

Berlin Brothersvalley School District
Berlin Brothersvalley Middle School
7th Grade (Section 1, Section 2) Math Curriculum Framework
Full Year Course

Big Idea(s) for 1st nine weeks	Concept(s) of 1st nine weeks	Competencies of 1st nine weeks	Essential Questions for 1st nine weeks
<p>Ratios and proportional reasoning are essential to understanding slope and linear equations.</p> <p>Fractions represent a multitude of concepts including ratios and proportional reasoning pertaining to algebraic thinking.</p> <p>Percents represent numerical values in a financial format that are essential for understanding real-world monetary decisions.</p>	<p>Students will know...</p> <ul style="list-style-type: none"> ● unit rates represent the rate of change, constant of proportionality, and/or slope ● proportional relationships relating to graphs, tables, and linear equations. ● multiple forms and strategies to manipulate percentages 	<p>Students will be able to...</p> <ul style="list-style-type: none"> ● determine unit rates ● simplify complex fractions and find unit rates ● convert units of measure between derived units to solve problems ● identify proportional and nonproportional relationships ● identify proportional relationships by graphing on the coordinate plane ● apply proportions to solve problems ● identify constant rate of change, or slope, using tables and graphs ● demonstrate direct variation to solve problems ● find percent of a number ● estimate percents using fractions and decimals ● utilize the percent proportion and the percent equation ● find percent of change and percent of error ● solve problems involving sales tax, tips, and markup 	<p>How can you show that two objects are proportional?</p> <p>How can percent help you understand situations involving money?</p>

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<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
Ratios and Proportional Reasoning	25 days	<p>CC.2.1.7.D.1 Analyze proportional relationships and use them to model and solve real-world and mathematical problems.</p> <p>CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.</p>	<p>M07.A-R.1.1.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. Example: If a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{1/2}{1/4}$ miles per hour, equivalently 2 miles per hour.</p> <p>M07.A-R.1.1.2 Determine whether two quantities are proportionally related (e.g., by testing for equivalent ratios in a table, graphing on a coordinate plane and observing whether the graph is a straight line through the origin).</p> <p>M07.A-R.1.1.3 Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>M07.A-R.1.1.4 Represent proportional relationships by equations. Example: If total cost t is proportional to the number n of items purchased at a constant price p, the relationship</p>

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			<p>between the total cost and the number of items can be expressed as $t = pn$.</p> <p>M07.A-R.1.1.5 Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$, where r is the unit rate.</p> <p>M07.A-R.1.1.6 Use proportional relationships to solve multi-step ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease.</p> <p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where $p, q,$ and r are specific rational numbers.</p>
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			<p>Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p> <p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9 \frac{3}{4}$ inches long in the center of a door that is $27 \frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
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<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
Percents	20 days	CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.	<p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p>

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			<p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
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Big Idea(s) for 2nd nine weeks	Concept(s) of 2nd nine weeks	Competencies of 2nd nine weeks	Essential Questions for 2nd nine weeks
<p>Performing mathematical operations on positive and negative integers, fractions, and decimals are foundational skills in mathematics.</p> <p>Representing real-life problems in algebraic form, simplifying equations and inequalities, and solving for one unknown variable provide a base for solving linear functions.</p>	<p>Students will know...</p> <ul style="list-style-type: none"> ● mathematical operations and inverse operations and how each affects positive and negative integers ● mathematical operations and inverse operations and how each affects positive and negative rational numbers ● expressions ● equations and inequalities 	<p>Students will be able to...</p> <ul style="list-style-type: none"> ● calculate integers ● calculate rational numbers ● select and distinguish between properties being used and linear expressions ● apply properties of equality to solve one and two-step equations and inequalities 	<p>What happens when you add, subtract, multiply, and divide integers?</p> <p>What happens when you add, subtract, multiply, and divide fractions?</p> <p>How can you use numbers and symbols to represent mathematical ideas?</p> <p>What does it mean to say two</p>

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			quantities are equal?
<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
Integers	8 days	CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.	<p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100.</p>

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			<p>Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p> <p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
<p style="text-align: center;"><u>Unit/Chapter/Selection of Study</u></p> <p style="text-align: center;">Rational Numbers</p>	<p style="text-align: center;"><u>Approx # of days - % of time</u></p> <p style="text-align: center;">16 days</p>	<p style="text-align: center;"><u>PA Core Standards</u></p> <p>CC.2.1.7.E.1 Apply and extend previous understandings of operations with fractions to operations with rational numbers.</p> <p>CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.</p>	<p style="text-align: center;"><u>Assessment Anchors & Eligible Content</u></p> <p>M07.A-N.1.1.1 Apply properties of operations to add and subtract rational numbers, including real-world contexts.</p> <p>M07.A-N.1.1.2 Represent addition and subtraction on a horizontal or vertical number line.</p> <p>M07.A-N.1.1.3 Apply properties of</p>

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			<p>operations to multiply and divide rational numbers, including real-world contexts; demonstrate that the decimal form of a rational number terminates or eventually repeats.</p> <p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100.</p>
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			<p>Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p> <p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
<p><u>Unit/Chapter/Selection of Study</u></p> <p>Expressions</p>	<p><u>Approx # of days - % of time</u></p> <p>16 days</p>	<p><u>PA Core Standards</u></p> <p>CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.</p> <p>CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.</p>	<p><u>Assessment Anchors & Eligible Content</u></p> <p>M07.B-E.1.1.1 Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients. Example 1: The expression $\frac{1}{2} \cdot (x + 6)$ is equivalent to $\frac{1}{2} \cdot x + 3$. Example 2: The expression $5.3 - y + 4.2$ is equivalent to $9.5 - y$ (or $-y + 9.5$). Example 3: The expression $4w - 10$ is equivalent to $2(2w - 5)$.</p>

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			<p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p> <p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or</p>
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			<p>interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
<p><u>Unit/Chapter/Selection of Study</u></p> <p>Equations and Inequalities</p>	<p><u>Approx # of days - % of time</u></p> <p>5 days (continues into next nine weeks)</p>	<p><u>PA Core Standards</u></p> <p>CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.</p>	<p><u>Assessment Anchors & Eligible Content</u></p> <p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p>

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			<p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p> <p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9 \frac{3}{4}$ inches long in the center of a door that is $27 \frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
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Big Idea(s) for 3rd nine weeks	Concept(s) of 3rd nine weeks	Competencies of 3rd nine weeks	Essential Questions for 3rd nine weeks
<p>Representing real-life problems in algebraic form, simplifying equations and inequalities, and solving for one unknown variable provide a base for solving linear functions.</p> <p>Measuring figures help visualize and manipulate real world objects.</p> <p>Data can be used to make predictions, and graphs can be used to communicate this information effectively.</p>	<p>Students will know...</p> <ul style="list-style-type: none"> ● equations and inequalities ● geometric figures to include lines and angles ● formulas for measuring a variety of figures ● probability and theoretical simulations vs. experimental events ● the types of biased and unbiased samples 	<p>Students will be able to...</p> <ul style="list-style-type: none"> ● apply properties of equality to solve one and two-step equations and inequalities ● classify, create, and manipulate geometric figures, lines and angles ● measure circumference, area, volume, and surface area of two-dimensional and three-dimensional shapes ● calculate probability of simple and compound events ● simulate probability through investigation ● distinguish between independent and dependent events related to probability ● discriminate between unbiased and biased samples and graphs ● analyze graphs to justify accuracy and eliminate misleading presentations of data 	<p>How does geometry help us describe real world objects?</p> <p>How do measurements help us describe real world objects?</p> <p>How can you predict the outcome of future events?</p> <p>How do you know which type of graph to use when displaying data?</p>

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<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
Equations and Inequalities	10 days (continues from prior nine weeks)	CC.2.2.7.B.3 Model and solve real world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.	<p>M07.B-E.2.1.1 Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate. Example: If a woman making \$25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or \$2.50, for a new salary of \$27.50 an hour (or $1.1 \times \\$25 = \\27.50).</p> <p>M07.B-E.2.2.1 Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Example: The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>M07.B-E.2.2.2 Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers, and graph the solution set of the inequality. Example: A salesperson is paid \$50 per week plus \$3 per sale. This week she wants her pay to be at least \$100. Write an inequality for the number of sales the salesperson needs to make and describe the solutions.</p>

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			<p>M07.B-E.2.3.1 Determine the reasonableness of answer(s) or interpret the solution(s) in the context of the problem. Example: If you want to place a towel bar that is $9 \frac{3}{4}$ inches long in the center of a door that is $27 \frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.</p> <p>A1.1.1.4.1 Use estimation to solve problems. CC.2.2.7.B.3</p>
<p style="text-align: center;"><u>Unit/Chapter/Selection of Study</u></p> <p style="text-align: center;">Geometric Figures</p>	<p style="text-align: center;"><u>Approx # of days - % of time</u></p> <p style="text-align: center;">8 days</p>	<p style="text-align: center;"><u>PA Core Standards</u></p> <p>CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.</p> <p>CC.2.3.7.A.2 Visualize and represent geometric figures and describe the relationships between them.</p>	<p style="text-align: center;"><u>Assessment Anchors & Eligible Content</u></p> <p>M07.C-G.2.1.1 Identify and use properties of supplementary, complementary, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.</p> <p>M07.C-G.2.1.2 Identify and use properties of angles formed when two parallel lines are cut by a transversal (e.g., angles may include alternate interior, alternate exterior, vertical, corresponding).</p>

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			<p>M07.C-G.2.2.1 Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided.</p> <p>M07.C-G.2.2.2 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. Formulas will be provided.</p> <p>M07.C-G.1.1.1 Solve problems involving scale drawings of geometric figures, including finding length and area.</p> <p>M07.C-G.1.1.2 Identify or describe the properties of all types of triangles based on angle and side measures.</p> <p>M07.C-G.1.1.3 Use and apply the triangle inequality theorem.</p> <p>M07.C-G.1.1.4 Describe the two-dimensional figures that result from slicing three-dimensional figures. Example: Describe plane sections of right rectangular prisms and right rectangular pyramids.</p>
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<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
<p style="text-align: center;">Measure Figures</p>	<p style="text-align: center;">10 days</p>	<p>CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.</p> <p>CC.2.3.7.A.2 Visualize and represent geometric figures and describe the relationships between them.</p>	<p>M07.C-G.2.1.1 Identify and use properties of supplementary, complementary, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.</p> <p>M07.C-G.2.1.2 Identify and use properties of angles formed when two parallel lines are cut by a transversal (e.g., angles may include alternate interior, alternate exterior, vertical, corresponding).</p> <p>M07.C-G.2.2.1 Find the area and circumference of a circle. Solve problems involving area and circumference of a circle(s). Formulas will be provided.</p> <p>M07.C-G.2.2.2 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. Formulas will be provided.</p> <p>M07.C-G.1.1.1 Solve problems</p>

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			<p>involving scale drawings of geometric figures, including finding length and area.</p> <p>M07.C-G.1.1.2 Identify or describe the properties of all types of triangles based on angle and side measures.</p> <p>M07.C-G.1.1.3 Use and apply the triangle inequality theorem.</p> <p>M07.C-G.1.1.4 Describe the two-dimensional figures that result from slicing three-dimensional figures. Example: Describe plane sections of right rectangular prisms and right rectangular pyramids.</p>
<p><u>Unit/Chapter/Selection of Study</u></p> <p>Probability</p>	<p><u>Approx # of days - % of time</u></p> <p>10 days</p>	<p><u>PA Core Standards</u></p> <p>CC.2.4.7.B.3 Investigate chance processes and develop, use, and evaluate probability models.</p>	<p><u>Assessment Anchors & Eligible Content</u></p> <p>M07.D-S.3.1.1 Predict or determine whether some outcomes are certain, more likely, less likely, equally likely, or impossible (i.e., a probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event).</p> <p>M07.D-S.3.2.1 Determine the</p>

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			<p>probability of a chance event given relative frequency. Predict the approximate relative frequency given the probability. 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>M07.D-S.3.2.2 Find the probability of a simple event, including the probability of a simple event not occurring. Example: What is the probability of not rolling a 1 on a number cube?</p> <p>M07.D-S.3.2.3 Find probabilities of independent compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>A1.2.3.3.1 Find probabilities for compound events (e.g., find probability of red and blue, find probability of red or blue) and represent as a fraction, decimal, or percent.</p>
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7th Grade (Section 1, Section 2) Math Curriculum Framework
Full Year Course

<u>Unit/Chapter/Selection of Study</u>	<u>Approx # of days - % of time</u>	<u>PA Core Standards</u>	<u>Assessment Anchors & Eligible Content</u>
<p style="text-align: center;">Statistics</p>	<p style="text-align: center;">7 days</p>	<p>CC.2.4.7.B.1 Draw inferences about populations based on random sampling concepts.</p> <p>CC.2.4.7.B.2 Draw informal comparative inferences about two populations.</p>	<p>M07.D-S.1.1.1 Determine whether a sample is a random sample given a real-world situation.</p> <p>M07.D-S.1.1.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Example 1: Estimate the mean word length in a book by randomly sampling words from the book. Example 2: Predict the winner of a school election based on randomly sampled survey data.</p> <p>M07.D-S.2.1.1 Compare two numerical data distributions using measures of center and variability. Example 1: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team. This difference is equal to approximately twice the variability (mean absolute deviation) on either team. On a line plot, note the difference between the two distributions of heights. Example 2: Decide whether the words in a chapter of a seventh-grade science book are generally longer than the</p>

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			words in a chapter of a fourth grade science book.
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Big Idea(s) for 4th nine weeks	Concept(s) of 4th nine weeks	Competencies of 4th nine weeks	Essential Questions for 4th nine weeks
<p>Representing real-life problems in algebraic form, simplifying equations and inequalities, and solving for one unknown variable provide a base for solving linear functions.</p> <p>Measuring figures help visualize and manipulate real world objects.</p> <p>Data can be used to make predictions, and graphs can be used to communicate this information effectively.</p>	<p>Students will know...</p> <ul style="list-style-type: none"> ● unit rates and percentages graphically, numerically, and analytically ● algebraic operations for equations and inequalities ● geometric classification in measurement components ● independent and dependent probability and graphic representation 	<p>Students will be able to...</p> <ul style="list-style-type: none"> ● interpret, represent, and compare unit rates and percentages graphically, numerically, and analytically ● manipulate to solve and compare algebraic operations for equations and inequalities ● distinguish geometric classification in measurement components and apply formulas to calculate measurements ● Investigate and critique independent and dependent probability and graphic representation 	<p>How are percents and proportions related?</p> <p>How does performing mathematical operations affect integers and rational numbers and represent them numerically?</p> <p>How does algebra relate to geometry and geometric measurements?</p> <p>How can we predict outcomes of future events and graph them graphically?</p>

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Application, Assessment, and Remediation of Math Skills	45 days	all Standards listed above covered in this unit	all Eligible Content listed above covered in this unit

Standards Legend: Essential Important Supplementary

Revised 12/20/23