Agile Mind Texas Advanced Mathematics 6 Scope and Sequence, 2025-2026
Texas Essential Knowledge and Skills for Mathematics
With Corequisite Supports

In the years prior to Grade 6, students acquired a foundation in numbers and operations, geometry, measurement, and data. Students began to develop fluency with addition and subtraction of positive fractions and decimals, and have an emergent understanding of multiplication and division of positive fractions and decimals. Understanding of measurement concepts (e.g. length, area, volume, angles), use of letters to represent unknown quantities, as well as the representation and interpretation of data, is also emerging.

The Advanced Mathematics 6 course begins by building on students' understanding of multiplication and division and of equivalent fractions as a basis for understanding ratios and proportional reasoning. Work with fractions continues as students build fluency with standard algorithms for multiplication and division of positive rational numbers. Students consider equivalent forms of rational numbers and investigate percents. Students extend their knowledge of numbers to include negative rational numbers, absolute value as a distance, and coordinates in all quadrants of the coordinate plane. Students work towards fluency with all four operations on rational numbers, including integers and signed rational numbers. Formal work with expressions, equations, and inequalities also begins at this level as students use variables to represent relationships and solve problems. Students extend their understanding of geometry and measurement as they write equations and inequalities to represent and solve problems involving properties of angles and triangles, the areas of triangles, special quadrilaterals, and polygons, and the volume of rectangular prisms. Formal work with statistics also begins at this grade level in the final two units as students represent data in various ways and build their understanding of statistical variation. Finally, students continue to deepen their understanding of personal financial literacy.

Throughout this course, students use mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

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

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

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

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

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

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

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

These processes should become the natural way in which students come to understand and do mathematics. While, depending on the content to be understood or on the problem to be solved, a variety of mathematical processes might be brought to bear, some processes may prove more useful than others. In this course, students should pay particular attention to communication and reasoning as they begin to formalize ideas from elementary grades. As students begin to work with variables and develop fluency with algorithms and geometry formulas, they have the opportunity to analyze mathematical relationships and make connections among various representations. Students should have the opportunity to investigate authentic problems and use mathematics to model real-world situations.

These course materials are designed to support 153-180 lessons (1 lesson equals 45 minutes).

Agile Mind Topics	Topic Descriptions	Texas Essential Knowledge and Skills for Mathematics • **Standards listed in black are the primary instructional focus of the topic.** • Standards in gray support topic content or indicate foundations for future work.
Rational number operations and expressions (19-22 lessons)		

1: Operations with whole numbers
 	
8-10 lessons
 	
Lessons 1-3 introduce problem scenarios, reinforce estimation as a problem-solving tool (6.1.C), and review whole number division while introducing fraction notation as representing division (6.2.E). You may be able to move through this content in fewer than 3 lessons.
	This topic reinforces the use of operations with whole numbers and moves students to fluency with the division algorithm. Students also apply common factors and multiples in a variety of contexts, including using the Distributive Property in numerical contexts, and will extend their understanding of order of operations to include the use of exponents. Students generate equivalent numerical expressions; thereby, building foundational understandings for use with algebraic expressions later in the course.	**(6.2) Number and operations.** The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:
		  (E) extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0 *Supporting Standard*
		(6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
		  (A) generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization *Readiness Standard*
		
		  (D) generate equivalent expressions using the properties of operations: ~~inverse, identity, commutative, associative, and~~ distributive properties *Readiness Standard*
		
		ELPS: 1.A, 1.E, 2.C, 3.E, 3.F, 3.G, 3.H, 4.C, 4.D, 4.F, 4.G

2: Multiplying and dividing rational numbers
11-12 lessons
 	
Lesson 12 is an optional consolidating your skills with rational number operations lesson.
	This topic provides students with opportunities to solve problems by multiplying and dividing positive fractions and decimals. A variety of models and appropriate tools allow interactive exploration of these operations and reinforce students' fluency with whole number operations. This learning is extended to include explorations with multiple operations in a single numerical expression. Students will apply their fluency with positive rational number operations in subsequent topics, including **Rates and measurement**, **Using equations and inequalities**, **Geometric measurement**, and **Describing data**.	**(6.3) Number and operations.** The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:
		  (A) recognize that dividing by a rational number and multiplying by its reciprocal result in equivalent values *Supporting Standard*
		  (B) determine, with and without computation, whether a quantity is increased or decreased when multiplied by a fraction, including values greater than or less than one *Supporting Standard*
		  (E) multiply and divide positive rational numbers fluently *Readiness Standard*
		(6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
		  (D) generate equivalent expressions using the properties of operations: inverse~~, identity, commutative, associative, and distributive properties~~ *Readiness Standard*
		ELPS: 2.D

Ratios, rates, and percents (25-26 lessons)

3: introducing and representing ratios
 	
13 lessons
 	
Corequisite support
 	
0-1 lesson
 	
"Hide-and-seek in the coordinate plane"
 	
"The coordinate plane with geoboards"
 	
These tasks are located in the Grade 6 Corequisite Support Guide.
	This topic builds on students' understanding of multiplication and division to introduce ratios. Students investigate the uses or ratios and ratio reasoning in solving real-world problems. Students use a variety of diagrams, tables of equivalent ratios, proportion equations, and coordinate graphs to reason about quantities related with ratios.	**(6.4) Proportionality.** The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:
		  (B) apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios ~~and rates~~ *Readiness Standard*
		  (C) give examples of ratios as multiplicative comparisons of two quantities describing the same attribute *Supporting Standard*
		  (E) represent ratios ~~and percents~~ with concrete models, fractions, ~~and decimals~~; *Supporting Standard*
		  (G) generate equivalent forms of fractions, ~~decimals, and percents~~ using real-world problems, ~~including problems that involve money~~ *Readiness Standard*
		(6.5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to**:**
		  (A) represent mathematical and real-world problems involving ratios ~~and rates~~ using scale factors, tables, graphs, and proportions *Supporting Standard*
		(7.4) Proportionality. The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:
		  (D) solve problems involving ratios, ~~rates, and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems~~ **Readiness Standard**
		
		ELPS: 1.B, 1.D, 2.C, 2.F, 3.B, 3.C, 4.F
		
		Corequisite standards: 5.8.A, 5.8.B, 5.8.C

4: Understanding and representing rates
 	
12 lessons
	This topic builds on the key ideas around ratio developed in the previous topic. Students learn that every ratio has associated unit rates and that unit rates are useful for solving a wide variety of problems, including converting measurement units. Students explore the concept of rate through the use of diagrams, tables, proportions, and coordinate graphs. Students use rates in situations to solve real-world problems such as determining the "best buy" using unit prices, miles per gallon, percents, batting averages, and measurement conversion. This topic provides numerous opportunities for students to build fluency with whole number division.	(6.2) Number and operations. The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to:
		  (E) extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0 *Supporting Standard*
		(6.4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to:
		  (B) apply qualitative and quantitative reasoning to solve prediction and comparison of real-world problems involving ratios and rates *Readiness Standard*
		  (D) give examples of rates as the comparison by division of two quantities having different attributes, including rates as quotients *Supporting Standard*
		  (E) represent ratios and percents with concrete models, fractions, and decimals; *Supporting Standard*
		  (F) represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, ~~strip diagrams,~~ number lines, and numbers *Supporting Standard*
		  (G) generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money *Readiness Standard*

		(H) convert units within a measurement system, including the use of proportions and unit rates ***Readiness Standard*** **(6.5) Proportionality.** The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to**:** (A) represent mathematical and real-world problems involving ratios and rates using scale factors, tables, graphs, and proportions *Supporting Standard* (B) solve real-world problems to find the whole given a part and the percent, to find the part given the whole and the percent, and to find the percent given the part and the whole, including the use of concrete and pictorial models ***Readiness Standard*** (C) use equivalent fractions, decimals, and percents to show equal parts of the same whole *Supporting Standard* **(7.4) Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to: (B) calculate unit rates from rates in mathematical and real-world problems **Supporting Standard** (D) solve problems involving ~~ratios~~, rates, ~~and percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems~~ **Readiness Standard** **ELPS:** 1.A, 1.D, 1.E, 2.C, 2.F, 3.J, 4.C, 4.F
Rational numbers and their applications (16-18 lessons)		
5: Equivalent forms: fractions, decimals, and percents 9 lessons	This topic reviews the multiple representations of rational numbers as fractions, decimals, and percents. Students explore real-world settings and practice ordering rational numbers, from least to greatest and greatest to least. Students practice converting from one form of rational number to another through multiple representations.	**(6.2) Number and operations.** The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to: (A) classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers *Supporting Standard* (C) locate, compare, and order ~~integers and~~ rational numbers using a number line *Supporting Standard* (D) order a set of rational numbers arising from mathematical and real-world contexts ***Readiness Standard*** (E) extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b $\neq$ 0 *Supporting Standard* **(6.4) Proportionality.** The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to: (E) represent ratios and percents with concrete models, fractions, and decimals *Supporting Standard* (F) represent benchmark fractions and percents such as 1%, 10%, 25%, 33 1/3%, and multiples of these values using 10 by 10 grids, strip diagrams, number lines, and numbers *Supporting Standard* (G) generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money ***Readiness Standard***

		(6.5) Proportionality. The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to: (A) represent mathematical and real-world problems involving ratios and rates using scale factors, ~~tables, graphs,~~ and proportions ***Supporting Standard*** (B) solve real-world problems ~~to find the whole given a part and the percent,~~ ~~to find the part given the whole and the percent,~~ and to find the percent given the part and the whole, including the use of concrete and pictorial models ***Readiness Standard*** (C) use equivalent fractions, decimals, and percents to show equal parts of the same whole ***Supporting Standard*** **ELPS:** 1.F, 3.J, 4.C, 4.F
6: Extending the number system 7-9 lessons Lessons 7-8 are applications of graphing points and can be omitted for time.	This topic focuses on models that represent integers. Students learn about the position of integers and other rational numbers on number lines and develop an understanding of opposites and absolute value. They explore real-world examples of integers in a variety of contexts. Students then extend their understanding of integers and other rational numbers as they graph points in all four quadrants, and examine how the coordinates of points are impacted by reflections across the x- and y-axes.	**(6.2) Number and operations.** The student applies mathematical process standards to represent and use rational numbers in a variety of forms. The student is expected to: (A) classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to describe relationships between sets of numbers ***Supporting Standard*** (B) identify a number, its opposite, and its absolute value ***Supporting Standard*** (C) locate, compare, and order integers and rational numbers using a number line ***Supporting Standard*** (D) order a set of rational numbers arising from mathematical and real-world contexts ***Readiness Standard*** (E) extend representations for division to include fraction notation such as a/b represents the same number as a ÷ b where b ≠ 0 ***Supporting Standard*** **(6.11) Measurement and data.** The student applies mathematical process standards to use coordinate geometry to identify locations on a plane. The student is expected to graph points in all four quadrants using ordered pairs of rational numbers ***Readiness Standard*** **(7.2) Number and operations.** The student is expected to extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers. **Supporting Standard** **ELPS:** 1.E, 2.C, 2.E, 3.D, 5.F, 5.G

Expressions, equations, and inequalities (23 lessons)

7: Variables, expressions, and equations 13 lessons	In this topic, students explore patterns and relationships through multiple representations such as tables, graphs, models, and equations. They use variables to represent numbers and write expressions when solving problems. Students will also generate and compare equivalent expressions.	**(6.4) Proportionality.** The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to: (A) compare two rules verbally, numerically, graphically, and symbolically in the form of $y = ax$ or $y = x + a$ in order to differentiate between additive and multiplicative relationships ***Supporting Standard*** **(6.6) Expressions, equations, and relationships.** The student applies mathematical process standards to use multiple representations to describe algebraic relationships. The student is expected to: (A) identify independent and dependent quantities from tables and graphs ***Supporting Standard*** (B) write an equation that represents the relationship between independent and dependent

		quantities from a table *Supporting Standard* (C) represent a given situation using verbal descriptions, tables, graphs, and equations in the form y = kx or y = x + b *Readiness Standard* **(6.7) Expressions, equations, and relationships.** The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to: (A) generate equivalent numerical expressions using order of operations, including whole number exponents and prime factorization *Readiness Standard* (B) distinguish between expressions and equations verbally, numerically, and algebraically *Supporting Standard* (C) determine if two expressions are equivalent using concrete models, pictorial models, and algebraic representations *Supporting Standard* (D) generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties *Readiness Standard* **(7.4) Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to: (A) represent constant rates of change in mathematical and real world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including *d* = *rt* Readiness Standard **ELPS:** 1.E, 2.C, 2.F, 2.I, 3.B, 4.F, 4.G, 5.B, 5.F
8: Using equations and inequalities 10 lessons	In this topic, students formulate simple equations and inequalities that arise from real-world situations and solve them with concrete models and properties of equality. They also write corresponding real-world problems given one-variable, one-step equations or inequalities. As students solve equations, they continue to build and apply fluency with positive rational number operations.	**(6.3) Number and operations.** The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to: (E) multiply and divide positive rational numbers fluently *Readiness Standard* **(6.7) Expressions, equations, and relationships.** The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to: (D) generate equivalent expressions using the properties of operations: inverse, ~~identity, commutative, associative, and distributive properties~~ *Readiness Standard* **(6.9) Expressions, equations, and relationships.** The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to: (A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems *Supporting Standard* (B) represent solutions for one-variable, one-step equations and inequalities on number lines *Supporting Standard* (C) write corresponding real-world problems given one-variable, one-step equations or inequalities *Supporting Standard* **(6.10) Expressions, equations, and relationships.** The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to: (A) model and solve one-variable, one-step equations and inequalities that represent problems, ~~including geometric concepts~~ *Readiness Standard* (B) determine if the given value(s) make(s) one-variable, one-step equations or inequalities true *Supporting Standard* **ELPS:** 1.3, 2.I, 4.C

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Integer and signed rational number operations (21 - 26 lessons)		

9: Adding and subtracting integers
 	
6-7 lessons
 	
Lesson 5 provides an alternative model and could be omitted for time.
	This topic focuses on the models that represent integers. Students build on their understanding of integers (including opposites and absolute value) and their relation to rational numbers, including their position on the number line. They investigate integers in multiple contexts. They learn to add and subtract integers using a variety of models, including number line and tiles.	**(6.3) Number and operations.** The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:
		    (C) represent integer operations with concrete models and connect the actions with the models to standardized algorithms *Supporting Standard*
		    (D) add, subtract, ~~multiply, and divide~~ integers fluently; ~~and multiply and divide positive rational numbers fluently~~ *Readiness Standard*
		(6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
		    (D) generate equivalent expressions using the properties of operations: inverse, identity, ~~commutative, associative, and distributive properties~~ *Readiness Standard*
		(6.9) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to represent situations. The student is expected to:
		    (A) write one-variable, one-step equations and inequalities to represent constraints or conditions within problems *Supporting Standard*
		(6.10) Expressions, equations, and relationships. The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to:
		    (A) model and solve one-variable, one-step equations and inequalities that represent problems *Readiness Standard*

10: Multiplying and dividing integers
 	
8 lessons
	In this topic, students experience real-world applications as the context for investigating multiplying and dividing integers. Patterns, profits and losses, ocean depth, and exponential notation are tools used to explore different products and quotients.	**(6.3) Number and operations**. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:
		    (C) represent integer operations with concrete models and connect the actions with the models to standardized algorithms *Supporting Standard*
		    (D) add, subtract, multiply, and divide integers fluently; and multiply and divide positive rational numbers fluently *Readiness Standard*
		(6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to:
		    (A) generate equivalent numerical expressions using order of operations, including whole number exponents ~~and prime factorization~~ *Readiness Standard*
		    (D) generate equivalent expressions using the properties of operations: inverse, identity, commutative, associative, and distributive properties *Readiness Standard*
		
		ELPS: 3.G

11: Rational numbers
 	
7-11 lessons
Lessons 4-7 and 9-11 specifically address 7th grade standards.
	This topic builds on students' prior work with applying properties of operations to solve problems with positive fractions and decimals, and with integers. Students will solve real-world and mathematical problems involving the four operations with positive and negative rational numbers including negative fractions and decimals. Students are	**(7.2) Number and operations.** The student is expected to extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers. **Supporting Standard**
		(7.3) 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:
		    (A) add, subtract, multiply, and divide rational numbers fluently **Supporting Standard**
		    (B) apply and extend previous understandings of operations to solve problems using

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Lessons 1-3 reinforce positive rational number operations, may be used as needed. Lesson 8 introduces negative rates of change and can be omitted. This content will be covered in a future course.	given multiple opportunities to practice these skills and build their numerically fluency using these operations. Students will continue to strengthen fluency with rational numbers in future topics.	addition, subtraction, multiplication, and division of rational numbers **Readiness Standard** **(7.4) Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to: (B) calculate unit rates from rates in mathematical and real-world problems **Supporting Standard** (E) convert between measurement systems, including the use of proportions and the use of unit rates **Supporting Standard** **ELPS: 1.A, 2.E, 2.F, 3.B, 3.D, 3.J, 4.C, 4.F**

Geometry (16-17 lessons)

12: Relationships in triangles 5 lessons	In this topic, students investigate angle relationships found among the interior angles of triangles. Students also investigate conditions required to form a triangle, including whether or not a given set of three side lengths determines a triangle or not. Finally students investigate the relationship between the side lengths of a triangle and the related angle measures.	**(6.8) Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is expected to: (A) extend previous knowledge of triangles and their properties to include the sum of angles of a triangle, the relationship between the lengths of sides and measures of angles in a triangle, and determining when three lengths form a triangle ***Supporting Standard*** **(6.10) Expressions, equations, and relationships.** The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to: (A) model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts ***Readiness Standard*** **(7.11) Expressions, equations, and relationships.** The student applies mathematical process standards to solve one-variable equations and inequalities. The student is expected to: (C) write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships **Supporting Standard** **ELPS:** 1.B, 1.E, 4.C
13: Geometric measurement 11 lessons **Corequisite support** 0-1 lesson "Comparing volumes" "Designing prisms"	In this topic, students will build on their understanding of length and area in rectangles to find the areas of triangles and other quadrilaterals. Students will find area of quadrilaterals and polygons using decomposition and model the formulas for areas of triangles and special quadrilaterals. Students will then move to three-dimensional objects and solve problems involving volume of right rectangular prisms. As students find length, area and volume, they continue to build and apply fluency with positive rational number operations.	(6.3) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to: (E) multiply and divide positive rational numbers fluently *Readiness Standard* **(6.4) Proportionality.** The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to: (H) convert units within a measurement system, including the use of proportions and unit rates *Readiness Standard* (6.7) Expressions, equations, and relationships. The student applies mathematical process standards to develop concepts of expressions and equations. The student is expected to: (A) generate equivalent numerical expressions using order of operations, including whole number exponents and ~~prime factorization~~. *Readiness Standard* **(6.8) Expressions, equations, and relationships.** The student applies mathematical process standards to use geometry to represent relationships and solve problems. The student is

These tasks are located in the Grade 6 Corequisite Support Guide.		expected to: (B) model area formulas for parallelograms, trapezoids, and triangles by decomposing and rearranging parts of these shapes ***Supporting Standard*** (C) write equations that represent problems related to the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers ***Supporting Standard*** (D) determine solutions for problems involving the area of rectangles, parallelograms, trapezoids, and triangles and volume of right rectangular prisms where dimensions are positive rational numbers ***Readiness Standard*** **(6.10) Expressions, equations, and relationships.** The student applies mathematical process standards to use equations and inequalities to solve problems. The student is expected to: (A) model and solve one-variable, one-step equations and inequalities that represent problems, including geometric concepts ***Readiness Standard*** **ELPS:** 2.E, 3.B **Corequisite standards:** 5.4.G, 5.6.A, 5.6.B

Data analysis (21 lessons)		
14: Graphical representations of data 8 lessons	This topic explores graphical representations of data including bar graphs, circle graphs, stem-and-leaf plots, and histograms. Students explore the characteristics of each representation and use them to both pose and answer questions. Students will collect data and learn to choose a representation based on the type of data (categorical or numerical) they have collected and the purpose of the representation.	**(6.3) Number and operations.** The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to: (E) multiply and divide positive rational numbers fluently ***Readiness Standard*** (6.4) Proportionality. The student applies mathematical process standards to develop an understanding of proportional relationships in problem situations. The student is expected to: (G) generate equivalent forms of fractions, decimals, and percents using real-world problems, including problems that involve money ***Readiness Standard*** **(6.5) Proportionality.** The student applies mathematical process standards to solve problems involving proportional relationships. The student is expected to: (B) solve real-world problems ~~to find the whole given a part and the percent~~, ~~to find the part given the whole and the percent,~~ and to find the percent given the part and the whole, including the use of concrete and pictorial models ***Readiness Standard*** (C) use equivalent fractions, decimals, and percents to show equal parts of the same whole ***Supporting Standard*** **(6.12) Measurement and data.** The student applies mathematical process standards to use numerical or graphical representations to analyze problems. The student is expected to: (A) represent numeric data graphically, including ~~dot plots~~ stem-and-leaf plots, histograms, and ~~box plots~~ ***Supporting Standard*** (B) use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution ***Supporting Standard*** (D) summarize categorical data with numerical and graphical summaries, including ~~the mode,~~ the percent of values in each category (relative frequency table), and the percent bar graph, and use these summaries to describe the data distribution ***Readiness Standard***

		(6.13) Measurement and data. The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to: (A) interpret numeric data summarized in ~~dot plots,~~ stem-and-leaf plots, histograms ~~and box plots~~ *Readiness Standard* (B) distinguish between situations that yield data with and without variability *Supporting Standard* **(7.6) 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: (F) use data from a random sample to make inferences about a population *Supporting Standard* (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 **Readiness Standard** **ELPS:** 2.C, 2.F, 3.F, 4.C, 4.E, 5.B, 5.G
15: Describing data 13 lessons	This topic explores the measures of central tendency: mean, median, and mode. Students learn how to compute the measures and how to choose one measure to represent their data. They learn how to make a visual representation of data, such as a dot plot, box plot, or a histogram, and describe the shape and variability of their data, including finding the range and interquartile range, and identifying outliers. As students find measures of center and spread, including through their own data collection, they continue to build and apply fluency with positive rational number operations.	(6.3) Number and operations. The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to: (E) multiply and divide positive rational numbers fluently *Readiness Standard* **(6.12) Measurement and data.** The student applies mathematical process standards to use numerical or graphical representations to analyze problems. (A) represent numeric data graphically, including dot plots, stem-and-leaf plots, histograms, and box plots *Supporting Standard* (B) use the graphical representation of numeric data to describe the center, spread, and shape of the data distribution *Supporting Standard* (C) summarize numeric data with numerical summaries, including the mean and median (measures of center) and the range and interquartile range (IQR) (measures of spread), and use these summaries to describe the center, spread, and shape of the data distribution *Readiness Standard* **(6.13) Measurement and data.** The student applies mathematical process standards to use numerical or graphical representations to solve problems. The student is expected to: (A) interpret numeric data summarized in dot plots, stem-and-leaf plots, histograms, and box plots *Readiness Standard* **(7.6) 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: (F) use data from a random sample to make inferences about a population **Supporting Standard** (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 **Readiness Standard**

		(7.12) Measurement and data. The student applies mathematical process standards to use statistical representations to analyze data. The student is expected to:
		    (A) compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads **Readiness Standard**
		    (B) use data from a random sample to make inferences about a population **Supporting Standard**
		    (C) compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations **Supporting Standard**
		
		ELPS: 2.C, 3.B, 4.E

Financial literacy (12-14 lessons)

16: Building and using personal finances
 	
5 lessons
	In this topic, students are introduced to important financial tools that they will encounter as they move into adulthood. They compare features of checking accounts, explain similarities and differences between credit cards and debit cards, and analyze a credit report. Students learn to use a check register to manage their account balances. They also investigate the required education and potential salaries for different occupations.	**(6.3) Number and operations.** The student applies mathematical process standards to represent addition, subtraction, multiplication, and division while solving problems and justifying solutions. The student is expected to:
		
		    (D) add, subtract, multiply, and divide integers fluently *Readiness Standard*
		    (E) multiply and divide positive rational numbers fluently *Readiness Standard*
		
		(6.14) Personal financial literacy. The student applies mathematical process standards to develop an economic way of thinking and problem solving useful in one's life as a knowledgeable consumer and investor. The student is expected to:
		    (A) compare the features and costs of a checking account and a debit card offered by different local financial institutions *Supporting Standard*
		    (B) distinguish between debit cards and credit cards *Supporting Standard*
		    (C) balance a check register that includes deposits, withdrawals, and transfers *Supporting Standard*
		    (D) explain why it is important to establish a positive credit history *Not assessed*
		    (E) describe the information in a credit report and how long it is retained *Supporting Standard*
		    (F) describe the value of credit reports to borrowers and to lenders *Supporting Standard*
		    (G) explain various methods to pay for college, including through savings, grants, scholarships, student loans, and work-study *Supporting Standard*
		    (H) compare the annual salary of several occupations requiring various levels of post-secondary education or vocational training and calculate the effects of the different annual salaries on lifetime income *Supporting Standard*
		
		ELPS: 3.B, 4.C, 4.D, 4.F, 4.G

17. Applications of percents 7-9 Lessons	This topic investigates the various uses of percent in solving real-world problems. Applications include gratuities, commissions, fees, percent error, discount, markup, increases and decreases in value, and simple interest.	**(7.3) 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) apply and extend previous understandings of operations to solve problems using ~~addition, subtraction,~~ multiplication, ~~and division~~ of rational numbers **Readiness Standard** **(7.4) Proportionality.** The student applies mathematical process standards to represent and solve problems involving proportional relationships. The student is expected to:

Lessons 1-2 review 6th grade standards, use as needed.
 	
Lessons 3, 6-10 and 12 address key 7th grade standards
 	
Lessons 4-5 are applications and can be omitted for time.
 	
Lesson 11 goes beyond these standards and can be omitted.
		(D) solve problems involving ~~ratios, rates, and~~ percents, including multi-step problems involving percent increase and percent decrease, and financial literacy problems **Readiness Standard**
		(7.13) 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:
		   (A) calculate the sales tax for a given purchase ~~and calculate income tax for earned wages~~ **Supporting Standard**
		   (F) analyze and compare monetary incentives, including sales, ~~rebates, and coupons~~ **Supporting Standard**
		ELPS: 2.C, 2.I, 3.B, 3.C, 3.G, 3.J
		Corequisite standards: 6.5.A, 6.5.B, 6.9.A, 6,9.B

18: Probability
0-14 lessons
 	
Optional topic: Probability is repeated in the Advanced Mathematics 7 course. Districts can make a local decision regarding when to teach this content.
 	
Lesson 12 is an application of compound events to dependent events and can be omitted for time.
	In this topic, students investigate simple and compound events using proportional reasoning through several different models. Games of a probabilistic nature are developed as tools to test conjectures and the idea of fairness. Vocabulary and appropriate terminology are emphasized throughout the topic.	**(7.6) 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:
		   (A) represent sample spaces for simple and compound events using lists and tree diagrams **Supporting Standard**
		   (B) select and use different simulations to represent simple and compound events with and without technology **Not assessed**
		   (C) make predictions and determine solutions using experimental data for simple and compound events **Supporting Standard**
		   (D) make predictions and determine solutions using theoretical probability for simple and compound events **Supporting Standard**
		   (E) find the probabilities of a simple event and its complement and describe the relationship between the two Supporting Standard
		   (H) solve problems using qualitative and quantitative predictions and comparisons from simple experiments **Readiness Standard**
		   (I) determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces **Readiness Standard**
		
		ELPS: 2.C, 2.F

APPENDIX: Key Learning from Earlier Grades

The topics in this section provide support for key learning and skills from earlier grades that students may need to be successful with concepts in this course. We have provided this set of lessons and problem-solving resources that can be used for differentiated practice and review. Specific guidance on how to use these topics is provided in the accompanying co-requisite guide, however, teachers may choose to use these topics in the way that serves their students best. Teachers may choose to assign these resources to students for independent review and practice, or they may choose to use them in facilitating small-group instruction.

Agile Mind Topics	Topic Descriptions	Texas Essential Knowledge and Skills for Mathematics • **Standards listed in black are the primary instructional focus of the topic.** • Standards in gray support topic content or indicate foundations for future work.
Solidifying your skills with whole numbers	In this topic, students can review and strengthen their fluency with whole number operations.	**(4.4) 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: (A) add and subtract whole numbers ~~and decimals to the hundredths place~~ using the standard algorithm; (C) represent the product of 2 two-digit numbers using arrays, area models, or equations, including perfect squares through 15 by 15; (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; (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; (F) use strategies and algorithms, including the standard algorithm, to divide up to a four-digit dividend by a one-digit divisor; (H) solve with fluency one- and two-step problems involving multiplication and division, including interpreting remainders. **(5.3) 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) multiply with fluency a three-digit number by a two-digit number using the standard algorithm; (C) solve with proficiency for quotients of up to a four-digit dividend by a two-digit divisor using strategies and the standard algorithm
Solidifying your skills with fractions and decimals	In this topic, students can review and strengthen their ability to represent fractions and decimals, carry out simple fraction operations, and carry out addition, subtraction, and	**(3.3) Number and operations.** The student applies mathematical process standards to represent and explain fractional units. The student is expected to: (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; (C) explain that the unit fraction 1/b represents the quantity formed by one part of a whole that has been partitioned into b equal parts where b is a non-zero whole number; (G) explain that two fractions are equivalent if and only if they are both represented by the same point on

multiplication of decimals with fluency. They will also review and strengthen their ability to divide using a variety of strategies.	the number line or represent the same portion of a same size whole for an area model; and (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. **(4.3) Number and operations.** The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to: (E) represent and solve addition and subtraction of fractions with equal denominators using objects and pictorial models that build to the number line and properties of operations; **(4.4) 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: (A) add and subtract ~~whole numbers and~~ decimals to the hundredths place using the standard algorithm; **(5.3) 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: (D) represent multiplication of decimals with products to the hundredths using objects and pictorial models, including area models; (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; (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; (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; (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;