

I CAN Learn [®] Lesson #	I CAN Learn [®] Lesson Title	Pre-requisites	I CAN Learn [®] Lesson Description
Unit 1 Number Operations			
MPA-001	Identifying, Comparing, and Ordering Whole Numbers Through Billions		Identify, compare, and order whole numbers up to the billions place by using a place value chart to compare the digits in each place value position. Use symbols of equality and inequality to compare whole numbers to the billions.
MPA-002	Adding, Subtracting, Multiplying, and Dividing Whole Numbers		Add, subtract, multiply, and divide whole numbers. Identify and state the commutative, associative, identity, and distributive properties of addition and multiplication. Use the properties of whole numbers to solve problems in contextual situations.
MPA-013	Using Powers and Exponents in Expressions		Simplify expressions containing exponents. Change expressions of whole numbers from standard form to exponential form. Identify powers of zero and one.
MPA-008	Order of Operations	MPA-013	Simplify mathematical expressions when multiple operations are performed by using the order of operations.
MPA-004	Using Rounding to Estimate		Round whole numbers to a stated place value. Estimate sums and differences of whole numbers by using rounding techniques.
MPA-005	Estimating Products and Quotients Using Patterns	MPA-004	Estimate products and differences of whole numbers using rounding. Solve real-world problems using estimation.
MPA-006	Determining Reasonableness of Answers and Appropriate Method of Computation	MPA-004, MPA-005	Use a flow chart to model deductive reasoning in forming a conclusion. Determine the solution to a word problem and decide if an exact answer or an estimate is appropriate. Check the solution and determine the reasonableness of the answer.
MPA-003	Using Four-Step Plan for Problem Solving	MPA-006, MPA-004	Solve word problems using the four-step plan for problem solving. Set up a table or draw a diagram to solve real-world problems. Examples include, money problems, seating arrangement problems, and sports tournament problems.
Unit 2 Algebraic Expressions and Equations			
MPA-041	Writing Simple Algebraic Expressions from Phrases		Write simple algebraic expressions from verbal phrases and sentences. Write an algebraic expression that represents a real-life situation.
MPA-014	Evaluating Expressions for Given Variables	MPA-008, MPA-013	Simplify numerical and algebraic expressions containing exponents. Evaluate expressions for the given value of the variable.
MPA-009	Solving One-Step Equations Using a Box	MPA-041	Translate problems into equations using numbers and symbols. Use models to define equality. Solve one-step equations of whole numbers using a box to represent the unknown quantity.
MPA-010	Solving One-Step Equations of Whole Numbers Using Addition and Subtraction	MPA-009	Solve one-step equations of whole numbers using a variable to represent the unknown quantity. Use inverse operations of addition and subtraction and the property of equality to solve equations. Check the solution by substituting the answer back into the original equation.
MPA-011	Solving One-Step Equations of Whole Numbers Using Multiplication and Division	MPA-010	Solve one-step equations of whole numbers using a variable to represent the unknown quantity. Use inverse operations for multiplication and division and the property of equality to solve equations. Check the solution by substituting the answer back into the original equation.
MPA-012	Solving One-Step Equations of Whole Numbers Using All Operations	MPA-010, MPA-011	Solve a variety of one-step equations of whole numbers using all operations. Solve word problems by writing an equation and solving.
MPA-042	Solving Problems Using an Equation	MPA-012, MPA-041	Solve equations when given real-world problems. Write equations from sentences. Define a variable to represent the unknown quantity.
MPA-007	Solving Problems Using Logical Reasoning Skills		Define inductive and deductive reasoning. Refer to a given statement and decide the type of reasoning that is used to derive a conclusion. Complete a simple if-then logic statement. Solve problems using a logic matrix and form conclusions based on information provided in the given matrix. Solve problems using logic that require a logic matrix.

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Unit 3 Integer Operations			
MPA-043	Reading and Writing Integers		Define the set of integers as the set of whole numbers and their opposites. Express integers in standard form when given the word form. Express integers in word form when given the integers in standard form.
MPA-045	Comparing and Ordering Integers	MPA-043	Compare and order integers in real-world application problems using a number line to express distances from zero, such as, an increase and decrease in temperature, credits and withdrawals from a bank account.
MPA-044	Finding Opposite and Absolute Values of Integers	MPA-045	Find the opposites and absolute value of integers by placing the integers on a number line and determining their distance from zero.
MPA-046	Graphing Points on a Coordinate Plane	MPA-044	Graph points on a rectangular coordinate system by representing the location of a point by an ordered pair. Given the signs of the coordinates determine the quadrant in which a point is located.
MPA-047	Adding Integers with Like Signs	MPA-045	Add integers with like signs using a number line, two-colored counters, or rules. Use problem solving to find the sum of integers with like signs in a real-life situation.
MPA-048	Adding Integers with Unlike Signs	MPA-047	Add integers with unlike signs by using two-colored counters, a number line, or using rules. Use problem solving to find the sum of integers with unlike signs in a real-life situation. Examples include problems involving measurement and temperature.
MPA-050	Subtracting Integers with Unlike Signs	MPA-048	Subtract integers with unlike signs. Define the opposite of an integer as its additive inverse. Solve problems involving increases and decreases in temperatures. Solve problems involving changes in elevation above and below sea level.
MPA-051	Multiplying Integers with Like and Unlike Signs	MPA-050	Use the rules for multiplying integers with like and unlike signs. Solve rate problems that deal with the effect of multiplying integers. Determine which equation or expression represents a given situation. Evaluate algebraic expressions by substituting the given integer values of the variables.
MPA-052	Dividing Integers with Like and Unlike Signs	MPA-051	Use the rules for dividing integers with like and unlike signs. Evaluate algebraic expressions for the given integer values of the variables. Decide if the quotient of two integers is positive or negative.
MPA-053	Adding, Subtracting, Multiplying, and Dividing Integers	MPA-044, MPA-045	Add, subtract, multiply and divide integers with like and unlike signs. Solve problems involving operations with integers, such as, changes in depth of shipwrecked vessels.
MPA-117	Modeling Algebraic Expressions and Equations Using Cups and Counters	MPA-053	Model algebraic expressions using manipulatives. Model addition and subtraction of integers with like or unlike signs using two-colored counters to represent positive and negative integers. Write algebraic expressions and equations from cups and counters.
MPA-054	Solving One-Step Equations with Integers Using all Four Operations	MPA-012	Use the rules for integer operations to solve one-step equations with integers using addition, subtraction, multiplication and division. Solve real-world problems involving integers and check the solution. Examples of problems include savings account withdrawals, changes in elevation, and shopping for groceries.
Unit 4 Solving Multi-Step Equations			
MPA-100	Solving Two-Step Equations with Positive Coefficients	MPA-012	Review solving one-step equations using the properties of equality. Solve two-step equations with positive coefficients and integer solutions and verify that the answer is a solution to the equation. Write a two-step equation from a real-world situation based on a linear relationship, find the solution to the equation and verify the answer is reasonable.
MPA-165	Solving Two-Step Equations with Negative Coefficients	MPA-100	Solve two-step equations with negative coefficients and integer solutions and verify that the answer is a solution to the equation. Write a two-step equation from a real-world situation based on a linear relationship, find the solution to the equation and verify the answer is reasonable. Examples include, number of hours for a temperature to decrease, cost reductions over time.

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MPA-101	Solving Two-Step Equations by Combining Like Terms	MPA-100, MPA-165	Review algebraic terminology (terms, coefficient, constant, like terms). Solve multi-step equations with integer coefficients by combining like terms and solving for the variable. Verify that the answer is a solution to the equation. Use symbolic algebra to translate a situation into a multi-step equation, solve the equation, and check the solution. Write a multi-step equation that involves combining like terms from a real-world situation, solve the equation, and verify the answer is reasonable. Examples include finding the profit at a fundraising event.
MPA-170	Solving Equations Using the Distributive Property	MPA-101	Solve multi-step equations with integer coefficients using the distributive property and solving for the variable. Verify that the answer is a solution to the equation. Use mathematical reasoning to determine the error made when solving equations using the distributive property. Write a multi-step equation that involves using the distributive property from a real-world situation, solve the equation, and verify the answer is reasonable. Examples include, ticket costs, finding the perimeter of geometric figures.
MPA-175	Solving Equations with Variables on Both Sides	MPA-101, MPA-170	Solve multi-step equations using inverse operations and combining like terms then verify the result by checking the solution. Use symbolic algebra that represents a real-world situation by writing an equation, solving the equation, and interpreting the results. Examples include, internet service plans, health club membership plans. When given a geometric figure with variable lengths, write and solve an equation that has variables on both sides then find the perimeter of the figure.
MPA-109	Solving and Graphing Linear Inequalities on a Number Line	MPA-054, MPA-100, MPA-165	Use the symbols of inequality to define a linear inequality. Graph simple inequalities on a number line that represents all possible solutions to the inequality. Use inverse operations to simplify and solve one-step linear inequalities and graph the solutions. Solve two-step inequalities with positive coefficients and graph the solutions on a number line, then verify the solutions are true. Solve two-step inequalities with negative coefficients where the inequality symbol must be reversed. Graph the solutions on a number line and check the solutions.
MPA-125	Formulating a Possible Problem Situation Given an Equation		Decide if an equation or formula can represent a possible problem situation. Create a possible narrative situation from perimeter, area, and volume formulas and equations.
MPA-118	Modeling Algebraic Expressions and Equations Using Algebra Tiles	MPA-100, MPA-053	Write algebraic expression that represents models using algebra tiles. Determine the product (or the factors) of a model that represents multiplication of variables and integers using algebra tiles. Solve two-step equations with integer solutions using algebra tiles.
Unit 5	Decimals		
MPA-015	Identifying the Place Value of Decimals Through Thousandths		Identify decimals up to the thousandths place by using a place value chart to compare the digits in each place value position. Express decimals in word form and number form.
MPA-016	Comparing and Ordering Decimals	MPA-015	Place decimals in a place value chart to compare and order the place value of decimals through the thousandths.
MPA-017	Rounding Decimals and Estimating Computations Using Decimals	MPA-004, MPA-016	Round decimals to the nearest stated place value. Estimate the sum of decimals by first rounding to the nearest whole number then adding. Solve real-world problems using estimation and rounding of decimals.
MPA-018	Adding and Subtracting Decimals	MPA-017	Add and subtract decimals. Solve problems involving addition and subtraction of decimals.
MPA-122	Modeling Multiplication and Division of Decimals		Model a decimal number. Given a width, find the length of the model of a given division problem. Use area to model multiplication of decimals that terminate in the tenths place. Use an area model to show division with decimals with a divisor and quotient that each terminate in the tenths place. Recognize the factors given the model of the product.

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MPA-019	Multiplying Decimals	MPA-122	Use algorithms to multiply decimals with the same or different number of decimal places. Solve money problems involving multiplication of decimals.
MPA-020	Multiplying Decimals by Powers of Ten	MPA-019	Use a shortcut method to multiply decimals by powers of ten. Use mental math strategies to multiply decimals by powers of ten.
MPA-119	Dividing Decimals	MPA-122	Perform the division algorithm with whole number or decimal divisors, decimal dividends, and decimal quotient that may or may not terminate. Solve problems that require finding the whole number quotient of decimal dividends and whole number divisors.
MPA-023	Rounding Quotients Involving Decimals	MPA-004, MPA-005	Use long division to divide decimals then round the quotient to the nearest tenth. Solve money problems using long division and round the answer to the nearest tenth.
MPA-040	Solving One-Step Equations with Decimals Using All Four Operations	MPA-012	Solve one-step equations containing decimals using the properties of equality for all operations. Write and solve equations with decimals in problem solving situations.
MPA-021	Converting Between Standard and Scientific Notation	MPA-020	Use an algorithm for converting very large or very small numbers to scientific notation. Identify the correct form of scientific notation using multiplication by powers of ten in problem solving situations.
Unit 6 Number Sense			
MPA-024	Using Divisibility Rules		Apply the divisibility rules for 2, 3, 4, 5, 6, 9, and 10 to find factors of composite numbers up to six digits.
MPA-025	Identifying Prime and Composite Numbers	MPA-024	Use the divisibility rules to determine if numbers are prime or composite. Use the definitions of prime and composite numbers to answer questions related to them.
MPA-026	Using Prime Factorization	MPA-024, MPA-025	Use factor trees to find the prime factorization of composite numbers and write the answer in exponential notation.
MPA-027	Finding the Greatest Common Factor	MPA-025, MPA-026	Find the Greatest Common Factor between two or more whole numbers by listing factors or by using factor trees. Solve real-life problems that require finding the GCF of two or more numbers.
MPA-030	Finding Least Common Multiple of Two or More Numbers	MPA-026	Find the Least Common Multiple of two or more whole numbers. Solve word problems involving listing of multiples.
MPA-116	Solving Real-Life Problems by Using Guess-and-Check and Working Backwards	MPA-024	Solve word problems using problem-solving strategies, such as, Working Backwards, or Guess and Check. Examples include money problems, divisibility problems, and time-conversion problems.
Unit 7 Fractions			
MPA-028	Reducing Fractions to Lowest Terms/Simplest Form	MPA-024, MPA-027	Reduce fractions to simplest form. Use prime factorization and the divisibility rules to find the Greatest Common Factor of the numerator and denominator.
MPA-029	Converting Fractions and Decimals	MPA-015	Express decimals as fractions by using the last place value as the denominator then simplifying. Express fractions as decimals by using long division and stating the answer as a repeating or terminating decimal.
MPA-031	Comparing and Ordering Fractions and Decimals	MPA-029	Compare and order fractions and decimals by modeling using a number line, or by changing to a common format.
MPA-032	Converting Improper Fractions and Mixed Numbers	MPA-028	Identify proper fractions, improper fractions, and mixed numbers. Convert improper fractions to mixed numbers. Convert mixed numbers to improper fractions.
MPA-034	Adding and Subtracting Fractions	MPA-030	Add and subtract proper fractions by finding the least common denominator. Solve real-world problems using proper fractions. Examples include adding and subtracting fractional quantities in recipes, carpentry problems, and total time spent on work.
MPA-035	Adding and Subtracting Mixed Numbers with Unlike Denominators	MPA-032, MPA-034	Add and subtract mixed numbers with unlike denominators. Find the least common denominator of two fractions. Convert mixed numbers and improper fractions. Solve real-world problems involving addition and subtraction of mixed numbers.

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MPA-123	Modeling Multiplication and Division of Fractions	MPA-028	Use tiles or fractions strips to model a fraction. Model the product of a fraction and a whole number. Model the product of two proper fractions. Model the quotient with a fractional dividend and a whole number divisor. Model division with a fractional divisor.
MPA-036	Multiplying Fractions and Mixed Numbers and Simplifying	MPA-028, MPA-032, MPA-123	Multiply proper and improper fractions and simplify using rectangular geometric figures to represent areas. Multiply mixed numbers by first converting to improper fractions.
MPA-037	Dividing Fractions and Mixed Numbers and Simplifying	MPA-032, MPA-036, MPA-123	Divide fractions and mixed numbers by multiplying by the multiplicative inverse, or reciprocal. Rename mixed numbers as improper fractions. Reduce fractions to simplest form.
MPA-033	Estimating Computations with Fractions and Mixed Numbers	MPA-004	Use compatible numbers and rounding to estimate computations on fractions and mixed numbers.
MPA-038	Solving One-Step Equations with Fractions Using Addition and Subtraction	MPA-010, MPA-034, MPA-035	Solve equations containing fractions using the addition and subtraction properties of equality. Use models to solve for the unknown quantity.
MPA-039	Solving One-Step Equations with Fractions Using Multiplication and Division	MPA-011, MPA-036, MPA-037	Solve equations containing fractions using the properties of equality for multiplication and division.
Unit 8	Ratio and Proportions		
MPA-078	Expressing Ratios as Fractions and Determining Equivalency	MPA-028	Express ratios as fractions. Determine if ratios are equivalent. Determine proportionality.
MPA-079	Unit rates	MPA-078	Determine unit rates. Solve problems involving finding the unit rates. Solve problems involving comparing unit rates to find the "better buy".
MPA-080	Solving Proportions	MPA-078, MPA-079	Determine if two ratios are proportional. Given a proportion, solve for the missing value. Given similar figures, determine the length of one side.
MPA-110	Solving Problems Using Proportions, Scale Drawings, Models, and Maps	MPA-080	Use proportions to determine the scale of two sets of dimensions. Find the map scale when given the actual distance and the map distance. Find the actual distance when the map scale is given. Examples include floor plans, models, and distances on maps.
Unit 9	Percents		
MPA-081	Converting Fractions, Decimals, and Percents I	MPA-031	Express percents that are between 1%-100% as decimals and fractions. Solve problems involving converting percents to decimals or fractions and back again.
MPA-082	Converting Fractions, Decimals, and Percents II	MPA-081	Express percents that are less than 1% or greater than 100% as decimals and fractions. Solve real-world problems involving converting percents to decimals or fractions.
MPA-083	Finding Number Given Percent and Total	MPA-081, MPA-082	Calculate the percent of a number by writing the percent as a decimal then multiplying the numbers. Solve problems involving finding the percent of a number.
MPA-084	Finding Percent Given Number and Total	MPA-083	Write an equation to find what percent a number is of another number. Solve problems that involve finding percent.
MPA-085	Finding Total Given Number and Percent	MPA-083	Given a number and the percent that it represents, find the original amount. Solve problems involving finding the original amount.
MPA-086	Solving Problems Using Percent	MPA-081, MPA-082	Solve real-world problems using percents, such as, simple interest problems, sales tax problems, and discount problems.

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MPA-087	Finding Percent Increase and Decrease	MPA-081, MPA-082	Given the original amount and new amount, find the percent of increase, or percent of decrease.
MPA-126	Solving Real-World Problems Involving Sales Tax	MPA-081, MPA-083	Calculate the dollar amount of sales tax given the price and rate of sales tax. From a word problem, calculate the total amount of an item given the cost of the item and the sales tax rate. Given a real-life situation, find the original price of an item from the given information.
MPA-127	Solving Real-World Problems Involving Discounts, Markups, and Commission	MPA-081, MPA-083	Calculate the dollar amount of discount on an item given the percent of discount and the original price before discount. Calculate the markup of an item when given the original price and the percent of markup. Solve a stated problem involving base salary and commission.
MPA-128	Solving Real-World Problems Involving Simple and Compound Interest	MPA-013, MPA-081, MPA-083	Calculate the simple interest given principal, rate, and time in whole number of years. Identify the interest, rate of interest, principal, or time in a story about simple interest. Calculate the simple interest given principal, rate, and time in months. Solve a stated problem that requires calculating compound interest.
MPA-088	Solving Real-World Problems Involving Percent	MPA-081, MPA-083	Solve problems by calculating percents, such as, finding the cost of an item including sales tax, finding simple interest, finding the discounted sale price of an item.
Unit 10 Real Numbers			
MPA-064	Finding Square Roots	MPA-026	Find the square root of perfect squares. Identify the radical symbol. Recognize that squaring and taking the square root are inverse operations. Find the square root of rational numbers. Solve simple exponential equations by finding the positive and negative square roots. Solve word problems involving finding the length of one side of a square given the area, then calculating the perimeter.
MPA-065	Estimating Square Roots	MPA-064	Estimate the location of square roots that are not perfect squares on a number line. Given a square root that is not a perfect square, estimate between which two integers it falls on the number line. Approximate square roots using a calculator. Estimate the dimensions of a square given the area.
MPA-066	Solving Problems Using the Pythagorean Theorem	MPA-064	Derive the Pythagorean Theorem using models. Find the length of one side of a right triangle given the length of the other two sides using the Pythagorean Theorem. Use the converse of the Pythagorean Theorem to determine whether a triangle is a right triangle with the given sides. Apply the Pythagorean Theorem to find distances between points in the coordinate plane to measure lengths. Use the Pythagorean Theorem in a contextual situation to estimate and find unknown lengths.
MPA-124	Classifying Numbers in the Real Number System	MPA-045, MPA-029	Define rational numbers as any number that can be written as the quotient of integers. Show that rational numbers can be written as terminating or repeating decimals. Define irrational numbers. Classify a number as an element of the set of natural numbers, whole numbers, integers, rational numbers, irrational numbers, and/or real numbers.
Unit 11 Measurement			
MPA-130	Developing a Sense of Relative Sizes of Measures		Identify appropriate customary and metric units in relation to their real-life application. Examples include identifying the best unit for measuring the weight of a watermelon, the length of a pencil, or the capacity of a milk carton.
MPA-133	Distinguishing Between Exact and Approximate Answers	MPA-130	Decide when a contextual situation requires an exact answer and when it requires an approximation. Use measurement instruments to approximate length of given objects.
MPA-062	Converting Units in Customary System	MPA-130, MPA-133	Convert customary units for length, weight, and volume. Solve problems involving converting customary units.
MPA-061	Converting Metric Units of Length, Capacity, and Mass	MPA-130, MPA-133	Convert metric units for length, capacity, and mass. Use tables to convert from a larger unit to an equivalent smaller unit. Solve problems involving converting metric units.

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MPA-063	Converting Units Between Metric and Customary System	MPA-061, MPA-062	Use a unit conversion factor chart to convert between metric and customary measure. Solve problems involving converting between metric and customary units.
MPA-155	Comparing and Converting Rates	MPA-079, MPA-130	Use dimensional analysis to compare rates and find unit rates. Convert a rate to another with a different unit of measure, e.g. m/s to m/min, or ft/s to yd/min. Solve real-world problems that involve rate conversions.
MPA-134	Calculating with Precision, Accuracy, and Significant Digits	MPA-130, MPA-133	Compare and define accuracy and precision when measuring objects. Use the rules for determining the number of significant digits to express answers accurately. Determine how many significant digits a given set of data has and if it is accurate or precise.
Unit 12 Basic Geometry			
MPA-056	Classifying Angles		Classify angles as acute, obtuse, straight, or right angles and determine the degree measure of the angles. Identify rays, adjacent angles, and vertex. Name angles given the vertex and endpoints.
MPA-057	Identifying and Applying Supplementary and Complementary Angles	MPA-056	Given an angle, find its complement and its supplement. Use elementary algebra to solve a problem involving supplementary angles. Find the measure of the internal angles of a triangle given one internal and one external angle of the triangle. Demonstrate an understanding of angles that sum to a straight angle have measures which add up to 180°.
MPA-105	Determining the Measure of Angles Made by Parallel Lines and a Transversal	MPA-057	Compare parallel and skew lines and show the properties of each. Given two parallel lines and a transversal, identify a pair of corresponding angles, a pair of alternate exterior angles. Given two parallel lines, a transversal, and the measure of one angle find the measure of another angle. Given two parallel lines, two transversals, and the measure of two angles, find the measures of two other angles.
MPA-058	Identifying Polygons		Define, classify and name polygons up to twelve-sided figures. Identify equilateral and equiangular figures. Determine if two figures are congruent. Determine if a figure is an irregular or regular polygon. Define a line, line segment, ray, and angle.
MPA-059	Properties of Triangles and Quadrilaterals	MPA-056, MPA-058	Define and classify triangles as equilateral, isosceles, scalene, acute, obtuse, and right triangles. Define and classify quadrilaterals as squares, rectangles, parallelograms, rhombi, and trapezoids. Use models to describe the sum of the angles in a triangle as adding to 180 degrees. Apply the properties of triangles and quadrilaterals to find unknown measures of angles.
MPA-121	Identifying Similar and Congruent Polygons Using Proportions	MPA-058, MPA-059, MPA-080	Use hash marks to show congruency. Use symbols to represent polygons, angles, polygon sides, correspondence, congruence, and similarity. Write proportions from diagrams which show similar polygons. Determine the missing length given two similar figures with all but one side length.
MPA-060	Determining Which Figures Tessellate	MPA-058, MPA-059	Determine which regular figures will form a tessellation. Determine the number of degrees in any given polygon. Given a formula, $(n-2)180^\circ/2$, find the measure of the angles in an equiangular polygon.
Unit 13 Two-Dimensional Geometry			
MPA-055	Finding the Perimeter of a Figure	MPA-058, MPA-059	Find the perimeter of rectangular and irregular figures given the length of each side. Solve problems involving finding the perimeter, e.g., finding the length of fencing around a property, calculating the number of rolls of wallpaper border needed when given the dimensions on the walls.
MPA-067	Finding the Area of Rectangles and Parallelograms	MPA-055	Model the area of a rectangle by showing how the area can be found by counting the number of unit squares in the figure. Find the area of rectangles given the length and the width in rational units. Show that a parallelogram can be divided in such a way to form a rectangle and so has the same area as a rectangle using the base length and height. Determine if two rectangles with the same perimeter have the same area.

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MPA-069	Finding the Area of Triangles and Trapezoids	MPA-067	Describe the relationship between the area of a parallelogram and the area of a triangle. Define the altitude of a triangle. Find the area of a triangle given the lengths. Find one of the lengths given the area and the other length. Show that the area of a trapezoid is equal to the sum of the areas of two triangles with bases parallel. Find the area of a trapezoid given the bases and height and find the base or height given the area. Use formulas to find the areas of triangles and trapezoids in a real-world context and extend the mathematical concepts by finding costs, or quantities. Examples include calculating the cost of home-improvement, or landscaping projects.
MPA-070	Finding the Circumference of a Circle	MPA-014, MPA-017	Define a circle, the diameter, radius, and circumference. Describe approximations of pi in terms of a fraction, or a decimal. Find the circumference of a circle. Solve problems involving rotation. Given the circumference, find the diameter or radius of a circle.
MPA-071	Finding the Area of a Circle	MPA-070	Find the area of a circle. Solve problems involving finding the area of circular objects given the measure of the radius or the diameter. Find the area of a circular figure when the radius or diameter is indirectly given.
MPA-068	Finding the Area of Irregular Figures	MPA-058, MPA-067	Review area formulas for polygons. Name the polygons and identify the area formulas that can be used to find the area of an irregular figure. Find the area of an irregular figure by dividing the figure into known polygons, and using their area formulas to find the sum of the areas. Given a contextual situation, use area formulas to find the area of an irregular figure then extend understanding by finding cost of materials, or square footage.
MPA-160	Plotting Polygons and Finding the Area	MPA-046, MPA-067, MPA-069	Compute the area of polygons on the coordinate plane, or grid when given the four coordinates of its vertices and estimate the area of a figure in the first quadrant by counting the number of squares that are completely and partially covered. Find the area of complex polygons in the coordinate plane by adding the areas of each section.
Unit 14 Three-Dimensional Geometry			
MPA-072	Identifying 3-D Figures		Identify and draw three-dimensional figures including prisms, cones, cylinders, pyramids, and spheres. Identify and define the terms: polyhedrons, faces, edges, and vertices. Identify regular polyhedrons as platonic solids. Given the shape of the polyhedron, determine if the figure is a prism, a pyramid, a cone, or a cylinder.
MPA-106	Identifying a Solid Figure From a Net	MPA-068, MPA-072	Calculate the number of faces, edges and vertices of a given prism. Identify the solid that corresponds to a given net. Find the surface area of a solid represented as the net of the solid. Calculate the surface area of rectangular prisms, cubes and pyramids.
MPA-107	Constructing Three-Dimensional Figures and Examining Their Dimensions	MPA-072	Identify a three-dimensional geometric figure. Given the name of a three-dimensional geometric solid, identify a sketch of the figure. Describe the cross-sections formed when a plane intersects a three-dimensional geometric figure. Find the area of the base of a three-dimensional geometric figure given information about the dimensions of that face.
MPA-073	Finding the Surface Area of Rectangular Prisms	MPA-067, MPA-106	Find the surface area of rectangular prisms given the dimensions. Solve contextual problems involving finding the surface area of rectangular prisms. Given the surface area of a square prism, find the length of one of the sides.
MPA-074	Finding the Surface Area of Cylinders	MPA-067, MPA-071	Find the surface area of cylinders given the radius or diameter and height. Given the surface area and radius or diameter, find the height of the cylinder. Solve contextual problems involving calculating the surface area of cylindrical object.

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MPA-075	Finding the Volume of Rectangular Prisms	MPA-019, MPA-036	Model calculating the volume of rectangular prisms using unit squares. Find the volume of rectangular prisms from the given dimensions. Solve contextual problems involving finding the volume of objects that are rectangular prisms.
MPA-076	Finding the Volume of Cylinders	MPA-019, MPA-071	Calculate the volume of cylinders from the given dimensions. Solve contextual problems involving calculating the volume of objects that are cylinders.
MPA-077	Solving Problems Using a Formula	MPA-014	Solve real-world examples using the formulas for distance-rate-time problems, temperature conversion problems, and mass-energy conversion problems.
MPA-115	Finding the Volumes of Prisms, Cylinders, Pyramids, and Cones Using Models	MPA-036, MPA-072	Calculate the volume of prisms with rectangular or triangular bases with dimensions as whole numbers. Find the volume of cylinders with at least one dimension as a decimal. Find the volume of pyramids with dimensions as whole numbers or at least one number as a fraction. Find the volume of cones with dimensions as whole numbers.
MPA-111	Comparing Perimeters, Areas, and Volumes of Similar Geometric Figures and Solids	MPA-121	Use scale factor and the perimeter of a rectangle to evaluate the perimeter of similar rectangles. Use properties of similar rectangles to find the area. Estimate the volume of similar figures when the scale factor is given. Use properties of similar trapezoids to find the area. Use the scale factor to estimate the ratio of volumes of cylinders. Use properties of similar parallelograms to find the area.
Unit 15 Graphing Linear Equations			
MPA-102	Graphing Equations by Plotting Points	MPA-046	Graph linear equations on the Coordinate Plane. Use a table of x- and y- values to find three coordinate points that satisfy the equation. Plot the points on the Coordinate Plane and draw a line. Choose the graph that represents the equation of the line. State if the equation represents a vertical or horizontal line.
MPA-103	Distinguishing Between Relations and Functions	MPA-102	Define relations and functions. Determine if the relation is a function using the vertical line test from a graph. Determine if the relation is a function from a set of ordered pairs, from a mapping, or from a table.
MPA-135	Determining the Slope of a Line	MPA-046	Graph proportional relationships and identify the slope of a line as the rate of change. Use interactivity to identify the steepest slope. Determine if the slope of the line is positive, negative, zero, or undefined. Find the slope of a line given two points on the line. Model real-world situations using graph, tables, and equations and use reasoning to interpret the results.
MPA-140	Examining Linear Equations in Slope-Intercept Form	MPA-100, MPA-135	Use the slope and y-intercept to graph linear functions and identify situations with constant or varying rates of change. Find the slope of a line given a graph, an equation, or table and determine the rate of change given a real-world scenario.
MPA-142	Solving Problems With Linear Functions and Direct Variation	MPA-140	Identify the slope as a rate of change and the y-intercept as the initial amount given a real-life situation from a table. Identify the constant of variation, k, from an equation, or table. Solve a multi-step problem involving direct variation using proportions.
MPA-150	Identifying and Graphing Linear and Nonlinear Functions	MPA-135, MPA-142	Given an equation, graph, or table, determine whether the function is linear or nonlinear. Identify and graph $y = nx^2$ and $y = nx^3$. In a real-life situation, graph a nonlinear function from an equation or table of values.
MPA-104	Recognizing Patterns	MPA-016, MPA-031, MPA-045	Determine a pattern or sequence from a given set. Given a sequence of numbers, determine the rule and find the next term of the sequence, or the nth term of the sequence. Identify the Fibonacci sequence and find the next terms in the sequence.
MPA-270	Generating Algebraic Expressions from Patterns of Models	MPA-104, MPA-142	Generate a sequence from a table that represents a rule given an algebraic expression. Generate a rule from a graphical representation e.g. pattern of blocks. Write a rule that describes a numerical sequence in a table. Describe the relationship between variables shown on a graph as a direct variation.

I CAN Learn® Lesson #	I CAN Learn® Lesson Title	Pre-requisites	I CAN Learn® Lesson Description
MPA-108	Graphing Translations and Reflections on the Coordinate Plane	MPA-046, MPA-160	Define the terms transformation, translation, pre-image, image, and reflection. Locate the coordinates from a graph of a geometric figure after a reflection across one of the axes. Locate the coordinates from a graph of a geometric figure after a translation. Find the new coordinates (image) of a geometric figure after a reflection given the original coordinates (pre-image) of the vertices.
MPA-120	Applying Dilations in the Coordinate Plane	MPA-046, MPA-108	Describe dilations as transformations that change the size of geometric figures but not the shape. Describe the scale factor as a ratio of the image to the pre-image of a geometric figure. Define a dilation with the origin as the center of dilation. Find the vertices of a dilated figure given the scale factor and the graph. Calculate the scale factor of a dilation given the coordinates of the vertices of the pre-image and the coordinates of the image.
MPA-180	Examining Line and Rotational Symmetry	MPA-046, MPA-108	Review transformations (reflection, rotation). Determine which figure has line symmetry and find the number of lines of symmetry. Determine which figure has rotational symmetry and identify the angle of rotation and direction (clockwise, counterclockwise). Use interactivity to reflect the image of a polygon in the coordinate plane. Rotate a polygon in the coordinate plane given the angle of rotation and direction.
Unit 16	Probability		
MPA-089	Using Tree Diagrams		Define a sample space as a set of all possible outcomes. Represent the number of all possible outcomes by drawing a tree diagram.
MPA-091	Finding the Number of Combinations of a Set of Objects	MPA-089	Define the Fundamental Counting Principle. Compute factorials. Use permutations to calculate an arrangement of n objects taken r at a time when the order of selection is important. Use combinations to calculate an arrangement of n objects taken r at a time when the order of selection is not important.
MPA-090	Finding the Probability of Simple Real-Life Events	MPA-078, MPA-089	Define the terms experiment, outcome, sample space and simple event. Define the probability of an event, when all outcome of an experiment are equally likely, as the number of successful outcomes to the number of total possible outcomes. Understand that the measure of the likelihood of an event can be represented by a number from 0 to 1. Find the probability of a simple event. Examples include tossing a coin, rolling a number cube, choosing a black sock from a drawer of colored socks. Find the complement of an event.
MPA-112	Constructing Sample Spaces for Compound Events (Dependent and Independent)	MPA-089, MPA-090	Define and identify dependent or independent events. Use models to list sample spaces for experiments with at most 10 outcomes. Find the probability of an event with or without replacement when another event has occurred. Find the probability of an event when another event has occurred and the events are independent.
MPA-113	Finding the Probability of Compound Events Through Experimentation	MPA-089	Use models to represent sample spaces then find the probability of a combination of events. Find the probability of a combination of events using the words "or", "and", & "when". Examples include number cubes, spinners, or a combination of the two.
MPA-114	Finding the Odds of Events and Experimental Probability from a Math Model	MPA-090, MPA-112	Find the odds in favor or the odds against getting an event. Compare experimental and theoretical probability. Find the experimental probability of an event from a set of data. Find the complement of experimental probability of a compound event from data in a survey.
Unit 17	Statistics		
MPA-092	Reading and Interpreting Bar, Line, and Circle Graphs	MPA-081, MPA-071	Read and interpret bar, line, and circle graphs from the given data. Given a circle, bar, or line graph, answer indirect questions related to the graph.
MPA-095	Find the Mean, Median, and Mode		Find the mean, median, or mode from a set of data. Solve problems involving the mean, median, or mode of a set of data.

I CAN Learn® Lesson #	I CAN Learn® Lesson Title	Pre-requisites	I CAN Learn® Lesson Description
MPA-129	Choosing Appropriate Scales and Intervals for Data	MPA-092	Calculate the range of data given in a frequency table. Determine the amount of separation between marks on the vertical axis of a bar or line graph. Label a graph on the axes to match the given data. Label the vertical axis to calculate the range of the data. Construct a line or bar graph to represent data from a frequency. Use a break symbol on a vertical axis to show missing values.
MPA-094	Interpreting and Constructing Line Plots	MPA-129	Determine the scale and intervals from a set of data and create line plots based on the given set of data. Define an outlier as an observation that lies far apart from the rest of the data. Define a cluster as data that is grouped closely together on a line plot. Interpret data from line plots and answer questions related to the given data.
MPA-096	Constructing Stem-and-Leaf Plots	MPA-095	Construct stem-and-leaf plots to display data sets. Create a key that describes a stem-and-leaf plot. Draw single- or back-to-back stem-and-leaf plots depending on the given data. Read and interpret stem-and-leaf plots and answer questions related to the given data.
MPA-097	Constructing Box-and-Whisker Plots	MPA-095, MPA-129	Construct box-and-whisker plots from a given set of data. Determine the median, the upper and lower quartiles, the upper and lower extremes, the interquartile range, and the outliers from the data.
MPA-131	Interpreting and Creating Histograms	MPA-092	Define the characteristics of a histogram as a specific type of bar graph that has no spaces between bars where each category is divided into number groups and data is displayed in equal intervals. Find the range of a set of data and use a tallying system to record the data in a frequency table. Create histograms from frequency tables using sample data then interpret the graph and answer questions related to the data.
MPA-132	Interpreting and Creating Scatterplots	MPA-046, MPA-135	Describe the type of correlation for a given scatterplot as positive, negative, or no correlation. Interpret a given scatterplot and describe the relationship in words. Draw a scatterplot from a data set and use the best fit line to make predictions.
MPA-098	Making Predictions from Graphs and Choosing the Correct Graph	MPA-092, MPA-132	Decide on the most appropriate method to use to display the information (circle graph, bar graph, line graph, or scatterplot). Based on the information displayed on the graph, make predictions from the given set of data.
MPA-099	Recognizing Misleading Statistics and Graphs	MPA-095	Recognize when misleading statistics and graphs are represented. Understand that misleading statistics and graphs are generally represented when information is improperly organized, gathered, or presented.
MPA-840	Interpreting Data		Interpret data from a table or from a graph. Decide if the data represented in a graph or a table is misleading. Compare graphical representations of the same data.
MPA-835	Using Measures of Central Tendency	MPA-092, MPA-094, MPA-096	Calculate the mean, median, and mode from a data set. Identify outliers in a data set. Determine how changes in a data set affect the measures of central tendency. Use mathematical reasoning to identify the most appropriate measure of central tendency in a contextual situation. Calculate measures of central tendency from a set of data displayed in a graph. Use data from a sample to draw inferences about a population and draw comparative inferences about two populations. (New for Fall 2011)
MPA-836	Using Measures of Variation	MPA-094, MPA-097, MPA-131, MPA-835	Identify the quartiles of a given data set. Identify the range and interquartile range of a given set of data. Use the interquartile range to identify outliers. Compare the variability in data sets displayed in line plots and box plots. Compare the variability of data sets using mean absolute deviation. Use measures of variability from random samples to draw comparative inferences about two populations. (New for Fall 2011)