PA Core Standards For Mathematics
Curriculum Framework
Grade Level 3

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
3	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. 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? What does it mean to estimate or analyze numerical quantities? What makes a tool and/or strategy appropriate for a given task? When is it is appropriate to estimate versus calculate? How can patterns be used to describe relationships in mathematical situations?	Place Value and Properties of Operations	Perform multi-digit arithmetic. Demonstrate fluency of addition and subtraction. Round whole numbers to the nearest ten or hundred.	CC.2.1.3.B.1	M03.A-T.1.1.1 M03.A-T.1.1.2 M03.A-T.1.1.3 M03.A-T.1.1.4	Area Denominator Division Equivalent fractions Estimate Fraction Linear Liquid Volume Mass Numerator Pattern Pentagon Perimeter Pictograph Polygon Quadrilateral Rhombus Round Square Unit Tally Chart Temperature
3	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?	Fractions	Develop an understanding of fractions as numbers. Represent fractions on a number line. Represent and generate equivalent fractions. Compare fractions with the same numerator or same denominator.	CC.2.1.3.C.1	M03.A-F.1.1.1 M03.A-F.1.1.2 M03.A-F.1.1.3 M03.A-F.1.1.4 M03.A-F.1.1.5	
3	Mathematical relationships	How is mathematics used to quantify,	Multiplication	Demonstrate an understanding	CC.2.2.3.A.1	M03.B-O.1.1.1	

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
	among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.	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?	and Division	of properties of multiplication. Demonstrate an understanding of the relationship between multiplication and division. Demonstrate fluency.	CC.2.2.3.A.2 CC.2.2.3.A.3	M03.B-O.1.1.2 M03.B-O.1.2.1 M03.B-O.1.2.2 M03.B-O.2.1.1 M03.B-O.2.1.2 M03.B-O.2.2.1	
3	Mathematical relationships among numbers can be represented, compared, and communicated. Patterns exhibit relationships that can be extended, described, and generalized. 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.	How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or regularity assist in solving problems more efficiently? How can data be organized and represented to provide insight into the relationship between quantities? How can probability and data analysis be used to make predictions?	Patterns	Represent and solve problems. Identify and explain patterns in arithmetic (including addition and subtraction).	CC.2.2.3.A.4	M03.B-O.3.1.1 M03.B-O.3.1.2 M03.B-O.3.1.3 M03.B-O.3.1.4 M03.B-O.3.1.5 M03.B-O.3.1.6 M03.B-O.3.1.7	
3	Patterns exhibit relationships that can be extended, described, and generalized. Geometric relationships can	How can patterns be used to describe relationships in mathematical situations? How can recognizing repetition or	Two- and Three-Dimensional Figures	Identify and classify shapes and their attributes. Compare shapes.	CC.2.3.3.A.1	M03.C-G.1.1.1 M03.C-G.1.1.2	

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
	be described, analyzed, and classified based on spatial reasoning and/or visualization.	regularity assist in solving problems more efficiently? 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?					
3	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? How can geometric properties and theorems be used to describe, model, and analyze situations?	Fractions and Area	Partition two-dimensional shapes into equal parts. Express the area of a partition as a unit fraction of the whole.	CC.2.3.3.A.2	M03.C-G.1.1.3	
3	Numerical quantities,	What does it mean to estimate or	Measuremen	Solve problems.	CC.2.4.3.A.1	M03.D-M.1.2.1	

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
	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.	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 interpreted? How precise do measurements and calculations need to be?	t	Make estimations. Determine the area of a rectangle as it relates to multiplication and addition. Determine perimeter or side lengths of various polygons. Distinguish between linear and area measurements.	CC.2.4.3.A.5 CC.2.4.3.A.6	M03.D-M.1.2.2 M03.D-M.1.2.3 M03.D-M.3.1.1 M03.D-M.3.1.2 M03.D-M.4.1.1	
3	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? How precise do measurements and calculations need to be?	Time	Solve problems. Make estimations. Tell and write time to nearest minute. Calculate time intervals.	CC.2.4.3.A.2	M03.D-M.1.1.1 M03.D-M.1.1.2	
3	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-	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	Money (Coins and Bills)	Solve problems. Make estimations. Make change using combination of coins and bills.	CC.2.4.3.A.3	M03.D-M.1.3.1 M03.D-M.1.3.2 M03.D-M.1.3.3	

OCT 2016

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
	customary units of measure.	calculations need to be?					
3	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? When is it is appropriate to estimate versus calculate? 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? What makes a tool and/or strategy appropriate for a given task?	Data Displays	Solve problems. Make estimations. Represent and interpret data using various displays.	CC.2.4.3.A.4	M03.D-M.2.1.1 M03.D-M.2.1.2 M03.D-M.2.1.3 M03.D-M.2.1.4	