

Grade 8: Concepts and Procedures Target A: The Number System

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Identify numbers as rational or irrational.

Student Just Entering
Standard Met
Should Be Able To:

- Convert from fractions to repeating decimals.
- Use rational approximations of familiar irrational numbers to make numerical comparisons.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Approximate irrational numbers between two integers to a specified level of precision.

Grade 8: Concepts and Procedures Target B, C, & D: Expressions and Equations

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Find the cube of one-digit numbers and the cube root of perfect cubes (less than 1,000).
- Use appropriate tools (e.g., calculator, pencil and paper) to translate large numbers from scientific to standard notation.
- Identify the y-intercept and calculate the slope of a line from an equation or graph.
- Graph a system of linear equations and identify the solution as the point of intersection.

Student Just Entering
Standard Met
Should Be Able To:

- Solve simple quadratic monomial equations and represent the solution as a square root.
- Work with and perform operations with scientific notation of large numbers.
- Identify unit rate of change in linear relationships (i.e., slope is the rate of change).
- Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms and equations with infinitely many solutions or no solution.
- Solve a system of linear equations with integer coefficients using an algebraic strategy.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Write a system of two linear equations with two variables to represent a context.

Grade 8: Concepts and Procedures Target E & F: Functions

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Identify whether an input/output pair satisfies a function.
- Compare properties of two linear functions represented in the same way (algebraically, graphically, or in a table).
- Construct a table to represent a linear relationship between two quantities.
- Qualitatively describe a graph of a linear function.

Student Just Entering
Standard Met
Should Be Able To:

- Classify functions as linear or nonlinear on the basis of the algebraic representation.
- Determine the rate of change and the initial value of a function.
- Know linear equations of the form $y = mx + b$ are functions.
- Compare properties of two linear functions represented in different ways (algebraically, graphically, or in a table).

Student Just Entering
Standard Exceeded
Should Be Able To:

- Interpret the rate of change and initial value of a linear function in terms of its graph.

Grade 8: Concepts and Procedures Targets G, H, & I: Geometry

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Construct reflections across an axis and translations of figures in a coordinate plane.
- Identify the appropriate formula for the volume of a cylinder and connect the key dimensions to the appropriate location in the formula.

Student Just Entering
Standard Met
Should Be Able To:

- Predict the location of point P after a transformation.
- Know that sequences of translations, rotations, and reflections on a figure always result in a congruent figure.
- Construct rotations of figures in a coordinate plane.
- Calculate the volume of a cylinder in direct and familiar mathematical and real-world problems.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Describe the impact of two transformations, including a dilation, on a figure.
- Identify or draw the relevant right triangle in a three-dimensional figure, given coordinates or a diagram.
- Solve unfamiliar or multi-step problems involving volumes of cylinders.

Grade 8: Concepts and Procedures Targets J: Statistics and Probability

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Identify what a linear pattern looks like from a given scatter plot.

Student Just Entering
Standard Met
Should Be Able To:

- Describe outliers for a given scatter plot.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Use the trend line or line of best fit to make predictions in real-world situations.

Grade 8: Problem Solving / Modeling and Data Analysis

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Select tools to solve a familiar and moderately scaffolded problem and apply them with partial accuracy.
- Use the necessary elements given in a problem situation to solve a problem.
- Apply mathematics to propose solutions by identifying important quantities and by locating missing information from relevant external resources.

Student Just Entering
Standard Met
Should Be Able To:

- Use appropriate tools to accurately solve problems arising in everyday life, society, and the workplace.
- Apply mathematics to solve problems by identifying important quantities and mapping their relationship and by stating and using logical assumptions.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Analyze and interpret the context of an unfamiliar situation for problems of increasing complexity.
- Begin to solve problems optimally.
- Construct multiple plausible solutions and approaches.

Grade 8: Communicating Reasoning

Student Just Entering
Standard Nearly Met
Should Be Able To:

- Find and identify the flaw in an argument.

Student Just Entering
Standard Met
Should Be Able To:

- Use stated assumptions, definitions, and previously established results and examples to identify and repair a flawed argument.
- Use previous information to support his or her own reasoning on a routine problem.

Student Just Entering
Standard Exceeded
Should Be Able To:

- Begin to construct chains of logic about abstract concepts autonomously.