

Anadarko Public Schools
MATH Power Standards

Kindergarten

P.S. 1 Number Sense and Operations

1. Say the number name sequence forward and backward beginning from a given number within the known sequence (counting on, spiral)
2. Write numbers from 1 to 20 in base-ten notation
3. Count to answer “how many?” questions about as many as 20 things in a line, rectangle, circle, or scattered about
4. Understand that when counting object the number names are said in standard order, each object is paired with one and only one number name, and the last number name said tell the number of objects counted
5. Compare and put in order numbers between 1 and 20 presented in written symbols
6. Understand that 10 can be thought of as a bundle of ones – a unit called “ten”
7. Understand that a teen number is composed of a ten and one, two, three four, five, six, seven, eight, or nine ones
8. Understand that a decade word refers to one, two, three, four, five, six, seven, eight, or nine tens
9. Understand that the two digits of a two-digit number represent amounts of tens and ones

P.S. 2 Algebra

1. Identify characters, settings, and key events in a story
2. Read with sufficient accuracy and fluency to support emergent-reader literature and informational texts with purpose, understanding and comprehension

P.S. 3 Geometry

1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to
2. Understand that names of shapes apply regardless of the orientation or overall size of the shape
3. Combine two- or three-dimensional shapes to solve problems such as deciding which puzzle piece will fit into a place in a puzzle

P.S. 4 Measurement

1. Understand that objects have measurable attributes, such as length or weight. A single object might have several measurable attributes

P.S. 5 Data Analysis, Probability, and Statistics

1. Classify objects or people into given categories; count the numbers in each category and sort the categories by count

1st Grade

P.S.1 Number Sense and Operations

1. Understand that addition can be recorded by an equation to show the sum. Subtraction can be recorded by an equation to show the difference
2. Read, write, and identify numbers to 100
3. Understand when comparing 2-digit numbers, if one number has more tens, it’s greater; if the amount of tens is the same in each number, then the number with more ones is greater
4. Calculate mentally, additions within 20

P.S. 2 Algebra

1. Patterns: Understand the properties of addition (commutative, associative, and identity)
2. Functions: Understand that addition and subtraction have an inverse relationship ($8+2=10$, $10-2=8$); Understand that addition and subtraction apply to situations of adding to, taking from, putting together, and taking apart and comparing

P.S. 3 Geometry

1. Distinguish between defining attributes (triangles are closed and 3 sided) versus non-defining attributes (colors, orientation, overall size) for a wide variety of shapes

P.S. 4 **Measurement**

1. Understand that the length of an object can be expressed numerically by using another object as a length unit (paper clips, yardstick, and inch ruler). The object to be measured is partitioned into as many equal parts as possible with the same length as the length unit. The length measurement of the object is the number of length units that span it with no gaps or overlaps
2. Tell time from analog clocks in hour, half, and quarter hours
3. Identify coins – penny, nickel, dime, and quarter

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Organize, represent and interpret data with several categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another

2nd Grade

P.S.1 **Number Sense and Operations**

1. Identify place value: 100's, 10's, and 1's
2. Know before/after, greater than/less than, compare and order, and sequence numbers to 500
3. Fractional parts including halves, thirds, fourths, and common percents
4. Calculate mentally subtraction to twenty
5. Apply associative property – fact families
6. Understand estimation
7. Solve two-digit addition and subtraction problems with and without regrouping
8. Understand the properties of multiplication

P.S. 2 **Algebra**

1. Describe, extend, create, and record number patterns beginning with a given number and extending to 100
2. Solves number sentences, word problems, and equivalent equations
3. Choose appropriate operations for problem solving

P.S. 3 **Geometry**

1. Identify symmetric and congruent shapes
2. Identify plane and solid shapes and attributes

P.S. 4 **Measurement**

1. Measure objects using standard units/length to the nearest foot, inch, and half-inch
2. Calendar skills: solve problems involving days of the week, months, and year
3. Identify area and perimeter of plane shapes
4. Identify and count money up to a twenty dollar bill and write amounts using dollar and cent notations
5. Measure temperature using Fahrenheit/Celsius

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Collect, organize, and display data in charts, bar graphs, and tables
2. Understand and use data to determine probability

3rd Grade

P.S. 1 **Number Sense and Operations**

1. Place value – numbers up to 10,000
2. Write numbers in expanded form and standard form
3. Add and subtract whole numbers up to 1,000
4. Explain and justify properties of addition and subtraction
5. Estimate and compare whole numbers up to 1,000
6. Represent the concept of multiplication as repeated addition
7. Develop fluency in basic multiplication facts, associated division facts and fact families
8. Explain and justify properties of multiplication and division
9. Compare and order whole numbers up to 1,000
10. Identify fractional parts including halves, thirds, fourths, eighths, tenths, and common percents

P.S. 2 **Algebra**

1. Patterns
2. Problem solving

P.S. 3 **Geometry**

1. Spatial reasoning

P.S. 4 **Measurement**

1. Measuring
2. Time and temperature
3. Money
4. Area and perimeter

P.S. 5 **Data Analysis, Probability and Statistics**

1. Collect, organize, display, and interpret data in charts, bar graphs, and tables
2. Describe the probability (more, less, or equally likely) of facts
3. List arrangements and combinations up to three items

4th Grade

P.S. 1 **Number Sense and Operations**

1. Place value through six digits, expanded form
2. Decimal numbers to the hundredths (money, numerals to words)
3. Whole numbers and decimals to hundredths place (pictures of shaded regions of two-dimensional figures and use $<$ $>$ and $=$ symbols)
4. Use 1, $\frac{1}{2}$, and 1 or 0, 0.5, and 1 as benchmarks and place additional fractions, decimals, and percents on a number line ($\frac{1}{3}$, $\frac{3}{4}$, 0.7, 0, 4, 62%, 12%)
5. Compare, add, or subtract fractional parts (with like denominators and decimals) using physical or pictorial models
6. Products up to 3-digit by 3-digit
7. Basic division facts up to 144 divided by 12 and associated multiplication facts
8. Quotient with and without remainder, one digit divisors, 2 or 3 digit dividend while solving application problems

P.S. 2 **Algebra**

1. Discover, describe, extend, and create patterns using tables, graphs, rules and verbal models (functions machines, extend visual and number patterns)
2. Find variables by solving equations using addition, subtraction, multiplication, and division with whole numbers
3. Recognize and apply associative property

P.S.3 **Geometry**

1. Identify, draw and construct intersecting, parallel and perpendicular lines
2. Identify and compare angles (right, acute and obtuse)
3. Identify, draw, and construct regular and irregular polygons (triangles, quadrilaterals, etc) to solve problems
4. Describe effects of transformations, reflections, rotations on two dimensional objects

P.S.4 **Measurement**

1. Estimate, establish, and select benchmarks for customary and metric units to solve application problems (length, weight, mass, area, and volume)
2. Estimate the measures of a variety of objects using customary units
3. Develop and use the concept of area of different shapes using grids to solve problems
4. Solve elapsed time problems
5. Read thermometers using intervals of 1, 2, or 5 and solve for temperature change
6. Money: determine the correct amount of change when a purchase is made with a \$20 bill

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Read and interpret data displays (tallies, tables, charts, and graphs) and use the observations to pose and answer questions
2. Collect, organize, and record data in tables and graphs
3. Predict the probability of outcomes of simple experiments using words such as certain, equally likely, and impossible (coins, number cubes, and spinners)

- Determine the median and mode of a set of data

5th Grade

P.S. 1 Number Sense and Operations

- Place value through hundred million and thousandths
- Fractions, decimal, and percents
- Integers
- Factors and multiples
- Prime and composite numbers
- Products and quotients

P.S. 2 Algebra

- Expressions
- Equations
- Rules
- Patterns
- Variables
- Modes (e.g. balance)
- Commutative, associative, and distributive properties

P.S. 3 Geometry

- Circles
- Polygons

P.S. 4 Measurement

- Angles
- Perimeter
- Area
- Metric units
- Customary units

P.S. 5 Data Analysis, Probability, and Statistics

- Data
- Tables
- Graphs
- Probability (as fraction)
- Combinations
- Mean
- Range

6th Grade

P.S. 1 Number Sense and Operations

- Decimals (compare, order, multiply, divide, and convert)
- Solve problems containing exponents using the order of operations
- Fractions (compare, order, simplify, multiply, divide, convert)
- Estimation (decimals, fractions, percents, whole numbers)
- Integers (add, subtract, multiply, and divide)

P.S. 2 Algebra

- Identify and extend patterns
- Write algebraic expressions and equations
- Solve one-step equations using several methods

P.S. 3 Geometry

- Compare and contrast pyramids, prisms, cones, and cylinders
- Compare and contrast congruent and similar figures
- Graph ordered pairs in the coordinate plane

P.S. 4 Measurement

- Find circumference and area of circles
- Convert, add, and subtract units of measurement within the customary system

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Organize and interpret tables, diagrams, charts, and graphs
2. Use fundamental counting principal to determine possible combinations
3. Determine, mean, median, mode, and range

7th Grade

P.S. 1 **Number Sense and Operations**

1. Rational numbers (compare and order positives and negatives)
2. Squares and square roots (solve and estimate)
3. Ratios and proportions
4. Solve percent problems
5. Simplify problems with integers, exponents, and parenthesis

P.S. 2 **Algebra**

1. Identify, describe, and analyze linear and nonlinear relationships between two variables
2. Write and solve two-step equations with one variable
3. Model, write, solve, and graph one-step linear inequalities with one variable

P.S. 3 **Geometry**

1. Classify triangles and quadrilaterals by sides and angles
2. Angle relationships (parallel lines cut by transversal)
3. Identify transformations on a graph

P.S. 4 **Measurement**

1. Perimeter of triangles and quadrilaterals
2. Apply area formula to find area and circumference of circles
3. Find perimeter and area of complex figures

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Compare, translate, and interpret between diagrams, tables, charts, and graphs
2. Determine probability events involving “or”, “and”, or “not”
3. Compute mean, median, mode, and range including any outliers

8th Grade

P.S. 1 **Number Sense and Operations**

1. Write numbers in scientific notation and solve problems involving numbers in scientific notation
2. Solve problems using the rules of exponents (including integer exponents)
3. Simplify expressions with rational numbers, exponents, and parenthesis using order of operations

P.S. 2 **Algebra**

1. Model, write, and solve multi-step linear equations with one variable
2. Graph and interpret the solution to one- and two-step linear equation on number lines and coordinate planes
3. Predict the effect on a graph when slope or y-intercept changes
4. Apply appropriate formulas to solve problems (distance, interest)
5. Model, write, solve, and graph one- and two-step inequalities with one variable

P.S. 3 **Geometry**

1. Classify and identify solids from different perspectives
2. Use Pythagorean Theorem to solve for missing sides of right triangles and lengths between two points

P.S. 4 **Measurement**

1. Use formulas to solve for surface area of rectangular prisms, triangular prisms, and cylinders
2. Use formulas to solve for volume of rectangular prisms, triangular prisms, and cylinders
3. Use ratios and proportions to identify similar figures and solve for mission sides
4. Find the area of a “region of a region”

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Select, analyze, and apply displays to data
2. Compute, mean, median, mode, and range

9th – 12th Grades

P.S. 1 **Number Sense and Operations**

1. Evaluate expressions involving rational, irrational, and complex numbers
2. Simplify both polynomial and radical expressions
3. Order of operations for mathematics

P.S. 2 **Algebra**

1. Functions and functional notation
2. Linear and quadratic equations, functions, and inequalities
3. Systems of equations and inequalities
4. Rational equations and functions
5. Polynomial equations and functions
6. Exponential and logarithmic functions

P.S. 3 **Geometry**

1. Inductive and deductive reasoning
2. Line and angle relationships
3. Properties of polygons and circles
4. Pythagorean Theorem, trigonometric ratios, and special right triangles
5. Properties of Polyhedra and other solids

P.S. 4 **Measurement**

1. Using formulas to find attributes of 2-dimensional and 3-dimensional figures (area, perimeter, circumference, surface area, lateral area, and volume)
2. Knowing appropriate unit of measurement for each measure

P.S. 5 **Data Analysis, Probability, and Statistics**

1. Analysis of collected data
2. Line and curve of best fit
3. Making predictions
4. Arithmetic and geometric sequences and series
5. Probability, odds, combinations, and permutations