

Math 7

Units		Common Core Standards	Vocabulary	Pacing
Unit 1: Variables and Equations	Chapter 1 Sections 1.2-1.7	<p>Use properties of operations to generate equivalent expressions</p> <p>7. EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7. EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>Solve real-life and mathematical problems using numerical and algebraic expressions and equations</p> <p>7. EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>7. EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume</p> <p>7. G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	Evaluate Expression Order of operations Variable Numerical Verbal Model Power Exponent Base Equation Solution Solving an Equation Formula Perimeter	10 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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Units	Common Core Standards	Vocabulary	Pacing	
Unit 2: Integer Operations	Chapter 2 Sections 2.1-2.8	<p>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>Use properties of operations to generate equivalent expressions 7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>Use properties of operations to generate equivalent expressions 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related</p> <p>Solve real-life and mathematical problems using numerical and algebraic expressions and equations 7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.</p> <p>7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p>	<p>Integers Negative Integer Positive Integer Absolute Value Opposites Mean Terms Like Terms Coefficient Constant Term Distributive Property Coordinate Plane x-axis y-axis Origin Quadrant Ordered pair x-coordinate y-coordinate</p>	17 days
	<p>Assessments: Multiple Quizzes Final Test</p>			

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 3: Solving Equations and Inequalities	Chapter 3 Sections 3.1-3.8	<p>Use properties of operations to generate equivalent expressions 7. EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>Solve real-life and mathematical problems using numerical and algebraic expressions and equations 7. EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. 7. EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume 7. G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms</p>	Equivalent equations Inverse Operations Base Height Inequality Solution of an Inequality Equivalent Inequalities	15 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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Units	Common Core Standards	Vocabulary	Pacing
Unit 4: Rational Operations	<p>Chapter 5 Sections 5.1-5.8</p>	<p>Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers 7.NS.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. 7. NS.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers 7. NS.3 Solve real-world and mathematical problems involving the four operations with rational numbers</p>	<p>Reciprocals Multiplicative inverses Rational number Terminating decimal Repeating decimal Estimation Leading digit Mean Median Mode Range</p> <p style="text-align: center;">16 days</p>
	<p>Assessments: Multiple Quizzes Final Test</p>		

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 5: Multi-Step Equations and Inequalities	Chapter 6 Sections 6.1-6.6	<p>Solve real-life and mathematical problems using numerical and algebraic expressions and equations Use properties of operations to generate equivalent expressions</p> <p>7. EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> <p>7. EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.</p> <p>7. EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies</p> <p>7. EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume</p> <p>7. G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p>	Circle Center Radius Diameter Circumference Pi	17 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 6: Ratio, Proportion, and Percent	Chapter 7 Sections 7.1-7.7	<p>Analyze proportional relationships and use them to solve real-world and mathematical problems</p> <p>7. RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $(\frac{1}{2})/(\frac{1}{4})$ miles per hour, equivalently 2 miles per hour.</p> <p>7. RP.2 Recognize and represent proportional relationships between quantities.</p> <p>7. RP.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p> <p>Draw, construct, and describe geometrical figures and describe the relationships between them</p> <p>7. G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p>	Ratio Equivalent Ratios Rate Unit Rate Proportion Cross Products Scale Model Scale Percent Circle Graph Percent of Change Percent of increase Percent of decrease Markup Discount Interest Principal Annual Interest Rate	16 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 7: Angles and Polygons	Chapter 8 Sections 8.1-8.4	<p>Draw, construct, and describe geometrical figures and describe the relationships between them 7. G.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> <p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume 7. G.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</p>	Straight angle Right angle Supplementary angle Complementary angle Vertical angle Perpendicular angle Parallel lines Acute angle Right angle Obtuse angle Equilateral triangle Isosceles Triangle Quadrilateral Trapezoid Parallelogram Rhombus Polygon Regular Polygon Pentagon Hexagon Heptagon Octagon	10 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 8: Measurement, Area, and Volume	Chapter 10 Sections 10.1-10.7	<p>Draw, construct, and describe geometrical figures and describe the relationships between them</p> <p>7. G.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</p> <p>Solve real-life and mathematical problems involving angle measure, area, surface area, and volume</p> <p>7. G.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.</p> <p>7. G.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</p>	Base of Parallelogram Height of parallelogram Bases of trapezoid Height of trapezoid Solid Polyhedron Face Prism Pyramid Cylinder Cone Sphere Edge Vertex Net Surface Area Slant Height Volume	16 days
		<p>Assessments: Multiple Quizzes Final Test</p>		

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Units		Common Core Standards	Vocabulary	Pacing
Unit 9: Statistics and Probability	Chapter 7 Section 7.8	<p>Use random sampling to draw inferences about a population</p> <p>7. SP.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.</p> <p>7. SP.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey Gauge how far off the estimate or prediction might be.</p>	<p>Outcome Event Favorable Outcome Probability of an event Theoretical Probability Experimental Probability Tree Diagram Counting Principle Permutation Factorial Combination Complementary events Unfavorable Outcome Odds Independent Events Dependent Events</p>	16 days
	Chapter 12 Sections 12.4-12.8	<p>Draw informal comparative inferences about two populations</p> <p>7. SP.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.</p> <p>7. SP.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book.</p>		
		<p>Assessments: Multiple Quizzes Final Test</p>		

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	Units	Common Core Standards (cont.)	Vocabulary	Pacing
Unit 9 : Statistics and Probability (cont.)		<p>Investigate chance processes and develop, use, and evaluate probability models</p> <p>7. SP.5 Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.</p> <p>7. SP.6 Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times.</p> <p>7. SP.7 Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p>7. SP.8 Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p>		

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	Units	Common Core Standards	Vocabulary	Pacing
Unit 10: Linear Equations and Graphs	Chapter 11 Sections 11.1-11.7	Not a common core standard until 8 th grade, but will still be included on MEAP Test	Relation Input Output Function Domain Range Scatter Plot Solution Linear Equation Vertical Lines Horizontal Lines x-intercept y-intercept slope Rise Run Slope-Intercept Form	15 days
		Assessments: Multiple Quizzes Final Test		