

**Grade Level 6**

**As PA transitions to the PA Common Core Standards, the focus of GRADE 6 instruction needs to shift:**

<b>Less emphasis on:</b>	<b>More emphasis on:</b>
	<p><b><u>Standards for Mathematical Practice</u></b></p> <ul style="list-style-type: none"> <li>Describe mathematical “habits of mind”</li> <li>Standards for mathematical proficiency: reasoning, problem solving, modeling, decision making, and engagement</li> <li>Connect with content standards in each grade</li> </ul>
<p><b><u>Numbers and Operations</u></b></p> <ul style="list-style-type: none"> <li>Modeling and comparing values of whole numbers, mixed numbers, fractions and decimals</li> <li>Representing whole numbers, fractions, mixed numbers, decimals, and percents in equivalent forms</li> <li>Applying place value concepts to order and compare decimals, fractions, and mixed numbers</li> <li>Applying properties to evaluate numerical expressions</li> <li>Estimating solutions of problems involving whole numbers and decimals</li> </ul>	<p><b><u>Numbers and Operations</u></b></p> <ul style="list-style-type: none"> <li>Computing fluently with multi-digit numbers and finding common factors and common multiples (CC.2.1.6.E.2).</li> <li>Extending previous understandings of arithmetic to algebraic expressions and applying the properties of operations to generate equivalent expressions (CC.2.2.6.B.1).</li> <li>Using visual models to conceptualize multiplying and dividing fractions (CC.2.1.6.E.1).</li> <li>Developing an understanding of statistical variability/ Ratio concepts/ratio reasoning to solve real world problems/ratio relationships/equivalent ratio tables/plotting on coordinate plane/solving unit rate problems (CC.2.1.6.D.1).</li> </ul>
<p><b><u>Measurement</u></b></p> <ul style="list-style-type: none"> <li>Measuring length, perimeter, area; measuring angles with a protractor in isolation</li> <li>Converting metric and customary measurements</li> </ul>	<p><b><u>Measurement</u></b></p> <ul style="list-style-type: none"> <li>Using nets to find surface area and applying in a real-world context (CC.2.3.6.A.1).</li> <li>Using ratio reasoning to convert measurement units (CC.2.1.6.D.1).</li> </ul>
<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>Identifying and classifying 1,2, and 3 dimensional shapes</li> <li>Predicting and describing translations, rotations, and</li> </ul>	<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>Understanding signs of numbers of 3 dimensional shapes in four quadrants of the coordinate plane (CC.2.3.6.A.1).</li> <li>Finding areas of geometric shapes through composition and decomposition in the context of real-world problems</li> </ul>

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### As PA transitions to the PA Common Core Standards, the focus of GRADE 6 instruction needs to shift:

<p>reflections</p> <ul style="list-style-type: none"> <li>Identifying location of points on a 2-dimensional coordinate system</li> <li>Identifying parts of right triangles</li> </ul>	<p>(CC.2.3.6.A.1).</p> <ul style="list-style-type: none"> <li>Using coordinates in the coordinate plane to find the length of a side of a polygon (CC.2.3.6.A.1).</li> </ul>
<p><b>Algebraic Concepts</b></p> <ul style="list-style-type: none"> <li>Forming a rule for whole number patterns/Determining a function rule from a table or graph</li> </ul>	<p><b>Algebraic Concepts</b></p> <ul style="list-style-type: none"> <li>Writing and evaluating numerical expressions involving whole-number exponents, using variables, and order of operations in the context of real-world problems (CC.2.2.6.B.2).</li> <li>Reasoning about and solving one-variable equations and inequalities/Using substitution (CC.2.2.6.B.3).</li> <li>Applying and extending previous understandings of numbers to the system of rational numbers (i.e. positive and negative numbers in the real world (CC.2.1.6.E.4).</li> <li>Ordering rational numbers in the real world (CC.2.1.6.D.1).</li> <li>Understanding absolute value/positive and negative numbers/rational numbers conceptually (CC.2.1.6.E.4).</li> </ul>
<p><b>Data Analysis &amp; Probability</b></p> <ul style="list-style-type: none"> <li>Probability and Predictions: Estimating outcomes and likelihood</li> <li>Gathering and selecting an appropriate format to display data</li> </ul>	<p><b>Data Analysis &amp; Probability</b></p> <ul style="list-style-type: none"> <li>Recognizing statistical variability (CC.2.4.6.B.1).</li> <li>Analyzing the overall shape of data and its meaning (CC.2.4.6.B.1).</li> <li>Analyzing the measures of center and measures of variation (CC.2.4.6.B.1).</li> </ul>

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**Grade 7**

**As PA transitions to the PA Common Core Standards, the focus of GRADE 7 instruction needs to shift:**

<b>Less emphasis on:</b>	<b>More emphasis on:</b>
	<p><b><u>Standards for Mathematical Practice</u></b></p> <ul style="list-style-type: none"> <li>• Describe mathematical "habits of mind"</li> <li>• Standards for mathematical proficiency: reasoning, problem solving, modeling, decision making, and engagement</li> <li>• Connect with content standards in each grade</li> </ul>
<p><b><u>Numbers &amp; Operations</u></b></p> <ul style="list-style-type: none"> <li>• Representing and using numbers in equivalent forms</li> <li>• Modeling and comparing rational numbers</li> <li>• Applying place value concepts, GCF and LCM</li> <li>• Operations with integers</li> <li>• Using order of operations</li> <li>• Estimating solutions</li> </ul>	<p><b><u>Numbers &amp; Operations</u></b></p> <ul style="list-style-type: none"> <li>• Analyzing proportional relationships and represent proportional relationships by equations (CC.2.1.7.D.1)</li> <li>• Using proportional relationships to solve multi-step problems (CC.2.1.7.D.1)</li> <li>• Unit rates associated with fractions (CC.2.1.7.E.1)</li> <li>• Operations with rational numbers (CC.2.1.7.E.1)</li> <li>• Convert rational numbers to a decimal using long division (CC.2.1.7.E.1)</li> </ul>
<p><b><u>Measurement</u></b></p> <ul style="list-style-type: none"> <li>• Using conversions to add &amp; subtract</li> </ul>	<p><b><u>Measurement</u></b></p>
<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>• Properties of 1-, 2-, and 3-dimensional shapes and classifying 2- and 3-dimensional shapes</li> <li>• Predicting the result of a translation, rotation and/or reflection</li> <li>• Locating/plotting points on the coordinate plane</li> <li>• Predicting the result of a translation, rotation</li> </ul>	<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>• Real life mathematical problems involving angle measure, area, surface area, and volume (CC.2.3.7.A.1)</li> <li>• Knowing the formulas for area &amp; circumference of a circle and use them to solve problems (CC.2.3.7.A.2)</li> <li>• Reproducing scale drawings using a different</li> </ul>

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<p>and/or reflection</p>	<p>scale (CC.2.3.7.A.2)</p> <ul style="list-style-type: none"> <li>Using scale drawing to compute actual lengths and areas (CC.2.3.7.A.2)</li> </ul>
<p><b><u>Algebraic Concepts</u></b></p> <ul style="list-style-type: none"> <li>Properties of numbers (commutative, Associative, identity, distributive)</li> <li>Extending/finding a missing element of a pattern</li> <li>Determining function rules from patterns</li> <li>Describing the relationship of data involving constant rate of change</li> </ul>	<p><b><u>Algebraic Concepts</u></b></p> <ul style="list-style-type: none"> <li>Using properties of operations to write equivalent expressions (CC.2.2.7.B.1)</li> <li>Solving multi-step, real-life mathematical problems using rational numbers (CC.2.2.7.B.2)</li> <li>Solving word problems using equations and inequalities (CC.2.2.7.B.2)</li> </ul>
<p><b><u>Data Analysis &amp; Probability</u></b></p> <ul style="list-style-type: none"> <li>Organizing and analyzing data in different types of displays</li> <li>Interpreting trends based on a graph</li> <li>Finding the probability of simple events</li> </ul>	<p><b><u>Data Analysis &amp; Probability</u></b></p> <ul style="list-style-type: none"> <li>Using random sampling to draw inferences (CC.2.4.7.B.1)</li> <li>Measure of center and variability with random samples (CC.2.4.7.B.2)</li> <li>Drawing informal comparative inferences about two populations (CC.2.4.7.B.2)</li> <li>Developing, using and evaluating probability models (CC.2.4.7.B.3)</li> <li>Finding the probability of compound events (CC.2.4.7.B.3)</li> </ul>

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**Grade 8**

**As PA transitions to the PA Common Core Standards, the focus of GRADE 8 instruction needs to shift:**

<b>Less emphasis on:</b>	<b>More emphasis on:</b>
	<p><b><u>Standards for Mathematical Practice</u></b></p> <ul style="list-style-type: none"> <li>• Describe mathematical “habits of mind”</li> <li>• Standards for mathematical proficiency: reasoning, problem solving, modeling, decision making, and engagement</li> <li>• Connect with content standards in each grade</li> </ul>
<p><b><u>Numbers &amp; Operations</u></b></p> <ul style="list-style-type: none"> <li>• Modeling and comparing rational numbers</li> <li>• Using ratio and proportion</li> <li>• Applying GCF and LCM</li> <li>• Operations with rational numbers</li> <li>• Evaluating numerical expressions</li> </ul>	<p><b><u>Numbers &amp; Operations</u></b></p> <ul style="list-style-type: none"> <li>• Working with radicals and integer exponents (CC.2.2.8.B.1)</li> <li>• Operations with and using numbers in scientific notation (CC.2.2.8.B.1)</li> <li>• Using rational numbers to approximate irrational numbers (CC.2.2.8.E.4)</li> </ul>
<p><b><u>Measurement</u></b></p> <ul style="list-style-type: none"> <li>• Performing conversions within the metric and customary system</li> </ul>	<p><b><u>Measurement</u></b></p>
<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>• Finding area, surface area and volume</li> </ul>	<p><b><u>Geometry</u></b></p> <ul style="list-style-type: none"> <li>• Understanding congruence and similarity using rotations, reflections and translations (CC.2.3.8.A.2)</li> <li>• Using informal arguments to establish facts about angles (CC.2.3.8.A.2)</li> </ul>

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**As PA transitions to the PA Common Core Standards, the focus of GRADE 8 instruction needs to shift:**

<p><b><u>Algebraic Concepts</u></b></p> <ul style="list-style-type: none"> <li>• Finding missing elements in patterns</li> <li>• Using the concept of equality to demonstrate an understanding of the inverse properties of numbers &amp; the properties of equality</li> </ul>	<p><b><u>Algebraic Concepts</u></b></p> <ul style="list-style-type: none"> <li>• Defining, evaluating and comparing functions (CC.2.2.8.C.1)</li> <li>• Using &amp; solving linear equations with rational coefficients (CC.2.2.8.B.3)</li> <li>• Constructing function models (function notation is not required) (CC.2.2.8.C.2)</li> <li>• Comparing two functions represented in different ways (CC.2.2.8.C.1)</li> <li>• Interpreting rate as slope (CC.2.2.8.C.1)</li> <li>• Using equations of linear models to solve problems (CC.2.2.8.B.2)</li> <li>• Analyzing and solving systems of linear equations (CC.2.2.8.B.3)</li> </ul>
<p><b><u>Data Analysis &amp; Probability</u></b></p> <ul style="list-style-type: none"> <li>• Using sampling techniques to gather data</li> <li>• Comparing data sets graphically and numerically</li> <li>• Stem-and-leaf &amp; box-and-whisker plots</li> <li>• Effects of extreme values</li> <li>• Finding probability, combinations, and permutations</li> <li>• Finding missing elements in patterns</li> </ul>	<p><b><u>Data Analysis &amp; Probability</u></b></p> <ul style="list-style-type: none"> <li>• Construct and interpret scatter plots for bivariate data (CC.2.4.8.B.2)</li> <li>• Informally fit a line to data that has a linear association (CC.2.4.8.B.2)</li> <li>• Displaying frequencies and relative frequencies in a two way table and understanding patterns of association (CC.2.4.8.B.2)</li> <li>• Analyzing and solving systems of linear equations (CC.2.4.8.B.2)</li> </ul>

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