

Seventh Grade Scope and Sequence Aligned to the TEKS

Number, Operation, and Quantitative Reasoning

Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
7.1.A Compare and order integers and positive rational numbers	7.13.A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	<p>Convert between fractions and decimals</p> <ul style="list-style-type: none"> ● Use fractional models of tenths to estimate decimal equivalents for fractions ● Use equivalent fractions (denominators of 10, 100, 1000) to convert between fractions and decimals <ul style="list-style-type: none"> – Connect to algorithm ● Divide fractions and mixed numbers <ul style="list-style-type: none"> – Concrete models – Transfer to student drawn pictures – Describe verbally – Generalize model to an algorithm ● Use division (with calculator if needed) to convert fractions to decimals <p>Multiplicaiton of fractions and decimals</p> <ul style="list-style-type: none"> ● Proper fractions <ul style="list-style-type: none"> – Model with manipulatives/grids – Transfer to student drawn pictures – Describe verbally – Generalize model to an algorithm ● Decimal multiplication (tenths) <ul style="list-style-type: none"> – Model with manipulatives/grids – Transfer to student drawn pictures – Describe verbally – Generalize model to an algorithm ● Fractions (greater than or equal to one) <ul style="list-style-type: none"> – Model with manipulatives/grids 	p. 23	PR: Lost and Gained	
7.1.B Convert between fractions, decimals, whole numbers, and percents mentally, on paper, or with a calculator			p. 25	NR: What’s the Point?	
7.2.A Represent multiplication and division situations involving fractions and decimals with concrete models, pictures, words, and numbers	7.13.B Use a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness		p. 29	NR: Multiplying Fractions	
7.2.B Use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals	7.13.C Select or develop an appropriate problem solving strategy		p. 32	NR: Product and Quotient	
7.2.C Use models to add, subtract, multiply and divide integers and connect the actions to algorithms	7.13.D Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems		p. 34	NR: Divide and Conquer	
7.2.E Simplify numerical expressions involving order of operations and exponents	7.14.A Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic		p. 39	PS: Jordan’s Dilemma	
7.2.F Select and use appropriate operations to solve problems and justify the selections			p. 40	PS: Erin and Tai’s CD	
7.2.G Determine the reasonableness of a solution to a problem			p. 42	PS: The ABCs and Prime Factors	

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Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
<p>7.7.A Locate and name points in a coordinate plane using ordered pairs of integers</p> <hr/> <p>7.9 A Estimate measurements and solve application problems involving length (including perimeter and circumference), area and volume</p>	<p>mathematical models</p> <p>7.14.B Evaluate the effectiveness of different representations to communicate ideas</p> <p>7.15.A Make conjectures from patterns or sets of examples and nonexamples</p> <p>7.15.B Validate conclusions using mathematical properties and relationships</p>	<ul style="list-style-type: none"> - Transfer to student drawn pictures - Describe verbally - Generalize model to an algorithm <ul style="list-style-type: none"> • Decimal multiplication <ul style="list-style-type: none"> - Use estimation to predict a reasonable answer - Model with manipulatives/grids - Transfer to student drawn pictures - Describe verbally - Generalize model to an algorithm - Use estimated products verify algorithm <p>Division of fractions and decimals</p> <ul style="list-style-type: none"> • Divide decimal dividends by whole number divisors derived from application situations • Divide decimal dividends by decimal divisors <ul style="list-style-type: none"> - Mentally with money (How many nickels in a dollar? Two dollars?) - Table building using technology to determine the quotient <p>Solve application problems using all operations (include perimeter and area in applications)</p> <p>Integer Operations For each operation:</p> <ul style="list-style-type: none"> • Model with manipulative (algebra tiles, 2 color tiles, etc.) • Transfer to student drawn pictures • Describe verbally • Generalization 	<p>p. 127</p> <hr/> <p>p. 165</p>		

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Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
		Quantitative Reasoning (blended into each activity) <ul style="list-style-type: none">• Estimation• Reasonableness			

Patterns, Relationships, and Algebraic Thinking

Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
7.2.D Use division to find unit rates and ratios in proportional relationships such as speed, density, price, recipes, and student-teacher ratio	7.11.B Make inferences and convincing arguments based on analysis of given or collected data	Use division to find unit rates in application problems	p. 37	AR: Movin' on Down the Line	
7.3.A Estimate and find solutions to application problems involving percent	7.13.A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	Find solutions to application problems involving percentage of certain values <ul style="list-style-type: none"> • Using benchmark percents • Using percent bars/scales • Using scale factor to find equivalent ratios 	p. 74	AR: Stretching Sequences (generalizing rules from numerical processes)	
7.3.B Estimate and find solutions to applications problems involving proportional relationships such as similarity, scaling, unit costs, and related measurement units	7.13.B Use a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness	Find solutions to application problems involving finding part or the percentage <ul style="list-style-type: none"> • Using percent bars/scales • Using scale factor to find equivalent ratios 	p. 76	AR: Speed Trap	
7.4.A Generate formulas involving conversions, perimeter, area, circumference, volume, and scaling	7.13.C Select or develop an appropriate problem solving strategy	Solve application problems involving scaling, unit costs, and related measurement units <ul style="list-style-type: none"> • Multiply by scale factor to find equivalent ratios • Use dimensional analysis 	p. 79	AR: Making Connections Activities 1 and 2	
7.4.B Graph data to demonstrate relationships in familiar concepts such as conversions, perimeter, area, circumference, volume, and scaling	7.13.D Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems	Identify patterns <ul style="list-style-type: none"> • Use models to generate patterns. • Identify what is changing and what is staying the same as the term number increases. Color code pictures to show what is changing and what is staying the same. 	p. 82	AR: Cover Up (method)	
7.4.C Describe the relationship between the terms in a sequence and their positions in the sequence	7.14.A Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models		p. 85	PR: The Perfect Paint Color	
7.5.A Use concrete models to solve equations and use symbols to record the actions.	7.14.B Evaluate the effectiveness of		p. 88	PR: Percent Bars	
7.5B Formulate a possible problem situation when given a simple equation			p. 90	PS: Sales Tax	
7.7.A Locate and name points on a coordinate plane using ordered pairs of integers			p. 127	PS: Hexagon Pattern Train	
				PS: Farmer Joe	

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Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
7.7.B Graph translations on a coordinate plane	<p>different representations to communicate ideas</p> <p>7.15.A Make conjectures from patterns or sets of examples and nonexamples</p> <p>7.15.B Validate conclusions using mathematical properties and relationships</p>	<ul style="list-style-type: none"> • Write numerical process that matches what is being observed with the model. • Predict the numerical process for later term numbers • Develop a rule for the pattern based on the patterns in the numerical process. • Plot the term numbers and term values as ordered pairs. <ul style="list-style-type: none"> – Graph paper – Graphing calculator (list, window, scatterplot, use rule and table function to verify) • Use patterning to solve application problems <p>Solve equations</p> <ul style="list-style-type: none"> • One-step equations <ul style="list-style-type: none"> – With model (ex. Algebra tiles) – Connect to symbolic process – Create word problems from given equations • Two-step equations <ul style="list-style-type: none"> – With model (ex. Algebra tiles) – Connect to symbolic process – Create word problems from given equations 	p. 129		

Geometry and Measurement

Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
7.1.C Represent squares and square roots using geometric models	7.13.A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics 7.13.B Use a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness 7.13.C Select or develop an appropriate problem solving strategy 7.13.D Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems	Solve application problems involving similarity, and related measurement units <ul style="list-style-type: none"> • Multiply by scale factor to find equivalent ratios • Determine attributes of similar figures Use dimensional analysis Use angle measures to classify pairs of angles as complementary or supplementary. Characteristics and properties of plane figures <ul style="list-style-type: none"> • Angles • Sides • Diagonals • Shape ratios Classify plane figures using properties Graph translations on coordinate grid <ul style="list-style-type: none"> • Ordered pairs – original and new • Determine rule of translation Generate formulas for area and perimeter Represent squares and square roots with and without models	p. 27	PR: Restless Rectangles	
7.4.A Generate formulas involving conversions, perimeter, area, circumference, volume, and scaling			p. 79	PR: Lost and Gained GM: Quadrilateral Quest	
7.6.A Use angle measurements to classify pairs of angles as complementary or supplementary			p. 118	GM: Park Path Design	
7.6.B Use properties to classify shapes including triangles, quadrilaterals, pentagons, and circles			p. 120	GM: Translations GM: Reflections	
7.6.D Use critical attributes to define similarity			p. 125	GM: Investigating Properties of Triangles	
7.6.C Use properties to classify solids, including pyramids, cones, prisms, and cylinders			p. 123	GM: Grass Fire	
7.8.A Sketch a solid when given the top, side, and front views			p. 132	GM: Skydiving	
7.8.B Make a net (two-dimensional model) of the surface area of a solid			p. 135	GM: Third of a Prism/Make a Cone	
7.8.C Use geometric concepts and properties to solve problems in fields such as art and architecture			p. 137	PS: Rock Around the Clock	
7.9 A Estimate measurements and solve application problems involving length (including perimeter and circumference), area and volume			7.14.A Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models 7.14.B Evaluate the effectiveness of different representations to communicate ideas 7.15.A Make conjectures from patterns or sets of examples and nonexamples 7.15.B Validate conclusions using mathematical properties and relationships	p. 165	

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Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTEAMS Rethinking Middle School Mathematics	Resources
		Characteristics and properties of solid figures <ul style="list-style-type: none"> • Number (Faces, Bases, Edges, Vertices) • Shape (Faces, Bases) Classify solid figures using properties Sketch solids when given top, side, and front views Make a net from a solid Generate formulas for volume		Problem	

Probability and Statistics

Content Objective (TEKS)	Process Objective (TEKS)	Topics	Standards in the Classroom	TEXTTEAMS Rethinking Middle School Mathematics	Resources
7.10.A Construct sample spaces for compound events (dependent and independent)	7.13.A Identify and apply mathematics to everyday experiences, to activities in and outside of school, with other disciplines, and with other mathematical topics	<p>Explore compound probability through experimentation</p> <ul style="list-style-type: none"> Distinguish between independent and dependent compound events Determine the sample space Determine favorable and possible outcomes Distinguish between theoretical and experimental probabilities <p>Select different graphical representations for given or collected data (with and without technology) Make inferences/conclusions based on given/collected data.</p> <p>Choose the measure of central tendency that best describes the data. (Include range in discussion of each measure of central tendency.)</p> <ul style="list-style-type: none"> Justify the selection. Calculate the measure. 	p. 201	PR: What's in the Bag?	
7.10.B Find the approximate probability of a compound event through experimentation	7.13.B Use a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness		p. 203	PS: Switching Colors	
7.11.A Select and use an appropriate representation for presenting collected data and justify the selection			p. 205		
7.11.B Make inferences and convincing arguments based on analysis of given or collected data	7.13.C Select or develop an appropriate problem solving strategy		p. 207		
7.12.A Describe a set of data using mean, median, mode, and range	7.13.D Select tools such as real objects, manipulatives, paper/pencil, and technology or techniques such as mental math, estimation, and number sense to solve problems		p. 209		
7.12.B Choose among mean, median, mode, or range to describe a set of data and justify the choice for a particular situation	7.14.A Communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models		p. 212		
	7.14.B Evaluate the effectiveness of different representations to communicate ideas				
	7.15.A Make conjectures from patterns or sets of examples and nonexamples				
	7.15.B Validate conclusions using mathematical properties and relationships				

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