

**PA Core Standards For Mathematics
Curriculum Framework
Grade Level 6**

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
6	<p>Mathematical relationships among numbers can be represented, compared, and communicated.</p> <p>Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.</p> <p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p> <p>Patterns exhibit relationships that can be extended, described, and generalized.</p>	<p>How is mathematics used to quantify, compare, represent and model numbers?</p> <p>How can mathematics support effective communication?</p> <p>How are relationships represented mathematically?</p> <p>How can expressions, equations and inequalities be used to quantify, solve, model and/or analyze mathematical situations?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p> <p>How can patterns be used to describe relationships in mathematical situations?</p>	Ratios, Proportions, and Percent	<p>Represent ratio relationships in various forms.</p> <p>Determine unit rates in context.</p> <p>Interpret and compute quotients of fraction.</p> <p>Solve problems using ratio and rate reasoning.</p> <p>Convert measurement units using equivalent ratios.</p>	<p>CC.2.1.6.D.1</p> <p>CC.2.1.6.E.1</p>	<p>M06.A-R.1.1.1</p> <p>M06.A-R.1.1.2</p> <p>M06.A-R.1.1.3</p> <p>M06.A-R.1.1.4</p> <p>M06.A-R.1.1.5</p> <p>M06.A-R.1.1.3</p> <p>M06.A-R.1.1.4</p> <p>M06.A-R.1.1.5</p> <p>M06.A-N.1.1.1</p>	<p>Absolute value</p> <p>Algebraic expressions</p> <p>Box and whisker plots</p> <p>Coefficient</p> <p>Compound polygon</p> <p>Dependent variable</p> <p>Distributive property</p> <p>Dot plots</p> <p>Exponent</p> <p>Greatest Common Factor</p> <p>Independent variable</p> <p>Inequality</p> <p>Integer</p> <p>Interquartile range</p> <p>Irregular Polygon</p> <p>Least Common Multiple</p> <p>Mean</p> <p>Mean absolute deviation</p>
6	<p>Mathematical relationships among numbers can be represented, compared, and communicated.</p> <p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p>	<p>How is mathematics used to quantify, compare, represent, and model numbers?</p> <p>How can mathematics support effective communication?</p> <p>What does it mean to estimate or analyze numerical quantities?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p>	Number Theory Concepts and Operations	<p>Solve problems and compute fluently with whole numbers and decimals.</p> <p>Find common multiples and factors including greatest common factor and least common multiple.</p> <p>Use the distributive property to express a sum of two numbers.</p>	<p>CC.2.1.6.E.2</p> <p>CC.2.1.6.E.3</p>	<p>M06.A-N.2.1.1</p> <p>M06.A-N.2.2.1</p> <p>M06.A-N.2.2.1</p> <p>M06.A-N.2.2.2</p>	
6	<p>Mathematical relationships among numbers can be represented, compared, and communicated.</p>	<p>How is mathematics used to quantify, compare, represent, and model numbers?</p>	Integers and Other Rational Numbers	<p>Use positive and negative numbers to represent quantities in real world contexts.</p>	CC.2.1.6.E.4	<p>M06.A-N.3.1.1</p> <p>M06.A-N.3.1.2</p> <p>M06.A-N.3.1.3</p> <p>M06.A-N.3.2.1</p>	

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	<p>Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.</p> <p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p>	<p>How can mathematics support effective communication?</p> <p>How are relationships represented mathematically?</p> <p>How can expressions, equations and inequalities be used to quantify, solve, model and/or analyze mathematical situations?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p>		<p>Plot integers and other rational numbers on a number line and on a coordinate graph.</p> <p>Interpret the opposite and absolute value of an integer as its distance from zero on a number line</p> <p>Compare and order rational numbers.</p>		<p>M06.A-N.3.2.2 M06.A-N.3.2.3</p>	
6	<p>Mathematical relationships among numbers can be represented, compared, and communicated.</p> <p>Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.</p> <p>Patterns exhibit relationships that can be extended, described, and generalized.</p>	<p>How is mathematics used to quantify, compare, represent, and model numbers?</p> <p>How are relationships represented mathematically?</p> <p>How can mathematics support effective communication?</p> <p>How can recognizing repetition or regularity assist in solving problems more efficiently?</p>	Algebraic Expressions	<p>Write, identify and evaluate numerical expressions involving exponents.</p> <p>Write, read and evaluate algebraic expressions.</p> <p>Apply the properties of operations to generate equivalent expressions.</p>	CC.2.2.6.B.1	<p>M06.B-E.1.1.1 M06.B-E.1.1.2 M06.B-E.1.1.3 M06.B-E.1.1.4 M06.B-E.1.1.5</p>	
6	<p>Mathematical relationships among numbers can be represented, compared, and communicated.</p> <p>Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.</p>	<p>How is mathematics used to quantify, compare, represent, and model numbers?</p> <p>How can mathematics support effective communication?</p> <p>How are relationships represented mathematically?</p>	Algebraic Equations	<p>Represent and analyze quantitative relationships between Independent and dependent variables.</p> <p>Solve and interpret one variable equations or inequalities in real world and mathematical problems.</p>	<p>CC.2.2.6.B.2 CC.2.2.6.B.3</p>	<p>M06.B-E.2.1.1 M06.B-E.2.1.2 M06.B-E.2.1.3 M06.B-E.2.1.4 M06.B-E.3.1.1 M06.B-E.3.1.2</p>	

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	<p>Patterns exhibit relationships that can be extended, described, and generalized.</p> <p>Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.</p>	<p>How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?</p> <p>How can recognizing repetition or regularity assist in solving problems more efficiently?</p> <p>How can data be organized and represented to provide insight into the relationship between quantities?</p>					
6	<p>Patterns exhibit relationships that can be extended, described, and generalized.</p> <p>Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.</p>	<p>How can recognizing repetition or regularity assist in solving problems more efficiently?</p> <p>How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems?</p> <p>How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?</p> <p>How can geometric properties and theorems be used to describe, model, and analyze situations?</p>	Area, Surface Area, and Volume	<p>Determine the area of triangles, quadrilaterals, irregular polygons and compound polygons.</p> <p>Calculate the area of a polygon on a plane given the coordinates of the vertices.</p> <p>Find volumes of right rectangular prisms with fractional edge lengths.</p> <p>Use nets to find surface area of 3 – dimensional figures.</p>	CC.2.3.6.A.1	<p>M06.C-G.1.1.1</p> <p>M06.C-G.1.1.2</p> <p>M06.C-G.1.1.3</p> <p>M06.C-G.1.1.4</p> <p>M06.C-G.1.1.5</p> <p>M06.C-G.1.1.6</p>	
6	<p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p> <p>Mathematical relations and</p>	<p>What does it mean to estimate or analyze numerical quantities?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p> <p>How can data be organized and represented to provide insight into</p>	Data and Distributions	<p>Display data in dot plots, histograms and box-and-whisker plots.</p> <p>Determine quantitative measures of center and variability.</p>	CC.2.4.6.B.1	<p>M06.D-S.1.1.1</p> <p>M06.D-S.1.1.2</p> <p>M06.D-S.1.1.3</p> <p>M06.D-S.1.1.4</p>	

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	<p>functions can be modeled through multiple representations and analyzed to raise and answer questions.</p> <p>Data can be modeled and used to make inferences.</p>	<p>the relationship between quantities?</p> <p>How does the type of data influence the choice of display?</p> <p>How can probability and data analysis be used to make predictions?</p>		<p>Choose the appropriate measure of center and variability for a set of data.</p>			

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