



# 2017–2018 School Year Texas Correlation

Texas Essential Knowledge and Skills (TEKS)

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Percent Correlation to Texas Essential Knowledge and Skills – 2012	
Grade 3	
94% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
3.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	<b>Process Standard</b>
3.9.A: explain the connection between human capital/labor and income;	<b>Supporting Standard</b>
3.9.C: identify the costs and benefits of planned and unplanned spending decisions;	<b>Supporting Standard</b>
Grade 4	
96% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
4.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	<b>Process Standard</b>
4.10.E: describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending.	<b>Supporting Standard</b>
Grade 5	
96% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
5.10.A: define income tax, payroll tax, sales tax, and property tax;	<b>Supporting Standard</b>
5.10.B: explain the difference between gross income and net income;	<b>Supporting Standard</b>
Grade 6	
97% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
6.14.A: compare the features and costs of a checking account and a debit card offered by different local financial institutions;	<b>Supporting Standard</b>
6.14.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.	<b>Supporting Standard</b>

Grade 7 94% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
7.10.C: write a corresponding real-world problem given a one-variable, two-step equation or inequality. <b>Supporting Standard</b>	
7.13.C: create and organize a financial assets and liabilities record and construct a net worth statement; <b>Supporting Standard</b>	
7.13.F: analyze and compare monetary incentives, including sales, rebates, and coupons. <b>Supporting Standard</b>	
Grade 8 96% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
8.12.C: explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time; <b>Supporting Standard</b>	
8.12.F: analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility; and <b>Supporting Standard</b>	
Algebra I 96% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
AI.4.A: calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association; <b>Supporting Standard</b>	
AI.8.B: write, using technology, quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems. <b>Supporting Standard</b>	
Geometry 88% Coverage in Imagine Math	
<b>Standards not addressed:</b>	
G.4.B identify and determine the validity of the converse, inverse, and contrapositive of a conditional statement and recognize the connection between a biconditional statement and a true conditional statement with a true converse;	
G.4.C verify that a conjecture is false using a counterexample; and	
G.4.D compare geometric relationships between Euclidean and spherical geometries, including parallel lines and the sum of the angles in a triangle.	
G.5.D verify the Triangle Inequality theorem using constructions and apply the theorem to solve problems.	
G.11.A apply the formula for the area of regular polygons to solve problems using appropriate units of measure;	
G.13.A develop strategies to use permutations and combinations to solve contextual problems;	

Texas Essential Knowledge and Skills	Imagine Math	
Grade 3	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
3.1.A: apply mathematics to problems arising in everyday life, society, and the workplace	Embedded throughout the program	Embedded throughout the program
3.1.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;	Embedded throughout the program	Embedded throughout the program
3.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
3.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
3.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
3.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Standard not addressed	Standard not addressed
<b>(2) Number 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:</b>		
3.2.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;	Number and Operations in Base Ten	Place Value with Whole Numbers I Place Value with Whole Numbers II
3.2.B: describe the mathematical relationships found in the base-10 place value system through the hundred thousands place;	Number and Operations in Base Ten	Place Value with Whole Numbers I

Texas Essential Knowledge and Skills	Imagine Math	
Grade 3	Unit	Lesson
3.2.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; and	Number and Operations in Base Ten	Reasoning About Place Value and Rounding Rounding to the Nearest Ten and Hundred
3.2.D: compare and order whole numbers up to 100,000 and represent comparisons using the symbols $>$ ,	Number and Operations in Base Ten	Reasoning About Place Value and Rounding
<b>(3) Number and operations. The student applies mathematical process standards to represent and explain fractional units. The student is expected to:</b>		
3.3.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;	Number and Operations - Fractions	Understanding Fractions - Equal Areas Understanding Fractions - Notation Unit Fractions on the Number Line Fractions on the Number Line
3.3.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;	Number and Operations - Fractions	Unit Fractions on the Number Line Fractions on the Number Line
3.3.C: explain that the unit fraction $\frac{1}{b}$ 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;	Number and Operations - Fractions	Unit Fractions on the Number Line Fractions on the Number Line
3.3.D: compose and decompose a fraction $\frac{a}{b}$ with a numerator greater than zero and less than or equal to $b$ as a sum of parts $\frac{1}{b}$ ;	Number and Operations - Fractions	Understanding Fractions - Equal Areas
3.3.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;	Number and Operations - Fractions	Understanding Fractions - Equal Areas Understanding Fractions - Notation
3.3.F: represent equivalent fractions with denominators of 2, 3, 4, 6, and 8 using a variety of objects and pictorial models, including number lines;	Number and Operations - Fractions	Modeling Equivalent Fractions with Number Lines Visual Models of Equivalent Fractions Whole Numbers as Fractions Whole Numbers as Fractions on the Number Line

Texas Essential Knowledge and Skills	Imagine Math	
Grade 3	Unit	Lesson
3.3.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; and	Number and Operations - Fractions	Modeling Equivalent Fractions with Number Lines Visual Models of Equivalent Fractions
3.3.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	Number and Operations - Fractions	Comparing Fractions with the Same Numerator or Denominator Recognizing Valid Fraction Comparisons I
<b>(4) Number 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:</b>		
3.4.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;	Number and Operations in Base Ten	Reasoning About Addition and Subtraction Within 1,000
3.4.B: round to the nearest 10 or 100 or use compatible numbers to estimate solutions to addition and subtraction problems;	Operations and Algebraic Thinking	Estimating Sums and Differences - Application
3.4.C: determine the value of a collection of coins and bills;	Measurement and Data	Money Sense
3.4.D: determine the total number of objects when equally-sized groups of objects are combined or arranged in arrays up to 10 by 10;	Operations and Algebraic Thinking	Equal Groups II
3.4.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;	Operations and Algebraic Thinking	Concept of Multiplication - Grouping Concept of Multiplication - Word Problems Concept of Multiplication - Arrays
3.4.F: recall facts to multiply up to 10 by 10 with automaticity and recall the corresponding division facts;	Operations and Algebraic Thinking	Concept of Multiplication - Word Problems Concept of Division
	Number and Operations in Base Ten	Multiplying by Multiples of Ten

Texas Essential Knowledge and Skills	Imagine Math	
<i>Grade 3</i>	<i>Unit</i>	<i>Lesson</i>
3.4.G: use strategies and algorithms, including the standard algorithm, to multiply a twodigit number by a one-digit number. Strategies may include mental math, partial products, and the commutative, associative, and distributive properties;	Operations and Algebraic Thinking	Concept of Multiplication - Word Problems
	Number and Operations in Base Ten	Multiplying by Multiples of Ten
	Operations and Algebraic Thinking	Properties of Addition and Multiplication
3.4.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;	Operations and Algebraic Thinking	Concept of Division
3.4.I: determine if a number is even or odd using divisibility rules;	Operations and Algebraic Thinking	Odd or Even
3.4.J: determine a quotient using the relationship between multiplication and division; and	Operations and Algebraic Thinking	Relationship Between Multiplication and Division Multiplication and Division Fact Families Division as an Unknown-Factor Problem
3.4.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.	Operations and Algebraic Thinking	Concept of Multiplication - Grouping Concept of Multiplication - Word Problems Concept of Multiplication - Arrays Concept of Division Interpreting Division Problems Relationship Between Multiplication and Division Multiplication and Division Fact Families Properties of Addition and Multiplication Using Visual Models to Understand the Distributive Property
<b>(5) Algebraic reasoning. The student applies mathematical process standards to analyze and create patterns and relationships. The student is expected to:</b>		
3.5.A: represent one- and two-step problems involving addition and subtraction of whole numbers to 1,000 using pictorial models, number lines, and equations;	Number and Operations in Base Ten	Structuring Within 1,000 Reasoning About Addition and Subtraction Within 1,000



Texas Essential Knowledge and Skills	Imagine Math	
Grade 3	Unit	Lesson
3.5.B: represent and solve one- and two-step multiplication and division problems within 100 using arrays, strip diagrams, and equations;	Operations and Algebraic Thinking	Concept of Multiplication - Arrays Constructing Division Problems Solving Multiplication and Division Equations
3.5.C: describe a multiplication expression as a comparison such as $3 \times 24$ represents 3 times as much as 24;	Operations and Algebraic Thinking	Concept of Multiplication - Word Problems Multiplication as a Comparison - Equations Multiplication as a Comparison - Word Problems
3.5.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; and	Operations and Algebraic Thinking	Multiplication and Division Fact Families Division as an Unknown-Factor Problem
3.5.E: represent real-world relationships using number pairs in a table and verbal descriptions.	Operations and Algebraic Thinking	Input-Output Tables
<b>(6) 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:</b>		
3.6.A: classify and sort two- and three-dimensional solids, including cones, cylinders, spheres, triangular and rectangular prisms, and cubes, based on attributes using formal geometric language;	Geometry	Classifying Quadrilaterals I Classifying 3-Dimensional Figures
3.6.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;	Geometry	Classifying Quadrilaterals I
3.6.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;	Measurement and Data	Unit Squares Concept of Area Area of Rectangles
3.6.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; and	Measurement and Data	Recognizing Area as Additive Area of Basic Composite Figures

Texas Essential Knowledge and Skills	Imagine Math	
Grade 3	Unit	Lesson
3.6.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.	Measurement and Data	Area of Basic Composite Figures
<b>(7) 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:</b>		
3.7.A: represent fractions of halves, fourths, and eighths as distances from zero on a number line;	Number and Operations - Fractions	Unit Fractions on the Number Line
3.7.B: determine the perimeter of a polygon or a missing length when given perimeter and remaining side lengths in problems;	Measurement and Data	Perimeter
3.7.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;	Measurement and Data	Adding and Subtracting Time
3.7.D: determine when it is appropriate to use measurements of liquid volume (capacity) or weight; and	Measurement and Data	Capacity or Weight
3.7.E: determine liquid volume (capacity) or weight using appropriate units and tools.	Measurement and Data	Capacity or Weight
<b>(8) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:</b>		
3.8.A: summarize a data set with multiple categories using a frequency table, dot plot, pictograph, or bar graph with scaled intervals; and	Measurement and Data	Introduction to Data Displays
3.8.B: solve one- and two-step problems using categorical data represented with a frequency table, dot plot, pictograph, or bar graph with scaled intervals	Measurement and Data	Introduction to Data Displays

Texas Essential Knowledge and Skills	Imagine Math	
<i>Grade 3</i>	<i>Unit</i>	<i>Lesson</i>
<b>(9) 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:</b>		
3.9.A: explain the connection between human capital/labor and income;	Standard not addressed	Standard not addressed
3.9.B: describe the relationship between the availability or scarcity of resources and how that impacts cost;	Financial Literacy	Supply and Cost
3.9.C: identify the costs and benefits of planned and unplanned spending decisions;	Standard not addressed	Standard not addressed
3.9.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;	Financial Literacy	Credit Sense
3.9.E: list reasons to save and explain the benefit of a savings plan, including for college; and	Financial Literacy	Saving Money
3.9.F: identify decisions involving income, spending, saving, credit, and charitable giving	Financial Literacy	Money Decisions

Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
4.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
4.1.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;	Embedded throughout the program	Embedded throughout the program
4.1.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;	Embedded throughout the program	Embedded throughout the program
4.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
4.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
4.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
4.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Standard not addressed	Standard not addressed
<b>(2) Number 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:</b>		
4.2.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;	Number and Operations in Base Ten	Understanding Place Value Relationships Place Value Relationships Within Whole Numbers and Decimals

Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
4.2.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;	Number and Operations in Base Ten	Place Value Concepts Decimal Notation II Decimals to Hundredths Place Value Relationships Within Whole Numbers and Decimals
4.2.C: compare and order whole numbers to 1,000,000,000 and represent comparisons using the symbols $>$ , $<$ , or $=$ ;	Number and Operations in Base Ten	Using Place Value Concepts to Compare Whole Numbers
4.2.D: round whole numbers to a given place value through the hundred thousands place;	Number and Operations in Base Ten	Rounding Whole Numbers Using Rounding in Problem Solving
4.2.E: represent decimals, including tenths and hundredths, using concrete and visual models and money;	Number and Operations in Base Ten	Decimal Notation I Decimals to Hundredths
4.2.F: compare and order decimals using concrete and visual models to the hundredths;	Number and Operations in Base Ten	Comparing and Ordering Decimal Fractions Introduction to Comparing Decimals to Hundredths Comparing Decimals to Hundredths Recognizing Valid Decimal Comparisons
4.2.G: relate decimals to fractions that name tenths and hundredths; and	Number and Operations in Base Ten	Comparing Decimal Fractions Decimals to Hundredths
4.2.H: determine the corresponding decimal to the tenths or hundredths place of a specified point on a number line.	Number and Operations in Base Ten	Decimal Notation I
<b>(3) Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to:</b>		
4.3.A: represent a fraction $\frac{a}{b}$ as a sum of fractions $\frac{1}{b}$ , where $a$ and $b$ are whole numbers and $b > 0$ , including when $a > b$ ;	Number and Operations - Fractions	Generating Equivalent Fractions Understanding Fractions - Relationship Between Numerator and Denominator Decomposing Fractions and Mixed Numbers Writing Fractions as Mixed Numbers and Mixed Numbers as Fractions
4.3.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;	Number and Operations - Fractions	Decomposing Fractions and Mixed Numbers

Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
4.3.C: determine if two given fractions are equivalent using a variety of methods;	Number and Operations - Fractions	Modeling Equivalent Fractions Generating Equivalent Fractions Reducing Fractions Understanding Fractions with Denominators of 10 and 100
4.3.D: compare two fractions with different numerators and different denominators and represent the comparison using the symbols $>$ , $=$ , or $<$ ;	Number and Operations - Fractions	Comparing Fractions with Different Numerators and Different Denominators Recognizing Valid Fraction Comparisons II
4.3.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;	Number and Operations - Fractions	Adding and Subtracting Fractions with Like Denominators Adding and Subtracting Fractions with Like Denominators in Real-World Situations
4.3.F: evaluate the reasonableness of sums and differences of fractions using benchmark fractions 0, $\frac{1}{4}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , and 1, referring to the same whole; and	Number and Operations - Fractions	Adding and Subtracting Fractions with Like Denominators in Real-World Situations
4.3.G: represent fractions and decimals to the tenths or hundredths as distances from zero on a number line.	Number and Operations - Fractions Number and Operations in Base Ten	Understanding Fractions with Denominators of 10 and 100 Comparing Decimal Fractions Decimals to Hundredths
<b>(4) Number 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:</b>		
4.4.A: add and subtract whole numbers and decimals to the hundredths place using the standard algorithm;	Number and Operations in Base Ten	Adding Whole Numbers Adding and Subtracting with the Standard Algorithm
4.4.B: determine products of a number and 10 or 100 using properties of operations and place value understandings;	Number and Operations in Base Ten	Multiplying by Multiples of Ten
4.4.C: represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15;	Operations and Algebraic Thinking Number and Operations in Base Ten	Multiplying Whole Numbers Multiplying 2-Digit Numbers by 2-Digit Numbers

Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
4.4.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;	Number and Operations in Base Ten	Multiplying Whole Numbers - Standard Algorithm
4.4.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;	Operations and Algebraic Thinking	Solving Multiplication and Division Equations Multiplication and Division Word Problems - Visual Models Multiplication and Division Word Problems - Equations
	Number and Operations in Base Ten	Dividing Whole Numbers - One-Digit Divisors
4.4.F: use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor;	Number and Operations in Base Ten	Dividing Whole Numbers - One-Digit Divisors
4.4.G: round to the nearest 10, 100, or 1,000 or use compatible numbers to estimate solutions involving whole numbers; and	Operations and Algebraic Thinking	Estimating Sums and Differences - Application
4.4.H: solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders.	Operations and Algebraic Thinking	Multiplication and Division Word Problems - Solutions Interpreting Remainders
<b>(5) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:</b>		
4.5.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;	Operations and Algebraic Thinking	Solving Two-Step Word Problems Modeling and Solving Two-Step Word Problems
4.5.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;	Operations and Algebraic Thinking	Generating and Describing Number Patterns

Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
4.5.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 ( $l \times w$ ); and	Measurement and Data	Perimeter Area and Perimeter of Rectangles
4.5.D: solve problems related to perimeter and area of rectangles where dimensions are whole numbers.	Measurement and Data	Perimeter Area and Perimeter of Rectangles
<b>(6) 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:</b>		
4.6.A: identify points, lines, line segments, rays, angles, and perpendicular and parallel lines;	Geometry	Identifying and Classifying Lines, Rays, and Segments Classifying Quadrilaterals II
4.6.B: identify and draw one or more lines of symmetry, if they exist, for a two- dimensional figure;	Geometry	Symmetry
4.6.C: apply knowledge of right angles to identify acute, right, and obtuse triangles; and	Geometry	Classifying Triangles
4.6.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.	Geometry	Classifying Triangles Classifying Quadrilaterals II
<b>(7) 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:</b>		
4.7.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;	Measurement and Data	Angles 0 to 180
4.7.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;	Measurement and Data	Angles 0 to 180



Texas Essential Knowledge and Skills	Imagine Math	
Grade 4	Unit	Lesson
4.7.C: determine the approximate measures of angles in degrees to the nearest whole number using a protractor;	Measurement and Data	Angles 0 to 180
4.7.D: draw an angle with a given measure; and	Measurement and Data	Angles 0 to 180
4.7.E: determine the measure of an unknown angle formed by two non-overlapping adjacent angles given one or both angle measures.	Measurement and Data	Identifying and Comparing Angles Angles 0 to 180
<b>(8) 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:</b>		
4.8.A: identify relative sizes of measurement units within the customary and metric systems;	Measurement and Data	Units of Measure - Customary Units of Measure - Metric
4.8.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; and	Measurement and Data	Units of Measure - Customary Units of Measure - Metric
4.8.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.	Measurement and Data	Area and Perimeter of Rectangles
<b>(9) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:</b>		
4.9.A: represent data on a frequency table, dot plot, or stem-and-leaf plot marked with whole numbers and fractions; and	Measurement and Data	Line Plots
4.9.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.	Measurement and Data	Line Plots
<b>(10) 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:</b>		
4.10.A: distinguish between fixed and variable expenses;	Personal Financial Literacy	Expenses and Profit
4.10.B: calculate profit in a given situation;	Personal Financial Literacy	Expenses and Profit

Texas Essential Knowledge and Skills	Imagine Math	
<i>Grade 4</i>	<i>Unit</i>	<i>Lesson</i>
4.10.C: compare the advantages and disadvantages of various savings options;	Personal Financial Literacy	Saving Money
4.10.D: describe how to allocate a weekly allowance among spending; saving, including for college; and sharing; and	Personal Financial Literacy	Money Decisions
4.10.E: describe the basic purpose of financial institutions, including keeping money safe, borrowing money, and lending.	Standard not addressed	Standard not addressed

Texas Essential Knowledge and Skills	Imagine Math	
Grade 5	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
5.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
5.1.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;	Embedded throughout the program	Embedded throughout the program
5.1.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;	Embedded throughout the program	Embedded throughout the program
5.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
5.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
5.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
5.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program
<b>(2) Number 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:</b>		
5.2.A: represent the value of the digit in decimals through the thousandths using expanded notation and numerals;	Number and Operations in Base Ten	Decimals to Thousandths
5.2.B: compare and order two decimals to thousandths and represent comparisons using the symbols $>$ , $<$ , or $=$ ; and	Number and Operations in Base Ten	Comparing Decimals to Thousandths

Texas Essential Knowledge and Skills	Imagine Math	
Grade 5	Unit	Lesson
5.2.C: round decimals to tenths or hundredths.	Number and Operations in Base Ten	Rounding Decimals to the Nearest Tenth and Hundredth Reasoning About Rounding Decimals
<b>(3) Number 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:</b>		
5.3.A: estimate to determine solutions to mathematical and real-world problems involving addition, subtraction, multiplication, or division;	Number and Operations in Base Ten	Estimating Solutions to Multistep Word Problems
5.3.B: multiply with fluency a three-digit number by a two-digit number using the standard algorithm;	Number and Operations in Base Ten	Operations with Whole Numbers - Mixed Practice
5.3.C: solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm;	Number and Operations in Base Ten	Operations with Whole Numbers - Mixed Practice Dividing Whole Numbers - Two-Digit Divisors
5.3.D: represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models;	Number and Operations in Base Ten	Multiplying Decimals to Hundredths
5.3.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;	Number and Operations in Base Ten	Multiplying Decimals to Hundredths
5.3.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;	Number and Operations in Base Ten	Dividing Decimals to Hundredths
5.3.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;	Number and Operations in Base Ten	Dividing Decimals to Hundredths

Texas Essential Knowledge and Skills	Imagine Math	
Grade 5	Unit	Lesson
5.3.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;	Number and Operations - Fractions	Adding Fractions with Denominators of 10 or 100 Adding Fractions Adding Fractions - Estimation Strategies Subtracting Fractions Subtracting Fractions - Estimation Strategies Adding and Subtracting Fractions Adding and Subtracting Fractions - Multistep Word Problems
5.3.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;	Number and Operations - Fractions	Multiplying Unit Fractions by Whole Numbers Multiplying Fractions by Whole Numbers Solving Word Problems with Multiplication of Fractions by Whole Numbers
5.3.J: represent division of a unit fraction by a whole number and the division of a whole number by a unit fraction such as $1/3 \div 7$ and $7 \div 1/3$ using objects and pictorial models, including area models;	Number and Operations - Fractions	Dividing Unit Fractions by Whole Numbers Dividing Whole Numbers by Unit Fractions
5.3.K: add and subtract positive rational numbers fluently; and	Number and Operations - Fractions	Word Problems with Fractions and Mixed Numbers - Visual Models Word Problems with Fractions and Mixed Numbers - Estimation Adding and Subtracting Mixed Numbers with Like Denominators - Conceptual Strategies Adding and Subtracting Mixed Numbers with Like Denominators
	Number and Operations in Base Ten	Operations with Whole Numbers - Mixed Practice Adding and Subtracting Decimals Adding and Subtracting Decimals in Real-World Situations
5.3.L: divide whole numbers by unit fractions and unit fractions by whole numbers.	Number and Operations - Fractions	Dividing Unit Fractions by Whole Numbers Dividing Whole Numbers by Unit Fractions

Texas Essential Knowledge and Skills	Imagine Math	
Grade 5	Unit	Lesson
<b>(4) Algebraic reasoning. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:</b>		
5.4.A: identify prime and composite numbers;	Operations and Algebraic Thinking	Relating Factors and Multiples I Factors Relating Factors and Multiples II
5.4.B: represent and solve multi-step problems involving the four operations with whole numbers using equations with a letter standing for the unknown quantity;	Number and Operations in Base Ten Operations and Algebraic Thinking	Operations with Whole Numbers - Mixed Practice Writing Simple Expressions Writing and Interpreting Simple Expressions
5.4.C: generate a numerical pattern when given a rule in the form $y = ax$ or $y = x + a$ and graph;	Operations and Algebraic Thinking	Generating and Describing Number Patterns
5.4.D: recognize the difference between additive and multiplicative numerical patterns given in a table or graph;	Operations and Algebraic Thinking	Additive and Multiplicative Patterns
5.4.E: describe the meaning of parentheses and brackets in a numeric expression;	Expressions and Equations	Evaluating Simple Expressions
5.4.F: simplify numerical expressions that do not involve exponents, including up to two levels of grouping;	Operations and Algebraic Thinking Expressions and Equations	Evaluating Simple Expressions Writing and Interpreting Simple Expressions
5.4.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 $V = Bh$ ); and	Measurement and Data	Volume of Rectangular Prisms II
5.4.H: represent and solve problems related to perimeter and/or area and related to volume.	Measurement and Data	Area and Perimeter of Rectangles Volume of Rectangular Prisms I
<b>(5) Geometry and measurement. The student applies mathematical process standards to classify two-dimensional figures by attributes and properties. The student is expected to:</b>		
5.5: classify two-dimensional figures in a hierarchy of sets and subsets using graphic organizers based on their attributes and properties.	Geometry	Classifying Triangles Classifying 2-Dimensional Figures

Texas Essential Knowledge and Skills		Imagine Math
Grade 5	Unit	Lesson
<b>(6) Geometry and measurement. The student applies mathematical process standards to understand, recognize, and quantify volume. The student is expected to:</b>		
5.6.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; and	Measurement and Data	Volume of Rectangular Prisms I
5.6.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.	Measurement and Data	Volume of Rectangular Prisms I
<b>(7) 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:</b>		
5.7: solve problems by calculating conversions within a measurement system, customary or metric.	Measurement and Data	Units of Measure - Customary Units of Measure - Metric
<b>(8) Geometry and measurement. The student applies mathematical process standards to identify locations on a coordinate plane. The student is expected to:</b>		
5.8.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;	Geometry	Introduction to the Coordinate Plane
5.8.B: describe the process for graphing ordered pairs of numbers in the first quadrant of the coordinate plane; and	Geometry	Introduction to the Coordinate Plane Representing Real-World Quantities in the First Quadrant
5.8.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.	Geometry	Introduction to the Coordinate Plane Representing Real-World Quantities in the First Quadrant

Texas Essential Knowledge and Skills	Imagine Math	
Grade 5	Unit	Lesson
<b>(9) Data analysis. The student applies mathematical process standards to solve problems by collecting, organizing, displaying, and interpreting data. The student is expected to:</b>		
5.9.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;	Statistics and Probability	Bar Graphs and Histograms
5.9.B: represent discrete paired data on a scatterplot; and	Geometry	Introduction to Scatter Plots
5.9.C: solve one- and two-step problems using data from a frequency table, dot plot, bar graph, stem-and-leaf plot, or scatterplot.	Geometry	Introduction to Scatter Plots
	Statistics and Probability	Bar Graphs and Histograms
<b>(10) 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:</b>		
5.10.A: define income tax, payroll tax, sales tax, and property tax;	Standard not addressed	Standard not addressed
5.10.B: explain the difference between gross income and net income;	Standard not addressed	Standard not addressed
5.10.C: identify the advantages and disadvantages of different methods of payment, including check, credit card, debit card, and electronic payments;	Personal Financial Literacy	Methods of Payment
5.10.D: develop a system for keeping and using financial records;	Personal Financial Literacy	Balancing a Budget
5.10.E: describe actions that might be taken to balance a budget when expenses exceed income; and	Personal Financial Literacy	Balancing a Budget
5.10.F: balance a simple budget.	Personal Financial Literacy	Balancing a Budget



Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
6.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
6.1.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;	Embedded throughout the program	Embedded throughout the program
6.1.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;	Embedded throughout the program	Embedded throughout the program
6.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
6.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
6.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
6.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program
<b>(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:</b>		
6.2.A: classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers;	The Number System	Classifying Rational Numbers

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.2.B: identify a number, its opposite, and its absolute value;	The Number System	Integer Concepts Integer Concepts with a Number Line Absolute Value I Absolute Value II
6.2.C: locate, compare, and order integers and rational numbers using a number line;	The Number System	Integer Concepts Integer Concepts with a Number Line Classifying Rational Numbers Comparing Rational Numbers I Comparing Rational Numbers II
6.2.D: order a set of rational numbers arising from mathematical and real-world contexts; and	The Number System	Classifying Rational Numbers Comparing Rational Numbers I Comparing Rational Numbers II
6.2.E: extend representations for division to include fraction notation such as $a/b$ represents the same number as $a \div b$ where $b \neq 0$ .	Number and Operations - Fractions Expressions and Equations	Understanding Fractions as Division  Fraction, Decimal, and Percent Equivalents
<b>(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:</b>		
6.3.A: recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values;	The Number System	Using the Relationship Between Multiplication and Division to Divide Fractions
6.3.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;	Number and Operations - Fractions	Multiplying Unit Fractions by Whole Numbers Multiplying Fractions by Whole Numbers Solving Word Problems with Multiplication of Fractions by Whole Numbers Understanding Products with Fractions
6.3.C: represent integer operations with concrete models and connect the actions with the models to standardized algorithms;	The Number System	Adding and Subtracting Rational Numbers I Adding and Subtracting Rational Numbers II Multiplying and Dividing Rational Numbers
6.3.D: add, subtract, multiply, and divide integers fluently; and	The Number System	Adding and Subtracting Rational Numbers I Adding and Subtracting Rational Numbers II Multiplying and Dividing Rational Numbers

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.3.E: multiply and divide positive rational numbers fluently.	Number and Operations in Base Ten  The Number System	Dividing Whole Numbers - Standard Algorithm Multiplying with Fractions and Mixed Numbers Multiplying by Powers of Ten Multiplying and Dividing by Powers of Ten  Using the Relationship Between Multiplication and Division to Divide Fractions Dividing Fractions by Fractions Using Division of Fractions to Represent and Solve Problems
<b>(4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:</b>		
6.4.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;	Ratios and Proportional Relationships	Proportion Concepts
6.4.B: apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates;	Ratios and Proportional Relationships	Using Ratios to Solve Problems
6.4.C: give examples of ratios as multiplicative comparisons of two quantities describing the same attribute;	Ratios and Proportional Relationships	Concept of Ratios and Rates
6.4.D: give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients;	Ratios and Proportional Relationships	Concept of Ratios and Rates
6.4.E: represent ratios and percents with concrete models, fractions, and decimals;	Ratios and Proportional Relationships  Expressions and Equations	Identifying Ratios Ratios Identifying Unit Rates Percent Concepts Reasoning with Percents  Fraction, Decimal, and Percent Equivalents

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.4.F: represent benchmark fractions and percents such as 1%, 10%, 25%, 33 $\frac{1}{3}$ %, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers;	Ratios and Proportional Relationships	Percent Concepts Reasoning with Percents
	Expressions and Equations	Fraction, Decimal, and Percent Equivalents
6.4.G: generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money; and	Number and Operations in Base Ten	Fraction and Decimal Equivalents Comparing Fractions and Decimals Using Division to Write Fractions as Decimals
	Expressions and Equations	Fraction, Decimal, and Percent Equivalents
6.4.H: convert units within a measurement system, including the use of proportions and unit rates.	Ratios and Proportional Relationships	Converting Units of Measure I Converting Units of Measure II
<b>(5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to:</b>		
6.5.A: represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions;	Ratios and Proportional Relationships	Identifying Ratios Ratios Identifying Unit Rates Proportion Concepts
6.5.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; and	Ratios and Proportional Relationships	Percent Concepts Reasoning with Percents
6.5.C: use equivalent fractions, decimals, and percents to show equal parts of the same whole.	Expressions and Equations	Fraction, Decimal, and Percent Equivalents
<b>(6) Expressions, equations, and relationships. The student applies mathematical process standards to use multiple representations to describe algebraic relationships. The student is expected to:</b>		
6.6.A: identify independent and dependent quantities from tables and graphs;	Functions	Independent and Dependent Quantities
6.6.B: write an equation that represents the relationship between independent and dependent quantities from a table; and	Expressions and Equations	Independent and Dependent Quantities

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.6.C: represent a given situation using verbal descriptions, tables, graphs, and equations in the form $y = kx$ or $y = x + b$ .	Expressions and Equations Functions	Introduction to Solving Word Problems with Algebra
<b>(7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:</b>		
6.7.A: generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization;	Number and Operations in Base Ten	Multiplying by Powers of Ten Multiplying and Dividing by Powers of Ten
	The Number System	Greatest Common Factor Greatest Common Factor - Applications Least Common Multiple
	Equations and Expressions	Evaluating Expressions with Two Operations Understanding Exponents Evaluating Expressions and Equations with Exponents
6.7.B: distinguish between expressions and equations verbally, numerically, and algebraically;	Expressions and Equations	Introduction to the Language of Algebra
6.7.C: determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations; and	Expressions and Equations	Identifying and Generating Equivalent Expressions
6.7.D: generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties.	Expressions and Equations	Identifying and Generating Equivalent Expressions Evaluating Expressions with the Distributive Property Using the Distributive Property to Represent Real-World Situations
<b>(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:</b>		
6.8.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;	Geometry	Using Line Segments and Angles to Make Triangles

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.8.B: model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes;	Geometry	Area of Parallelograms Area of Triangles Area of Trapezoids and Composite Figures
6.8.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; and	Measurement and Data Geometry	Volume of Rectangular Prisms II  Area of Parallelograms Area of Triangles Area of Trapezoids and Composite Figures
6.8.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.	Measurement and Data Geometry	Volume of Rectangular Prisms II  Area of Parallelograms Area of Triangles Area of Trapezoids and Composite Figures
<b>(9) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to:</b>		
6.9.A: write one-variable, one-step equations and inequalities to represent constraints or conditions within problems;	Expressions and Equations	Writing and Solving One-Step Equations Introduction to the Language of Algebra Introduction to Solving Word Problems with Algebra Concept of Inequalities I
6.9.B: represent solutions for one-variable, one-step equations and inequalities on number lines; and	Expressions and Equations	Concept of Inequalities I
6.9.C: write corresponding real-world problems given one-variable, one-step equations or inequalities.	Expressions and Equations	Concept of Inequalities I
<b>(10) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to:</b>		
6.10.A: model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts; and	Expressions and Equations	Writing and Solving One-Step Equations Concept of Inequalities I

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
6.10.B: determine if the given value(s) make(s) one-variable, one-step equations or inequalities true.	Expressions and Equations	Reasoning About One-Step Equations
<b>(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:</b>		
6.11: graph points in all four quadrants using ordered pairs of rational numbers.	The Number System	Integers in the Coordinate Plane I Integers in the Coordinate Plane II Rational Numbers in the Coordinate Plane I Rational Numbers in the Coordinate Plane II
<b>(12) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to:</b>		
6.12.A: represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots;	Statistics and Probability	Line Plots Bar Graphs and Histograms Stem-and-Leaf Plots Box Plots
6.12.B: use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution;	Statistics and Probability	Summarizing Data
6.12.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; and	Statistics and Probability	Measures of Spread - Range Measures of Center - Median Measures of Center - Mean Quartiles
6.12.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.	Statistics and Probability	Summarizing Data

Texas Essential Knowledge and Skills	Imagine Math	
Grade 6	Unit	Lesson
<b>(13) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to:</b>		
6.13.A: interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots; and	Statistics and Probability	Line Plots Bar Graphs and Histograms Stem-and-Leaf Plots Box Plots
6.13.B: distinguish between situations that yield data with and without variability.	Statistics and Probability	Data Analysis
<b>(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:</b>		
6.14.A: compare the features and costs of a checking account and a debit card offered by different local financial institutions;	Standard not addressed	Standard not addressed
6.14.B: distinguish between debit cards and credit cards;	Personal Financial Literacy	Methods of Payment
6.14.C: balance a check register that includes deposits, withdrawals, and transfers;	Personal Financial Literacy	Balancing a Budget
6.14.D: explain why it is important to establish a positive credit history;	Personal Financial Literacy	Credit Reports
6.14.E: describe the information in a credit report and how long it is retained;	Personal Financial Literacy	Credit Reports
6.14.F: describe the value of credit reports to borrowers and to lenders;	Personal Financial Literacy	Credit Reports
6.14.G: explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study; and	Personal Financial Literacy	Paying for College I
6.14.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.	Standard not addressed	Standard not addressed



Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
7.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
7.1.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;	Embedded throughout the program	Embedded throughout the program
7.1.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;	Embedded throughout the program	Embedded throughout the program
7.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
7.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
7.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
7.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program
<b>(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:</b>		
7.2: extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers.	The Number System	Classifying Rational Numbers

Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
<b>(3) Number and operations. The student applies mathematical process standards to add, subtract, multiply, and divide while solving problems and justifying solutions. The student is expected to:</b>		
7.3.A: add, subtract, multiply, and divide rational numbers fluently; and	Number and Operations- Fractions	Understanding Products with Fractions Multiplying Fractions by Whole Numbers to Solve Multistep Problems
	The Number System	Operations with Fractions - Mixed Practice Writing and Interpreting Expressions with Rational Numbers Operations with Rational Numbers I Operations with Rational Numbers II
	Number and Operations in Base Ten	Using Reasoning and Estimation to Calculate with Decimals Calculating with Decimals
7.3.B: apply and extend previous understandings of operations to solve problems using addition, subtraction, multiplication, and division of rational numbers.	The Number System	Operations with Fractions - Mixed Practice Writing and Interpreting Expressions with Rational Numbers Operations with Rational Numbers I Operations with Rational Numbers II
	Number and Operations in Base Ten	Using Reasoning and Estimation to Calculate with Decimals Calculating with Decimals
	Number and Operations- Fractions	Understanding and Multiplying with Negative Mixed Numbers
<b>(4) Proportionality. The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:</b>		
7.4.A: represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$ ;	Ratios and Proportional Relationships	Solving Problems with Unit Rates Distance, Rate, and Time Proportion Concepts Proportional Relationships in Tables and Equations Using Proportions to Solve Problems

Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
7.4.B: calculate unit rates from rates in mathematical and real-world problems;	Ratios and Proportional Relationships	Solving Problems with Unit Rates
7.4.C: determine the constant of proportionality ( $k = y/x$ ) within mathematical and real-world problems;	Ratios and Proportional Relationships	Using Proportions to Solve Problems
7.4.D: solve problems involving ratios, rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems; and	Ratios and Proportional Relationships	Calculations with Percent Solving Problems with Unit Rates Distance, Rate, and Time Percent and Percent Change Percent and Percent Error
7.4.E: convert between measurement systems, including the use of proportions and the use of unit rates.	Ratios and Proportional Relationships	Converting Units of Measure II
<b>(5) Proportionality. The student applies mathematical process standards to use geometry to describe or solve problems involving proportional relationships. The student is expected to:</b>		
7.5.A: generalize the critical attributes of similarity, including ratios within and between similar shapes;	Ratios and Proportional Relationships	Introduction to Similar Figures Using Similar Figures to Solve Problems Similarity
7.5.B: describe $\pi$ as the ratio of the circumference of a circle to its diameter; and	Geometry	Circumference
7.5.C: solve mathematical and real-world problems involving similar shape and scale drawings.	Ratios and Proportional Relationships	Proportions in Scale Drawings Using Similar Figures to Solve Problems
<b>(6) 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:</b>		
7.6.A: represent sample spaces for simple and compound events using lists and tree diagrams;	Statistics and Probability	Probability and Sample Spaces
7.6.B: select and use different simulations to represent simple and compound events with and without technology;	Statistics and Probability	Simulations of Simple and Compound Events
7.6.C: make predictions and determine solutions using experimental data for simple and compound events;	Statistics and Probability	Making Predictions

Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
7.6.D: make predictions and determine solutions using theoretical probability for simple and compound events;	Statistics and Probability	Making Predictions
7.6.E: find the probabilities of a simple event and its complement and describe the relationship between the two;	Statistics and Probability	Probability and Sample Spaces
7.6.F: use data from a random sample to make inferences about a population;	Statistics and Probability	Sampling
7.6.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;	Statistics and Probability	Line Plots Bar Graphs and Histograms Circle Graphs
7.6.H: solve problems using qualitative and quantitative predictions and comparisons from simple experiments; and	Statistics and Probability	Making Predictions
7.6.I: determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces.	Statistics and Probability	Simple Probability Compound Probability
<b>(7) Expressions, equations, and relationships. The student applies mathematical process standards to represent linear relationships using multiple representations. The student is expected to:</b>		
7.7: represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$ .	Functions	Solving Equations with the Distributive Property in Context Solving Word Problems with Algebra
<b>(8) Expressions, equations, and relationships. The student applies mathematical process standards to develop geometric relationships with volume. The student is expected to:</b>		
7.8.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;	Geometry	Volume of Pyramids and Cones
7.8.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; and	Geometry	Volume of Pyramids and Cones

Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
7.8.C: use models to determine the approximate formulas for the circumference and area of a circle and connect the models to the actual formulas.	Geometry	Circumference Area of Circles
<b>(9) Expressions, equations, and relationships. The student applies mathematical process standards to solve geometric problems. The student is expected to:</b>		
7.9.A: solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids;	Geometry	Surface Area and Volume of Rectangular Prisms Volume of Pyramids and Cones
7.9.B: determine the circumference and area of circles;	Geometry	Circumference Area of Circles
7.9.C: determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles; and	Geometry	Area of Complex Composite Figures
7.9.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.	Geometry	Surface Area and Volume of Rectangular Prisms Surface Area of Pyramids
<b>(10) 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:</b>		
7.10.A: write one-variable, two-step equations and inequalities to represent constraints or conditions within problems;	Expressions and Equations	Combining Like Terms Introduction to Solving Word Problems with Algebra Solving and Modeling Two-Step Problems Solving Equations with the Distributive Property Solving Equations with the Distributive Property in Context Solving Word Problems with Algebra

Texas Essential Knowledge and Skills	Imagine Math	
Grade 7	Unit	Lesson
7.10.B: represent solutions for one-variable, two-step equations and inequalities on number lines; and	Expressions and Equations	Concept of Inequalities I
7.10.C: write a corresponding real-world problem given a one-variable, two-step equation or inequality.	Standard not addressed	Standard not addressed
<b>(11) Expressions, equations, and relationships. The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to:</b>		
7.11.A: model and solve one-variable, two-step equations and inequalities;	Expressions and Equations	Solving and Modeling Two-Step Problems Solving Equations with the Distributive Property Solving Equations with the Distributive Property in Context
7.11.B: determine if the given value(s) make(s) one-variable, two-step equations and inequalities true; and	Expressions and Equations	Concept of Inequalities I
7.11.C: write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships.	Geometry	Angle Pairs Angles in a Polygon
<b>(12) Measurement and data. The student applies mathematical process standards to use statistical representations to analyze data. The student is expected to:</b>		
7.12.A: compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads;	Statistics and Probability	Comparing Data
7.12.B: use data from a random sample to make inferences about a population; and	Statistics and Probability	Sampling
7.12.C: compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations.	Statistics and Probability	Sampling
<b>(13) 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:</b>		
7.13.A: calculate the sales tax for a given purchase and calculate income tax for earned wages;	Ratios and Proportional Relationships	Calculations with Percent

Texas Essential Knowledge and Skills	Imagine Math	
<i>Grade 7</i>	<i>Unit</i>	<i>Lesson</i>
7.13.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;	Personal Financial Literacy	Creating a Budget
7.13.C: create and organize a financial assets and liabilities record and construct a net worth statement;	Standard not addressed	Standard not addressed
7.13.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;	Personal Financial Literacy	Creating a Budget
7.13.E: calculate and compare simple interest and compound interest earnings; and	Ratios and Proportional Relationships	Simple Interest
7.13.F: analyze and compare monetary incentives, including sales, rebates, and coupons.	Standard not addressed	Standard not addressed

Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
8.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
8.1.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;	Embedded throughout the program	Embedded throughout the program
8.1.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;	Embedded throughout the program	Embedded throughout the program
8.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
8.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
8.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
8.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program
<b>(2) Number and operations. The student applies mathematical process standards to represent and use real numbers in a variety of forms. The student is expected to:</b>		
8.2.A: extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers;	The Number System	Classifying and Ordering Real Numbers



Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
8.2.B: approximate the value of an irrational number, including $\pi$ and square roots of numbers less than 225, and locate that rational number approximation on a number line;	Expressions and Equations	Understanding Square and Cube Roots Approximating Values of irrational Numbers Understanding Square and Cube Roots
8.2.C: convert between standard decimal notation and scientific notation; and	Expressions and Equations	Interpreting Numbers Written in Scientific Notation
8.2.D: order a set of real numbers arising from mathematical and real-world contexts.	The Number System	Classifying and Ordering Real Numbers
<b>(3) Proportionality. The student applies mathematical process standards to use proportional relationships to describe dilations. The student is expected to:</b>		
8.3.A: generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation;	Ratios and Proportional Relationships	Similarity
	Geometry	Dilations
8.3.B: compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane; and	Geometry	Dilations
8.3.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.	Geometry	Dilations
<b>(4) Proportionality. The student applies mathematical process standards to explain proportional and non-proportional relationships involving slope. The student is expected to:</b>		
8.4.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;	Expressions and Equations	Slope
8.4.B: graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship; and	Ratios and Proportional Relationships	Interpreting Unit Rates on Graphs Interpreting Points on Graphs of Proportional Relationships Interpreting Slope

Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
8.4.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.	Functions	Slope-Intercept Form
<b>(5) 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:</b>		
8.5.A: represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$ ;	Expressions and Equations	Interpreting Slope
	Functions	Slope-Intercept Form
	Building Functions	Direct Variation
8.5.B: represent linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$ , where $b \neq 0$ ;	Functions	Slope-Intercept Form
8.5.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;	Statistics and Probability	Comparing Linear and Nonlinear Data
8.5.D: use a trend line that approximates the linear relationship between bivariate sets of data to make predictions;	Statistics and Probability	Comparing Linear and Nonlinear Data
8.5.E: solve problems involving direct variation;	Building Functions	Direct Variation
8.5.F: distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$ , where $b \neq 0$ ;	Building Functions	Direct Variation
8.5.G: identify functions using sets of ordered pairs, tables, mappings, and graphs;	Interpreting Functions	Function Notation II
8.5.H: identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems; and	Building Functions	Direct Variation
8.5.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.	Functions	Slope-Intercept Form

Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
<b>(6) 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:</b>		
8.6.A: describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height;	Geometry	Volume of Cylinders
8.6.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; and	Geometry	Volume of Cylinders Volume of Pyramids and Cones
8.6.C: use models and diagrams to explain the Pythagorean theorem.	Geometry	Understanding the Pythagorean Theorem Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs
<b>(7) Expressions, equations, and relationships. The student applies mathematical process standards to use geometry to solve problems. The student is expected to:</b>		
8.7.A: solve problems involving the volume of cylinders, cones, and spheres;	Geometry	Volume of Cylinders Volume of Pyramids and Cones Volume of Spheres Volume of Composite Solids
8.7.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;	Geometry	Surface Area and Volume of Rectangular Prisms Surface Area of Cylinders
8.7.C: use the Pythagorean Theorem and its converse to solve problems; and	Geometry	Pythagorean Theorem - Hypotenuse Pythagorean Theorem - Legs Pythagorean Theorem - Mixed Problems Pythagorean Theorem - Distance Formula
8.7.D: determine the distance between two points on a coordinate plane using the Pythagorean Theorem.	Geometry	Pythagorean Theorem - Distance Formula

Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
<b>(8) 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:</b>		
8.8.A: write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants;	Expressions and Equations	Solving Equations with the Variable on Both Sides
8.8.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;	Expressions and Equations	Solving Equations with the Variable on Both Sides
8.8.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; and	Expressions and Equations	Solving Equations with the Variable on Both Sides Analyzing Solution Sets to Linear Equations with the Variable on Both Sides
8.8.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.	Geometry	Parallel Lines and Transversals
<b>(9) 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:</b>		
8.9: 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.	Expressions and Equations	Solving a System of Linear Equations Graphically
<b>(10) Two-dimensional shapes. The student applies mathematical process standards to develop transformational geometry concepts. The student is expected to:</b>		
8.10.A: generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane;	Geometry	"Translations Reflections Rotations"
8.10.B: differentiate between transformations that preserve congruence and those that do not;	Geometry	Congruence

Texas Essential Knowledge and Skills	Imagine Math	
Grade 8	Unit	Lesson
8.10.C: explain the effect of translations, reflections over the x- or y-axis, and rotations limited to $90^\circ$ , $180^\circ$ , $270^\circ$ , and $360^\circ$ as applied to two-dimensional shapes on a coordinate plane using an algebraic representation; and	Geometry	Composition of Transformations
8.10.D: model the effect on linear and area measurements of dilated two-dimensional shapes.	Geometry	Dilations
<b>(11) Measurement and data. The student applies mathematical process standards to use statistical procedures to describe data. The student is expected to:</b>		
8.11.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;	Statistics and Probability	Comparing Linear and Nonlinear Functions
8.11.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; and	Statistics and Probability	Deviation from the Mean
8.11.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.	Statistics and Probability	Sampling
<b>(12) 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:</b>		
8.12.A: solve real-world problems comparing how interest rate and loan length affect the cost of credit;	Ratios and Proportional Relationships	Simple Interest
	Financial Literacy	Cost of Loans
8.12.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;	Financial Literacy	Cost of Loans
8.12.C: explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time;	Standard not addressed	Standard not addressed

Texas Essential Knowledge and Skills	Imagine Math	
<i>Grade 8</i>	<i>Unit</i>	<i>Lesson</i>
8.12.D: calculate and compare simple interest and compound interest earnings;	Ratios and Proportional Relationships	Simple Interest
8.12.E: identify and explain the advantages and disadvantages of different payment methods;	Financial Literacy	Methods of Payment
8.12.F: analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility; and	Standard not addressed	Standard not addressed
8.12.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.	Personal Financial Literacy	Paying for College II

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
AI.1.A: apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
AI.1.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;	Embedded throughout the program	Embedded throughout the program
AI.1.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;	Embedded throughout the program	Embedded throughout the program
AI.1.D: communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
AI.1.E: create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
AI.1.F: analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
AI.1.G: display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
(2) Linear functions, equations, and inequalities. The student applies the mathematical process standards when using properties of linear functions to write and represent in multiple ways, with and without technology, linear equations, inequalities, and systems of equations. The student is expected to:		
AI.2.A: determine the domain and range of a linear function in mathematical problems; determine reasonable domain and range values for real-world situations, both continuous and discrete; and represent domain and range using inequalities;	Interpreting Functions	Understanding the Domain of a Function
AI.2.B: write linear equations in two variables in various forms, including $y = mx + b$ , $Ax + By = C$ , and $y - y_1 = m(x - x_1)$ , given one point and the slope and given two points;	Functions	Slope-Intercept Form Point-Slope Form
AI.2.C: write linear equations in two variables given a table of values, a graph, and a verbal description;	Creating Equations	Writing and Graphing Linear Equations in Two or More Variables
	Building Functions	Writing Linear and Exponential Functions from a Context
	Linear, Quadratic, and Exponential Models	Writing Linear and Exponential Functions Based on Different Representations
AI.2.D: write and solve equations involving direct variation;	Building Functions	Direct Variation
AI.2.E: write the equation of a line that contains a given point and is parallel to a given line;	Creating Equations	Equations of Parallel and Perpendicular Lines
AI.2.F: write the equation of a line that contains a given point and is perpendicular to a given line;	Creating Equations	Equations of Parallel and Perpendicular Lines
AI.2.G: write an equation of a line that is parallel or perpendicular to the X or Y axis and determine whether the slope of the line is zero or undefined;	Creating Equations	Equations of Parallel and Perpendicular Lines
AI.2.H: write linear inequalities in two variables given a table of values, a graph, and a verbal description; and	Reasoning with Equations and Inequalities	Graphing Linear Inequalities and Systems of Linear Inequalities in Real-World Situations
AI.2.I: write systems of two linear equations given a table of values, a graph, and a verbal description.	Reasoning with Equations and Inequalities	Solving Systems of Linear Equations



Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
<b>(3) Linear functions, equations, and inequalities. The student applies the mathematical process standards when using graphs of linear functions, key features, and related transformations to represent in multiple ways and solve, with and without technology, equations, inequalities, and systems of equations. The student is expected to:</b>		
AI.3.A: determine the slope of a line given a table of values, a graph, two points on the line, and an equation written in various forms, including $y = mx + b$ , $Ax + By = C$ , and $y - y_1 = m(x - x_1)$ ;	Expressions and Equations  Functions  Interpreting Functions	Interpreting Slope Slope  Slope-Intercept Form Point-Slope Form  Rate of Change for Linear and Exponential Functions
AI.3.B: calculate the rate of change of a linear function represented tabularly, graphically, or algebraically in context of mathematical and real-world problems;	Expressions and Equations  Functions	Interpreting Slope Slope  Slope-Intercept Form Point-Slope Form
AI.3.C: graph linear functions on the coordinate plane and identify key features, including x-intercept, y-intercept, zeros, and slope, in mathematical and real-world problems;	Interpreting Functions	Sketching Graphs of Linear and Exponential Functions from a Context
AI.3.D: graph the solution set of linear inequalities in two variables on the coordinate plane;	Reasoning with Equations and Inequalities	Graphing Linear Inequalities and Systems of Linear Inequalities in Real-World Situations
AI.3.E: determine the effects on the graph of the parent function $f(x) = x$ when $f(x)$ is replaced by $af(x)$ , $f(x) + d$ , $f(x - c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$ ;	Building Functions	Transformations of Graphs of Linear Functions
AI.3.F: graph systems of two linear equations in two variables on the coordinate plane and determine the solutions if they exist;	Reasoning with Equations and Inequalities	Solving a System of Linear Equations Graphically
AI.3.G: estimate graphically the solutions to systems of two linear equations with two variables in real-world problems; and	Expressions and Equations	Solving a System of Linear Equations Graphically
AI.3.H: graph the solution set of systems of two linear inequalities in two variables on the coordinate plane.	Reasoning with Equations and Inequalities	Graphing Linear Inequalities and Systems of Linear Inequalities in Real-World Situations

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
Algebra I	Unit	Lesson
(4) Linear functions, equations, and inequalities. The student applies the mathematical process standards to formulate statistical relationships and evaluate their reasonableness based on real-world data. The student is expected to:		
AI.4.A: calculate, using technology, the correlation coefficient between two quantitative variables and interpret this quantity as a measure of the strength of the linear association;	Standard not addressed	Standard not addressed
AI.4.B: compare and contrast association and causation in real-world problems; and	Interpreting Categorical and Quantitative Data	Correlation
AI.4.C: write, with and without technology, linear functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.	Interpreting Categorical and Quantitative Data	Fitting Functions to Data
(5) Linear functions, equations, and inequalities. The student applies the mathematical process standards to solve, with and without technology, linear equations and evaluate the reasonableness of their solutions. The student is expected to:		
AI.5.A: solve linear equations in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides;	Expressions and Equations	Solving Equations with the Distributive Property Solving Equations with the Distributive Property in Context Solving Equations with the Variable on Both Sides
	Creating Equations	Writing and Solving Linear Equations in One Variable
AI.5.B: solve linear inequalities in one variable, including those for which the application of the distributive property is necessary and for which variables are included on both sides; and	Reasoning with Equations and Inequalities	Solving Linear Inequalities in One Variable
AI.5.C: solve systems of two linear equations with two variables for mathematical and real-world problems.	Reasoning with Equations and Inequalities	Solving Systems of Linear Equations
(6) Quadratic functions and equations. The student applies the mathematical process standards when using properties of quadratic functions to write and represent in multiple ways, with and without technology, quadratic equations. The student is expected to:		
AI.6.A: determine the domain and range of quadratic functions and represent the domain and range using inequalities;	Interpreting Functions	Sketching Graphs of Quadratic Functions in Context Sketching and Transforming Graphs of Quadratic Functions from Symbolic Representations

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
Algebra I	Unit	Lesson
AI.6.B: write equations of quadratic functions given the vertex and another point on the graph, write the equation in vertex form ( $f(x) = a(x - h)^2 + k$ ), and rewrite the equation from vertex form to standard form ( $f(x) = ax^2 + bx + c$ ); and	Building Functions Interpreting Functions	Writing Quadratic Functions from a Context Rewriting Quadratics to Reveal Their Structure
AI.6.C: write quadratic functions when given real solutions and graphs of their related equations.	Building Functions	Writing Quadratic Functions From Their Graphs
(7) Quadratic functions and equations. The student applies the mathematical process standards when using graphs of quadratic functions and their related transformations to represent in multiple ways and determine, with and without technology, the solutions to equations. The student is expected to:		
AI.7.A: graph quadratic functions on the coordinate plane and use the graph to identify key attributes, if possible, including x-intercept, y-intercept, zeros, maximum value, minimum values, vertex, and the equation of the axis of symmetry;	Interpreting Functions	Sketching Graphs of Quadratic Functions in Context Sketching and Transforming Graphs of Quadratic Functions from Symbolic Representations
AI.7.B: describe the relationship between the linear factors of quadratic expressions and the zeros of their associated quadratic functions; and	Seeing Structure in Expressions	Factoring Quadratic Expressions
AI.7.C: determine the effects on the graph of the parent function $f(x) = x^2$ when $f(x)$ is replaced by $af(x)$ , $f(x) + d$ , $f(x - c)$ , $f(bx)$ for specific values of $a$ , $b$ , $c$ , and $d$ .	Interpreting Functions	Sketching and Transforming Graphs of Quadratic Functions from Symbolic Representations
(8) Quadratic functions and equations. The student applies the mathematical process standards to solve, with and without technology, quadratic equations and evaluate the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. The student is expected to:		
AI.8.A: solve quadratic equations having real solutions by factoring, taking square roots, completing the square, and applying the quadratic formula; and	Seeing Structure in Expressions	Factoring Quadratic Expressions
	Reasoning with Equations and Inequalities	Solving Quadratics - Completing the Square Problem Solving with Quadratic Functions Using the Quadratic Formula

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
AI.8.B: write, using technology, quadratic functions that provide a reasonable fit to data to estimate solutions and make predictions for real-world problems.	Standard not addressed	Standard not addressed
<b>(9) Exponential functions and equations. The student applies the mathematical process standards when using properties of exponential functions and their related transformations to write, graph, and represent in multiple ways exponential equations and evaluate, with and without technology, the reasonableness of their solutions. The student formulates statistical relationships and evaluates their reasonableness based on real-world data. The student is expected to:</b>		
AI.9.A: determine the domain and range of exponential functions of the form $f(x) = ab^x$ and represent the domain and range using inequalities;	Interpreting Functions	Understanding the Domain of a Function
AI.9.B: interpret the meaning of the values of $a$ and $b$ in exponential functions of the form $f(x) = ab^{xx}$ in real-world problems;	Interpreting Functions	Rewriting and Interpreting Exponential Functions in Terms of Context
	Seeing Structure in Expressions	Interpreting Graphs of Linear and Exponential Functions in Context Interpreting the Structure of Linear and Exponential Expressions
AI.9.C: write exponential functions in the form $f(x) = ab^x$ (where $b$ is a rational number) to describe problems arising from mathematical and real-world situations, including growth and decay;	Creating Equations	Modeling Exponential Relationships with Equations, Inequalities, and Graphs
	Building Functions	Writing Linear and Exponential Functions from a Context
	Linear, Quadratic, and Exponential Models	Writing Linear and Exponential Functions Based on Different Representations
AI.9.D: graph exponential functions that model growth and decay and identify key features, including $y$ -intercept and asymptote, in mathematical and real-world problems; and	Creating Equations	Modeling Exponential Relationships with Equations, Inequalities, and Graphs
	Interpreting Functions	Sketching Graphs of Linear and Exponential Functions from a Context

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
AI.9.E: write, using technology, exponential functions that provide a reasonable fit to data and make predictions for real-world problems.	Interpreting Categorical and Quantitative Data	Fitting Functions to Data
<b>(10) Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to rewrite in equivalent forms and perform operations on polynomial expressions. The student is expected to:</b>		
AI.10.A: add and subtract polynomials of degree one and degree two;	Arithmetic with Polynomials and Rational Expressions	Adding and Subtracting Polynomials
AI.10.B: multiply polynomials of degree one and degree two;	Arithmetic with Polynomials and Rational Expressions	Multiplying and Dividing Monomials Multiplying Polynomials
AI.10.C: determine the quotient of a polynomial of degree one and polynomial of degree two when divided by a polynomial of degree one and polynomial of degree two when the degree of the divisor does not exceed the degree of the dividend;	Arithmetic with Polynomials and Rational Expressions	Multiplying and Dividing Monomials
AI.10.D: rewrite polynomial expressions of degree one and degree two in equivalent forms using the distributive property;	Seeing Structure in Expressions	Factoring Expressions
AI.10.E: factor, if possible, trinomials with real factors in the form $ax^2 + bx + c$ , including perfect square trinomials of degree two; and	Seeing Structure in Expressions	Factoring Expressions Factoring Quadratic Expressions
AI.10.F: decide if a binomial can be written as the difference of two squares and, if possible, use the structure of a difference of two squares to rewrite the binomial.	Seeing Structure in Expressions	Factoring Quadratic Expressions
<b>(11) Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to rewrite algebraic expressions into equivalent forms. The student is expected to:</b>		
AI.11.A: simplify numerical radical expressions involving square roots; and	Reasoning with Equations and Inequalities	Problem Solving with Quadratic Functions
AI.11.B: simplify numeric and algebraic expressions using the laws of exponents, including integral and rational exponents.	The Real Number System	Using Rational Exponents to Rewrite Expressions

Texas Essential Knowledge and Skills	Imagine Math Algebra I Pathway	
<i>Algebra I</i>	<i>Unit</i>	<i>Lesson</i>
<b>(12) Number and algebraic methods. The student applies the mathematical process standards and algebraic methods to write, solve, analyze, and evaluate equations, relations, and functions. The student is expected to:</b>		
AI.12.A: decide whether relations represented verbally, tabularly, graphically, and symbolically define a function;	Interpreting Functions	Function Notation II
AI.12.B: evaluate functions, expressed in function notation, given one or more elements in their domains;	Interpreting Functions	Function Notation I
AI.12.C: identify terms of arithmetic and geometric sequences when the sequences are given in function form using recursive processes;	Building Functions	Writing Arithmetic Sequences Explicitly and Recursively
	Interpreting Functions	Writing Geometric Sequences Recursively Sequences as Functions
AI.12.D: write a formula for the $n$ th term of arithmetic and geometric sequences, given the value of several of their terms; and	Building Functions	Writing Arithmetic Sequences Explicitly and Recursively
	Interpreting Functions	Writing Geometric Sequences Using an Explicit Formula Sequences as Functions
AI.12.E: solve mathematic and scientific formulas, and other literal equations, for a specified variable.	Creating Equations	Solving Literal Equations

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
<i>Geometry</i>	<i>Unit</i>	<i>Lesson</i>
<b>(1) Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:</b>		
G.1.A apply mathematics to problems arising in everyday life, society, and the workplace;	Embedded throughout the program	Embedded throughout the program
G.1.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;	Embedded throughout the program	Embedded throughout the program
G.1.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;	Embedded throughout the program	Embedded throughout the program
G.1.D communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;	Embedded throughout the program	Embedded throughout the program
G.1.E create and use representations to organize, record, and communicate mathematical ideas;	Embedded throughout the program	Embedded throughout the program
G.1.F analyze mathematical relationships to connect and communicate mathematical ideas; and	Embedded throughout the program	Embedded throughout the program
G.1.G display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.	Embedded throughout the program	Embedded throughout the program
<b>(2) Coordinate and transformational geometry. The student uses the process skills to understand the connections between algebra and geometry and uses the one- and two-dimensional coordinate systems to verify geometric conjectures. The student is expected to:</b>		
G.2.A determine the coordinates of a point that is a given fractional distance less than one from one end of a line segment to the other in one- and two-dimensional coordinate systems, including finding the midpoint;	Expressing Geometric Properties with Equations	Dividing a Segment Proportionally

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
Geometry	Unit	Lesson
G.2.B derive and use the distance, slope, and midpoint formulas to verify geometric relationships, including congruence of segments and parallelism or perpendicularity of pairs of lines; and	Expressing Geometric Properties with Equations	Coordinates of Parallel and Perpendicular Lines Problem Solving with Coordinates of Parallel and Perpendicular Lines Using Coordinates to Find Perimeters and Areas
G.2.C determine an equation of a line parallel or perpendicular to a given line that passes through a given point.	Expressing Geometric Properties with Equations	Coordinates of Parallel and Perpendicular Lines
<b>(3) Coordinate and transformational geometry. The student uses the process skills to generate and describe rigid transformations (translation, reflection, and rotation) and non-rigid transformations (dilations that preserve similarity and reductions and enlargements that do not preserve similarity). The student is expected to:</b>		
G.3.A describe and perform transformations of figures in a plane using coordinate notation;	Congruence	Representing Transformations with Algebra
G.3.B determine the image or pre-image of a given two-dimensional figure under a composition of rigid transformations, a composition of non-rigid transformations, and a composition of both, including dilations where the center can be any point in the plane;	Similarity, Right Triangles, and Trigonometry	Properties of Dilations I Properties of Dilations II
G.3.C identify the sequence of transformations that will carry a given pre-image onto an image on and off the coordinate plane; and	Congruence	Defining Transformations Representing Transformations with Algebra
G.3.D identify and distinguish between reflectional and rotational symmetry in a plane figure.	Congruence	Rotational and Reflectional Symmetry
<b>(4) Logical argument and constructions. The student uses the process skills with deductive reasoning to understand geometric relationships. The student is expected to:</b>		
G.4.A distinguish between undefined terms, definitions, postulates, conjectures, and theorems;	Congruence	What is Proof?
G.4.B identify and determine the validity of the converse, inverse, and contrapositive of a conditional statement and recognize the connection between a biconditional statement and a true conditional statement with a true converse;	Standard not addressed	Standard not addressed



Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
<i>Geometry</i>	<i>Unit</i>	<i>Lesson</i>
G.4.C verify that a conjecture is false using a counterexample; and	Standard not addressed	Standard not addressed
G.4.D compare geometric relationships between Euclidean and spherical geometries, including parallel lines and the sum of the angles in a triangle.	Standard not addressed	Standard not addressed
<b>(5) Logical argument and constructions. The student uses constructions to validate conjectures about geometric figures. The student is expected to:</b>		
G.5.A investigate patterns to make conjectures about geometric relationships, including angles formed by parallel lines cut by a transversal, criteria required for triangle congruence, special segments of triangles, diagonals of quadrilaterals, interior and exterior angles of polygons, and special segments and angles of circles choosing from a variety of tools;	Congruence  Circles	Constructing Inscribed Figures  Tangents, Chords, Radii, and Angles in Circles Quadrilaterals Inscribed in Circles
G.5.B construct congruent segments, congruent angles, a segment bisector, an angle bisector, perpendicular lines, the perpendicular bisector of a line segment, and a line parallel to a given line through a point not on a line using a compass and a straightedge;	Congruence	Constructing Angles and Special Line Segments
G.5.C use the constructions of congruent segments, congruent angles, angle bisectors, and perpendicular bisectors to make conjectures about geometric relationships; and	Congruence	Constructing Angles and Special Line Segments
G.5.D verify the Triangle Inequality theorem using constructions and apply the theorem to solve problems.	Standard not addressed	Standard not addressed

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
Geometry	Unit	Lesson
<b>(6) Proof and congruence.</b> The student uses the process skills with deductive reasoning to prove and apply theorems by using a variety of methods such as coordinate, transformational, and axiomatic and formats such as two-column, paragraph, and flow chart. The student is expected to:		
G.6.A verify theorems about angles formed by the intersection of lines and line segments, including vertical angles, and angles formed by parallel lines cut by a transversal and prove equidistance between the endpoints of a segment and points on its perpendicular bisector and apply these relationships to solve problems;	Congruence	Proving Theorems About Lines and Angles
G.6.B prove two triangles are congruent by applying the Side-Angle-Side, Angle-Side-Side, Side-Side-Side, Angle-Angle-Side, and Hypotenuse-Leg congruence conditions;	Congruence Similarity, Right Triangles, and Trigonometry	Proving Theorems About Congruent Triangles Problem Solving with Congruent Triangles
G.6.C apply the definition of congruence, in terms of rigid transformations, to identify congruent figures and their corresponding sides and angles;	Congruence	Rigid Motion and Congruence Proving Theorems About Congruent Triangles
G.6.D verify theorems about the relationships in triangles, including proof of the Pythagorean Theorem, the sum of interior angles, base angles of isosceles triangles, midsegments, and medians, and apply these relationships to solve problems; and	Geometry Congruence	Angles in a Polygon Proving Theorems About Relationships in Triangles
G.6.E prove a quadrilateral is a parallelogram, rectangle, square, or rhombus using opposite sides, opposite angles, or diagonals and apply these relationships to solve problems.	Congruence Circles	Proving Theorems About Parallelograms Quadrilaterals Inscribed in Circles
<b>(7) Similarity, proof, and trigonometry.</b> The student uses the process skills in applying similarity to solve problems. The student is expected to:		
G.7.A apply the definition of similarity in terms of a dilation to identify similar figures and their proportional sides and the congruent corresponding angles; and	Similarity, Right Triangles, and Trigonometry	Transformations and Similarity

Texas Essential Knowledge and Skills		Imagine Math Geometry Pathway	
Geometry		Unit	Lesson
G.7.B apply the Angle-Angle criterion to verify similar triangles and apply the proportionality of the corresponding sides to solve problems.		Similarity, Right Triangles, and Trigonometry	Transformations and Similarity
<b>(8) Similarity, proof, and trigonometry. The student uses the process skills with deductive reasoning to prove and apply theorems by using a variety of methods such as coordinate, transformational, and axiomatic and formats such as two-column, paragraph, and flow chart. The student is expected to:</b>			
G.8.A prove theorems about similar triangles, including the Triangle Proportionality theorem, and apply these theorems to solve problems; and		Similarity, Right Triangles, and Trigonometry	Transformations and Similarity Problem Solving with Transformations and Similarity Proving Theorems About Similar Triangles
G.8.B identify and apply the relationships that exist when an altitude is drawn to the hypotenuse of a right triangle, including the geometric mean, to solve problems.		Similarity, Right Triangles, and Trigonometry	Proving Theorems About Similar Triangles
<b>(9) Similarity, proof, and trigonometry. The student uses the process skills to understand and apply relationships in right triangles. The student is expected to:</b>			
G.9.A determine the lengths of sides and measures of angles in a right triangle by applying the trigonometric ratios sine, cosine, and tangent to solve problems; and		Similarity, Right Triangles, and Trigonometry	Similarity and Trigonometric Ratios Problem Solving with Similarity and Trigonometric Ratios Sine and Cosine of Complementary Angles
G.9.B apply the relationships in special right triangles $30^\circ$ - $60^\circ$ - $90^\circ$ and $45^\circ$ - $45^\circ$ - $90^\circ$ and the Pythagorean theorem, including Pythagorean triples, to solve problems.		Geometry	Pythagorean Theorem - Mixed Problems
<b>(10) Two-dimensional and three-dimensional figures. The student uses the process skills to recognize characteristics and dimensional changes of two- and three-dimensional figures. The student is expected to:</b>			
G.10.A identify the shapes of two-dimensional cross-sections of prisms, pyramids, cylinders, cones, and spheres and identify three-dimensional objects generated by rotations of two-dimensional shapes; and		Geometric Measurement and Dimension	Cross-Sections of 3-Dimensional Figures

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
<i>Geometry</i>	<i>Unit</i>	<i>Lesson</i>
G.10.B determine and describe how changes in the linear dimensions of a shape affect its perimeter, area, surface area, or volume, including proportional and non-proportional dimensional change.	Modeling with Geometry	Using Geometric Relationships to Solve Design Problems
<b>(11) Two-dimensional and three-dimensional figures. The student uses the process skills in the application of formulas to determine measures of two- and three-dimensional figures. The student is expected to:</b>		
G.11.A apply the formula for the area of regular polygons to solve problems using appropriate units of measure;	Standard not addressed	Standard not addressed
G.11.B determine the area of composite two-dimensional figures comprised of a combination of triangles, parallelograms, trapezoids, kites, regular polygons, or sectors of circles to solve problems using appropriate units of measure;	Circles	Radians and Area of Sectors
G.11.C apply the formulas for the total and lateral surface area of three-dimensional figures, including prisms, pyramids, cones, cylinders, spheres, and composite figures, to solve problems using appropriate units of measure; and	Modeling with Geometry  Geometry	Modeling Objects with Geometric Figures  Surface Area and Volume of Rectangular Prisms Surface Area of Cylinders Surface Area of Pyramids Surface Area of Cones Surface Area of Spheres Surface Area of Composite Solids Understanding Formulas for Curved Figures
G.11.D apply the formulas for the volume of three-dimensional figures, including prisms, pyramids, cones, cylinders, spheres, and composite figures, to solve problems using appropriate units of measure.	Geometry	Surface Area and Volume of Rectangular Prisms Volume of Cylinders Volume of Pyramids and Cones Volume of Spheres Volume of Composite Solids

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
Geometry	Unit	Lesson
<b>(12) Circles. The student uses the process skills to understand geometric relationships and apply theorems and equations about circles. The student is expected to:</b>		
G.12.A apply theorems about circles, including relationships among angles, radii, chords, tangents, and secants, to solve non-contextual problems;	Circles	Tangents, Chords, Radii, and Angles in Circles
G.12.B apply the proportional relationship between the measure of an arc length of a circle and the circumference of the circle to solve problems;	Circles	Radians and Area of Sectors
G.12.C apply the proportional relationship between the measure of the area of a sector of a circle and the area of the circle to solve problems;	Circles	Radians and Area of Sectors
G.12.D describe radian measure of an angle as the ratio of the length of an arc intercepted by a central angle and the radius of the circle; and	Circles	Radians and Area of Sectors
G.12.E show that the equation of a circle with center at the origin and radius $r$ is $x^2 + y^2 = r^2$ and determine the equation for the graph of a circle with radius $r$ and center $(h, k)$ , $(x - h)^2 + (y - k)^2 = r^2$ .	Expressing Geometric Properties with Equations	Equation of a Circle
<b>(13) Probability. The student uses the process skills to understand probability in real-world situations and how to apply independence and dependence of events. The student is expected to:</b>		
G.13.A develop strategies to use permutations and combinations to solve contextual problems;	Standard not addressed	Standard not addressed
G.13.B determine probabilities based on area to solve contextual problems;	Conditional Probability and the Rules of Probability	Using Area Models for Compound Probability
G.13.C identify whether two events are independent and compute the probability of the two events occurring together with or without replacement;	Conditional Probability and the Rules of Probability	Understanding Independent and Dependent Events

Texas Essential Knowledge and Skills	Imagine Math Geometry Pathway	
<i>Geometry</i>	<i>Unit</i>	<i>Lesson</i>
G.13.D apply conditional probability in contextual problems; and	Conditional Probability and the Rules of Probability	Using Area Models for Compound Probability Understanding Conditional Probability
G.13.E apply independence in contextual problems.	Conditional Probability and the Rules of Probability	Using Area Models for Compound Probability

