

Benton Community Schools
Standards and Benchmarks
Mathematics

1. Understand the general uses of mathematics
2. Uses a variety of strategies in the problem solving process
3. Links concepts and procedures to develop and use computational techniques
4. Applies the concepts of geometry
5. Uses data collection, analysis, statistics and probability to solve problems
6. Applies the basic properties of algebra

Standard 1 Understand the general uses of mathematics

K-2 Benchmarks

1. Understands that a number is a symbol that represents a given quantity
2. Orders a set of 3 numbers up to 100
3. Uses counting to reach a given number

3-4 Benchmarks

1. Understands the difference between odd and even numbers
2. Understands the meaning of whole number 100,000 place value
3. Orders and compares numbers
4. Measurement

5-6 Benchmarks

1. Understands place value from 10 thousandth to billions
2. Understands the relationship of fractions to decimals and to whole numbers
3. Understands the characteristics of mixed numbers
4. Measurement

7-8 Benchmarks

1. Understands basic number theory concepts
2. Understands comparative relationships among rational numbers

9-12

1. Understands the characteristics of the real number system and its subsystems
2. Understands the comparative relationships between numbers
3. Demonstrates an understanding of the different forms for expressing numbers (written, Base 10, scientific)

Standard 2 Uses a variety of strategies in the problem solving process

K-2 Benchmarks

1. Represents problems using numbers, manipulatives, or drawings to solve problems
2. Explain to others how a numerical problem was solved

3-4 Benchmarks

1. Check the results through estimation
2. Identifies a variety of strategies for a given problem situation

5-6 Benchmarks

1. Determines appropriate computation method in problem-solving (pencil/paper, mental, or calculator)
2. Distinguishes between important and non-important when solving problem
3. Uses appropriate strategy to solve problems
4. Checks results through estimation

7-8 Benchmarks

1. Understands how to translate a basic problem presented in word form into the appropriate mathematical expression
2. Follows a general model to solve problem (understand problem, chose method, solving, checking)

9-12 Benchmarks

1. Given a problem, can develop a mathematical model to represent the problem
2. Provides valid arguments to justify procedures used to solve problems
3. Understand how to translate a problem presented in word form into a mathematical representation

Standard 3 Links concepts and procedures to develop and use computational techniques

K-2 Benchmarks

1. Adds and subtracts whole numbers with accuracy
2. Uses addition

3-4 Benchmarks

1. Adds, subtracts, multiplies, and divides whole numbers with accuracy
2. Rounds whole numbers

5-6 Benchmarks

1. Mentally adds, subtracts, multiplies, and divides basic combinations of whole numbers with reasonable accuracy
2. Uses basic estimating techniques (whole # and decimals) choose appropriate
3. Round whole numbers and decimals to a given place value
4. Add, subtract, multiplies and divides whole numbers, decimals, fractions and integers with accuracy

7-8 Benchmarks

1. Adds, subtracts, multiplies and divides mixed numbers, fractions, decimals and percents
2. Correctly applies order of operations
3. Understands properties of operations of numbers
4. Selects and uses appropriate computational method for a given situation

9-12 Benchmarks

1. Manipulates algebraic expressions using appropriate operations
2. Understands how to manipulate and work with functions

Standard 4 Applies the concepts of geometry

K-2 Benchmarks

1. Understand the basic properties between circles, squares and triangles
2. Understands the concepts inside, outside and between
3. Understands that shapes such as circles, squares and triangles can be found in our environment
4. Understand that putting different shapes together can make patterns

3-4 Benchmarks

1. Understand the basic characteristics of angles
2. Understand sides, corners, points, lines, and segments
3. Understand the relationship of plane figures to space figures

5-6 Benchmarks

1. Measures angles to a given degree of accuracy
2. Understands the basic characteristics of angles
3. Understands the concepts parallel, perpendicular, congruence and symmetry
4. Uses motion geometry (i.e., flips, turns, and slides) to investigate concepts of symmetry, similarity and congruence
5. Measurement of: area, perimeter and circumference

7-8 Benchmarks

1. Understands the properties and characteristics of two and three-dimensional figures
2. Measures angles to a given degree of accuracy

9-12 Benchmarks

1. Performs standard transformations
2. Understand properties and advanced characteristics of one, two, and three-dimensional figures
3. Understand the advanced relationships among one, two and three-dimensional figures and their intersections

Standard 5 Uses data collection, analysis, statistics and probability to solve problems

K-2 Benchmarks

1. Understands that objects or events can be organized and recorded in simple graphs

3-4 Benchmarks

1. Understand that some events are more likely to happen than others
2. Construct and interprets simple pictographs, bar graphs, pie charts, and line graphs
3. Understand that data comes in many different forms and that collecting, organizing, and displaying data can be done in many ways

5-6 Benchmarks

1. Understand similarities and differences between tables, bar graphs and circle graphs
2. Construct, read and interprets data in charts, tables, plots and graphs (bar, circle, and line)

7-8 Benchmarks

1. Understands basic characteristics of and calculates measures of central tendency (mean, median, mode)
2. Represents data appropriately in charts, tables, or graphs
3. Understanding of basic probability concepts

9-12 Benchmarks

1. Understand a variety of experimental methods for determining probability
2. Understand and use the measures of central tendency and dispersion
3. Understand that sets of data can be represent using a variety of tables, graphs and symbols and that different representations convey different messages

Standard 6 Applies the basic properties of algebra

K-2 Benchmarks

1. Recognizes basic number patterns
2. Writes a sentence to represent a real life problem

3-4 Benchmarks

1. Can find a missing number in a number sentence
2. Understands at a very basic level, mathematics is the study of many kinds of patterns
3. Uses patterns and relationships to represent mathematical situations

5-6 Benchmarks

1. Understands that an algebraic expression contains a variable which is a symbol representing an unknown quantity
2. Uses patterns and relationships to represent mathematical situations

7-8 Benchmarks

1. Understands use of variables in expression, equations, or inequalities
2. Understands coordinate system
3. Solving linear equations using concrete, informal, or formal methods
4. Understands various representations (tables, graphs, verbal descriptions, algebraic expressions) of patterns and relationships, and can translate among them

9-12 Benchmarks

1. Solve equations and inequalities
2. Understands the general properties and characteristics of types of functions

