

Grade 7 Math Standards and Benchmarks

Standard 1: Use a variety of strategies in the problem-solving process

Benchmarks:

Grade 7

- 1.1 Understand that there is no right way to solve mathematical problems but that different methods (e.g., working backward from a solution, using a similar problem type) have different advantages and disadvantages

Standard 2: Understand and apply basic and advanced properties of the concepts of numbers

Benchmarks:

Grade 7

- 2.1. Understand the relationships among equivalent number representations (e.g., whole numbers, positive and negative integers, fractions, ratios, decimals, percents, scientific notation, exponents) and the advantages and disadvantages of each type of representation
- 2.2. Understand the characteristics and properties (e.g., order relations, relative magnitude, base ten place values) of the set of rational numbers and its subsets (e.g., whole numbers, fractions, decimals, integers)

Standard 3: Use and apply basic and advanced properties while performing the processes of computation

Benchmarks:

Grade 7

- 3.1. Understand how different algorithms work for arithmetic computations and operations
- 3.2. Select and use appropriate computational methods (e.g., mental, paper and pencil, calculator, computer) for a given situation

Grade 7 Math Standards and Benchmarks

Standard 4: Understand and apply basic and advanced properties of the concepts of measurement

Benchmarks:

Grade 7

- 4.1. Understand the relationships among linear dimensions, perimeter, area, surface area, volume and the corresponding uses of units, square units, and cubic units of measure
- 4.2. Understand the concepts of precision and significant digits as they relate to measurement (e.g., how units indicate precision)
- 4.3. Solve problems involving units of measurement and convert answers to a larger or smaller unit within the same system (i.e., metric or U.S.)

Standard 5: Understand and apply basic and advanced properties of the concepts of geometry

Benchmarks:

Grade 7

- 5.1. Understand the defining properties of geometric figures (e.g., a cube has edges with equal lengths, faces with equal areas and congruent shapes, right-angle corners)
- 5.3. Understand the relationships between two and three-dimensional representations of a figure (e.g., scale drawing, planar cross section)

Grade 7 Math Standards and Benchmarks

Standard 6: Understand and apply basic and advanced concepts of statistics and data analysis

Benchmarks: Grade 7

- 6.1. Understand the purpose and applications of graphs
- 6.2. Understand basic characteristics of measures of central tendency (i.e., mean, mode, median)
- 6.3. Understand basic characteristics of frequency and distribution (e.g., range, varying rates of change, gaps, cluster, outliers)

Standard 7: Understand and apply basic and advanced concepts of probability

Benchmarks: Grade 7

- 7.1. Understand how predictions are based on data and probabilities (e.g., the difference between predictions based on theoretical probability and experimental probability)

Standard 8: Understand and apply basic and advanced properties of functions and algebra

Benchmarks: Grade 7

- 8.1. Know that an expression is a mathematical statement using numbers and symbols to represent relationships and real world situations (e.g., equations and inequalities with or without variables)
- 8.3. Use the rectangular coordinate system to model and solve problems