be placed within an object
	• recognize and compare heights or lengths of people or objects

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 3 – Geometry and Measurement: The student will demonstrate an understanding of how to represent and apply geometry and measurement concepts.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectation	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectation**
(6.11) Measurement and data. The student applies mathematical process standards to use coordinate geometry to identify locations on a plane. The student is expected to (A) graph points in all four quadrants using ordered pairs of rational numbers. Readiness Standard	Locates points on a coordinate plane.

6.11	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Graphing on the Coordinate Plane • 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 • describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane • 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. The *y*-coordinate, the second number, indicates movement parallel to the *y*-axis starting at the origin *Identifying Points and Distances on Number Lines* • represent fractions and decimals to the tenths or hundredths as distances from zero on a number line* • determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line* • represent fractions of halves, fourths, and eighths as distances from zero on a number line* • 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* • 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* • 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* • represent whole numbers as distances from any given location on a number line* • name the whole number that corresponds to a specific point on a number line* • locate the position of a given whole number on an open number line* *Continued*

6.11	Prerequisite Skills/Links to TEKS Vertical Alignment
	Geometry and spatial sense skills • demonstrate use of location words (such as "over," "under," "above," "on," "beside," "next to," "between," "in front of," "near," "far," etc.)*

*These prerequisite skills were borrowed from different knowledge and skills statement(s) due to similar content.

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 4 – Data Analysis and Personal Financial Literacy: The student will demonstrate an understanding of how to represent and analyze data and how to describe and apply personal financial concepts.

TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations
(6.12) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to (A) represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots; Supporting Standard (B) use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution; Supporting Standard (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; Readiness Standard (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. Readiness Standard	Displays data or determines characteristics of data.

6.12	Prerequisite Skills/Links to TEKS Vertical Alignment

Collecting and Representing Data
- represent discrete paired data on a scatterplot
- 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
- represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions
- summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals
- organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more
- 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
- use data to create picture and bar-type graphs

Continued

6.12	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts • use data to create real-object and picture graphs • collect, sort, and organize data into two or three categories **Classification and patterns skills** • collect data and organize it in a graphic representation • sort objects that are the same and different into groups and use language to describe how the groups are similar and different *Using Data* • solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot • 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 • solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals • draw conclusions and make predictions from information in a graph • write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one • draw conclusions and generate and answer questions using information from picture and bar-type graphs • draw conclusions from real-object and picture graphs

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 4 – Data Analysis and Personal Financial Literacy: The student will demonstrate an understanding of how to represent and analyze data and how to describe and apply personal financial concepts.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations**
(6.13) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to 　(A) interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots; and Readiness Standard 　(B) distinguish between situations that yield data with and without variability. Supporting Standard	Interprets graphical representations of data.

6.13	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	Using Data 　• solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot 　• 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 　• solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals 　• draw conclusions and make predictions from information in a graph 　• write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one 　• draw conclusions and generate and answer questions using information from picture and bar-type graphs 　• draw conclusions from real-object and picture graphs *Collecting and Representing Data* 　• represent discrete paired data on a scatterplot 　• 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 　• represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions 　• summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals 　• organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more 　• 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 *Continued*

6.13	Prerequisite Skills/Links to TEKS Vertical Alignment
	- use data to create picture and bar-type graphs - collect, sort, and organize data in up to three categories using models/representations such as tally marks or T-charts - use data to create real-object and picture graphs - collect, sort, and organize data into two or three categories **Classification and patterns skills** - collect data and organize it in a graphic representation - sort objects that are the same and different into groups and use language to describe how the groups are similar and different

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

STAAR Reporting Category 4 – Data Analysis and Personal Financial Literacy: The student will demonstrate an understanding of how to represent and analyze data and how to describe and apply personal financial concepts.	
TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations	**Essence of TEKS Knowledge and Skills Statement/ STAAR-Tested Student Expectations**
(6.14) 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 　　(A) compare the features and costs of a checking account and a debit card offered by different local financial institutions; Supporting Standard 　　(B) distinguish between debit cards and credit cards; Supporting Standard 　　(C) balance a check register that includes deposits, withdrawals, and transfers; Supporting Standard 　　(E) describe the information in a credit report and how long it is retained; Supporting Standard 　　(F) describe the value of credit reports to borrowers and to lenders; Supporting Standard 　　(G) explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study; Supporting Standard 　　(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. Supporting Standard	Recognizes good decisions related to income and expenses.

6.14	Prerequisite Skills/Links to TEKS Vertical Alignment
	Managing Finances • balance a simple budget • describe actions that might be taken to balance a budget when expenses exceed income • develop a system for keeping and using financial records • identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments • describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending

6.14	Prerequisite Skills/Links to TEKS Vertical Alignment
	- describe how to allocate a weekly allowance among spending; saving, including for college; and sharing - compare the advantages and disadvantages of various savings options - calculate profit in a given situation - identify decisions involving income, spending, saving, credit, and charitable giving - list reasons to save and explain the benefit of a savings plan, including for college - 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 - identify the costs and benefits of planned and unplanned spending decisions - describe the relationship between the availability or scarcity of resources and how that impacts cost - differentiate between producers and consumers and calculate the cost to produce a simple item - identify examples of lending and use concepts of benefits and costs to evaluate lending decisions - identify examples of borrowing and distinguish between responsible and irresponsible borrowing - distinguish between a deposit and a withdrawal - explain that saving is an alternative to spending - calculate how money saved can accumulate into a larger amount over time - consider charitable giving - distinguish between spending and saving *Understanding the Connections Among Income, Expenses, and Careers* - explain the difference between gross income and net income - define income tax, payroll tax, sales tax, and property tax - distinguish between fixed and variable expenses - explain the connection between human capital/labor and income - identify income as a means of obtaining goods and services, oftentimes making choices between wants and needs - define money earned as income - distinguish between wants and needs and identify income as a source to meet one's wants and needs - list simple skills required for jobs - differentiate between money received as income and money received as gifts - identify ways to earn income *Determining Values of Coins and Bills* - determine the value of a collection of coins and bills - use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coins - determine the value of a collection of coins up to one dollar - use relationships to count by twos, fives, and tens to determine the value of a collection of pennies, nickels, and/or dimes *Continued*

6.14	**Prerequisite Skills/Links to TEKS Vertical Alignment**
	• write a number with the cent symbol to describe the value of a coin • identify U.S. coins, including pennies, nickels, dimes, and quarters, by value and describe the relationships among them • identify U.S. coins by name, including pennies, nickels, dimes, and quarters

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.

Mathematical Process Standards – Mathematical process standards will not be listed under a separate reporting category. Instead, they will be incorporated into test questions across reporting categories since the application of mathematical process standards is part of each knowledge statement.

<table>
<tr><td align="center">TEKS Knowledge and Skills Statement/STAAR-Tested Student Expectations</td></tr>
<tr><td>

(6.1)   Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

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6.1	Prerequisite Skills/Links to TEKS Vertical Alignment
	- display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication. - analyze mathematical relationships to connect and communicate mathematical ideas - create and use representations to organize, record, and communicate mathematical ideas - communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate - select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems - use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution - apply mathematics to problems arising in everyday life, society, and the workplace

NOTE: Under each heading the prerequisite skills are arranged from the highest grade level to the lowest grade level.