PA Core Standards For Mathematics
Curriculum Framework
Grade Level 1

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
1	Mathematical relationships among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.	How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How are relationships represented mathematically? What does it mean to estimate or analyze numerical quantities? What makes a tool and/or strategy appropriate for a given task?	Numerical Sequence	Count to 120, starting at any number less than 120. Read and write numerals up to 120 and represent a number of objects with a written numeral.	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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	communicated. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. Patterns exhibit relationships that can be extended, described, and generalized.	How can mathematics support effective communication? How are relationships represented mathematically? What does it mean to estimate or analyze numerical quantities? What makes a tool and/or strategy appropriate for a given task? How can recognizing repetition or regularity assist in solving problems more efficiently?		recording the results of comparisons with the symbols >, =, and <. 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. 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.			
1	Mathematical relationships among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. Patterns exhibit relationships that can be extended, described, and generalized.	How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How are relationships represented mathematically? How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently?	Addition and Subtraction	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. 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. Solve word problems that call for addition of three whole numbers whose sum is less than	CC.2.2.1.A.1		

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				or equal to 20.			
1	Mathematical relationships among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. Patterns exhibit relationships that can be extended, described, and generalized.	How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How are relationships represented mathematically? How can expressions, equations and inequalities be used to quantify, solve, model, and/or analyze mathematical situations? How can patterns be used to describe relationships in mathematical situations?	Properties of Operations	Apply properties of operations as strategies to add and subtract (commutative property of addition; associative property of addition). Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.	CC.2.2.1.A.2		
1	Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.	How can recognizing repetition or regularity assist in solving problems more efficiently? How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving? How can geometric properties and theorems be used to describe, model, and analyze situations?	Two – and Three – Dimensional	Compose two and three-dimensional shapes and distinguish between attributes. Build and draw shapes to possess attributes.	CC.2.3.1.A.1		

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1	Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.	How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently? How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve problems? How can the application of the attributes of geometric shapes support mathematical reasoning and problem solving?	Fractions	Partition circles and rectangles into two and four equal shares. Understand that decomposing into more equal shares creates smaller shares.	CC.2.3.1.A.2		
1	Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.	What does it mean to estimate or analyze numerical quantities? When is it is appropriate to estimate versus calculate? What makes a tool and/or strategy appropriate for a given task? Why does "what" we measure influence "how" we measure? In what ways are the mathematical attributes of objects or processes measured, calculated and/or	Measurement	Order three objects by length; compare the lengths of two objects indirectly by using a third object. Use standard and non-standard units of measure to express the length of an objects a whole number of length units. Understand that the length measurement of an object is the number of same-size length units. Understand that the length measurement of an object is	CC.2.4.1.A.1		

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		interpreted? How precise do measurements and calculations need to be?		the number of same-size length units.			
1	Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.	What does it mean to estimate or analyze numerical quantities? When is it is appropriate to estimate versus calculate? What makes a tool and/or strategy appropriate for a given task? How precise do measurements and calculations need to be?	Time	Tell and write time in hours and half hours using analog and digital clocks.	CC.2.4.1.A.2		
1	Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions. Data can be modeled and used to make inferences.	What does it mean to estimate or analyze numerical quantities? What makes a tool and/or strategy appropriate for a given task? Why does "what" we measure influence "how" we measure? How can data be organized and represented to provide insight into the relationship between quantities? How does the type of data influence the choice of display? How can probability and data analysis be used to make predictions?	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		

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