PA Core Standards For Mathematics
Curriculum Framework
Grade Level 5

Grade	Big Idea	Essential Questions	Concepts	Competencies	Standard	Eligible Content	Vocabulary
5	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? When is it is appropriate to estimate versus calculate? What makes a tool and/or strategy appropriate for a given task? How can patterns be used to describe relationships in mathematical situations?	Place Value and Properties of Operations	Demonstrate an understanding of rounding as it pertains to whole numbers and decimals. Read, write and compare decimals. Use whole numbers and decimals to compute accurately.	CC.2.1.5.B.1 CC.2.1.5.B.2	M05.A-T.1.1.1 M05.A-T.1.1.2 M05.A-T.1.1.3 M05.A-T.1.1.4 M05.A-T.1.1.5 M05.A-T.2.1.1 M05.A-T.2.1.2 M05.A-T.2.1.3	Braces Brackets Coordinate Plane Cubic Units Decimal Place Value (through thousandths) Measurement Systems Measurement Units Numerical Expressions Order of Operations Origin Parentheses Scaling (resizing) Unit Fraction Volume X-axis X-coordinate Y-axis Y-coordinate

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5	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	Add, Subtract, Multiply and Divide fractions to solve problems. Explain operations as they pertain to fractions.	CC.2.1.5.C.1 CC.2.1.5.C.2	M05.A-F.1.1.1 M05.A-F.2.1.1 M05.A-F.2.1.2 M05.A-F.2.1.3 M05.A-F.2.1.4	
5	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? When is it is appropriate to estimate versus calculate?	Decimals	Read, write and compare decimals. Use whole numbers and decimals to compute accurately.	CC.2.1.5.B.2	M05.A-T.2.1.1 M05.A-T.2.1.2 M05.A-T.2.1.3	
5	Mathematical relationships among numbers can be represented, compared, and communicated.	How is mathematics used to quantify, compare, represent, and model numbers?	Numerical Expressions	Write and interpret numerical expressions.	CC.2.2.5.A.1	M05.B-O.1.1.1 M05.B-O.1.1.2	

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	Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	How can mathematics support effective communication? How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?					
5	Mathematical relationships among numbers can be represented, compared, and communicated. Mathematical relationships can be represented as expressions, equations, and inequalities in mathematical situations.	How is mathematics used to quantify, compare, represent, and model numbers? How can mathematics support effective communication? How can expressions, equations, and inequalities be used to quantify, solve, model, and/or analyze mathematical situations?	Order of Operations	Evaluate expressions using the order of operations.	CC.2.2.5.A.1	M05.B-O.1.1.1 M05.B-O.1.1.2	
5	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 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 does the type of data influence the choice of display? How can probability and data analysis be used to make predictions?	Patterns	Generate, analyze and compare patterns.	CC.2.2.5.A.4	M05.B-O.1.1.2 M05.B-O.2.1.1 M05.B-O.2.1.2	
5	Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or	How are spatial relationships, including shape and dimension, used to draw, construct, model, and represent real situations or solve	Coordinate Plane	Describe and interpret points given an ordered pair.	CC.2.3.5.A.1	M05.C-G.1.1.1 M05.C-G.1.1.2	

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	visualization.	problems? How can geometric properties and theorems be used to describe, model, and analyze situations?		Plot points in quadrant I. Describe and interpret points given an ordered pair. Identify parts of a coordinate grid.			
5	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 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-Dimensional Figures	Classify two-dimensional figures based on their properties.	CC.2.3.5.A.2	M05.C-G.2.1.1	
5	Geometric relationships can be described, analyzed, and classified based on spatial reasoning and/or visualization.	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?	Volume and Three-Dimensional Solids	Apply concepts of volume to solve problems. Relate volume to multiplication and to addition.	CC.2.4.5.A.5	M05.D-M.3.1.1 M05.D-M.3.1.2	
5	Numerical quantities, calculations, and measurements can be	What does it mean to estimate or analyze numerical quantities?	Measurement	Solve problems using simple conversions.	CC.2.4.5.A.1	M05.D-M.1.1.1	

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	estimated or analyzed by using appropriate strategies and tools. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.	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?					
5	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? 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?	Data Displays	Organize and display data in order to answer questions. Represent and interpret data using appropriate scale. Solve problems involving computation with fractions using information obtained from data displays.	CC.2.4.5.A.2 CC.2.4.5.A.4	M05.D-M.2.1.2 M05.D-M.2.1.1	
5	Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies	What makes a tool and/or strategy appropriate for a given task? In what ways are the mathematical attributes of objects or processes measured, calculated, and/or	Volume Three-Dimensional Solids	Apply concepts of volume to solve problems. Relate volume to multiplication and to addition.	CC.2.4.5.A.4 CC.2.4.5.A.5	M05.D-M.2.1.1 M05.D-M.3.1.1 M05.D-M.3.1.2	

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	and tools. Measurement attributes can be quantified, and estimated using customary and non-customary units of measure.	interpreted?					