

**PA Core Standards For Mathematics
Curriculum Framework
Grade Level 1**

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
1	<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>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>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>	Numerical Sequence	<p>Count to 120, starting at any number less than 120.</p> <p>Read and write numerals up to 120 and represent a number of objects with a written numeral.</p>	CC.2.1.1.B.1		Addend Addition Analog Circle Compare compose/ Cone Counting on Cube Cylinder Data decompose Equal to Fourths Fractions – Greater than Half circles Half-hour Halves Hour Length Less than Making ten Ones Place value Quarter-circles Quarters Rectangle Rectangular Prism Square Subtraction Sum Tens Trapezoids Triangle
1	Mathematical relationships among numbers can be represented, compared, and	How is mathematics used to quantify, compare, represent, and model numbers?	Place Value	Compare two two-digit numbers based on meanings of the tens and ones digits,	CC.2.1.1.B.2 CC.2.1.1.B.3		

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	<p>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 can mathematics support effective communication?</p> <p>How are relationships represented mathematically?</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 recognizing repetition or regularity assist in solving problems more efficiently?</p>		<p>recording the results of comparisons with the symbols $>$, $=$, and $<$.</p> <p>Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10 using concrete models or drawings. Relate the strategy to a written method and explain the reasoning used.</p> <p>Subtract multiples of 10 in the range 10-90, using concrete models or drawings. Relate the strategy to a written method and explain the reasoning used.</p>			
1	<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 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>How can recognizing repetition or regularity assist in solving problems more efficiently?</p>	Addition and Subtraction	<p>Use addition and subtraction within 20 to solve word problems by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.</p> <p>Add and subtract within 20. Use strategies such as counting on; making ten; decomposing a number leading to a ten; using the relationship between addition and subtraction and creating equivalent but easier or known sums.</p> <p>Solve word problems that call for addition of three whole numbers whose sum is less than</p>	CC.2.2.1.A.1		

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				or equal to 20.			
1	<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 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>How can patterns be used to describe relationships in mathematical situations?</p>	Properties of Operations	<p>Apply properties of operations as strategies to add and subtract (commutative property of addition; associative property of addition).</p> <p>Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8.</p>	CC.2.2.1.A.2		
1	<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>	Two – and Three – Dimensional	<p>Compose two and three-dimensional shapes and distinguish between attributes.</p> <p>Build and draw shapes to possess attributes.</p>	CC.2.3.1.A.1		

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1	<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 patterns be used to describe relationships in mathematical situations?</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>	Fractions	<p>Partition circles and rectangles into two and four equal shares. Understand that decomposing into more equal shares creates smaller shares.</p>	CC.2.3.1.A.2		
1	<p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p> <p>Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.</p>	<p>What does it mean to estimate or analyze numerical quantities?</p> <p>When is it appropriate to estimate versus calculate?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p> <p>Why does “what” we measure influence “how” we measure?</p> <p>In what ways are the mathematical attributes of objects or processes measured, calculated and/or</p>	Measurement	<p>Order three objects by length; compare the lengths of two objects indirectly by using a third object.</p> <p>Use standard and non-standard units of measure to express the length of an objects a whole number of length units.</p> <p>Understand that the length measurement of an object is the number of same-size length units.</p> <p>Understand that the length measurement of an object is</p>	CC.2.4.1.A.1		

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		<p>interpreted?</p> <p>How precise do measurements and calculations need to be?</p>		the number of same-size length units.			
1	<p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p>	<p>What does it mean to estimate or analyze numerical quantities?</p> <p>When is it appropriate to estimate versus calculate?</p> <p>What makes a tool and/or strategy appropriate for a given task?</p> <p>How precise do measurements and calculations need to be?</p>	Time	Tell and write time in hours and half hours using analog and digital clocks.	CC.2.4.1.A.2		
1	<p>Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.</p> <p>Mathematical relations and 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>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>Why does “what” we measure influence “how” we measure?</p> <p>How can data be organized and represented to provide insight into 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>	Represent and Interpret Data	Organize, represent, and interpret data with up to three categories. Ask and answer questions about the data.	CC.2.4.1.A.4		