

Math 8

| State Standard Number | State Standard Area/Description | Unit Name | Course Topic Description |
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| N | Number Sense, Properties, and Operations | | |
| N.1 | In the real number system, rational and irrational numbers are in one to one correspondence to points on the number line | | |
| N.1.a | Compare and order sets of integers and rational numbers that are expressed as fractions, decimals, or percents | Fractions | Compare and Order |
| N.1.b | Given a whole number from 0 - 100, determine whether it is a perfect square or find the two consecutive whole numbers between which its square root lies | Square Roots | Throughout Unit |
| N.1.c | Approximate the location of square roots between two whole numbers on a number line | Square Roots | Throughout Unit |
| N.2 | Formulate, represent, and use algorithms with rational numbers flexibly, accurately, and efficiently | | |
| N.2.a | Add, subtract, multiply and divide rational numbers including integers, positive and negative fractions and decimals | Equations with Fractions Variables and Expressions Percents and Equations | Throughout Units Fractions, Decimals, and Percents |
| N.2.b | Apply computational methods to solve multi-step application problems involving percents and rational numbers | Percents and Equations | Percents and Equations |
| N.2.c | Analyze how credit and debt impact personal financial goals | | |
| P | Patterns, Functions, and Algebraic Structures | | |
| P.1 | Linear functions model situations with a constant rate of change and can be represented algebraically, graphically, and using tables | | |

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| P.1.a | Convert from one representation of a linear function to another, including situations, tables, equations (slope-intercept form), and graphs | Graphing Linear Functions | Throughout Unit |
| P.1.b | Use representations of linear functions to analyze situations and solve problems | | |
| P.1.c | Identify the dependent and independent variable in real-world situations | Probability and Counting Theory | Independent Events Dependent Events |
| P.1.d | Identify and interpret the slope (rate of change) and y-intercept in graphs, in tables, and from equations in slope-intercept form | Graphing Linear Equations | Throughout Unit |
| P.1.e | Model and graph two linear equations in slope-intercept form on the same coordinate plane and interpret the point of intersection as the solution to the system of equations | | |
| P.2 | Properties of algebra, equality, and inequality are used to solve linear equations and inequalities | Solving Multi Step Inequalities | Throughout Unit |
| P.2.a | Use the distributive, associative, and commutative properties to simplify algebraic expressions | Properties of Numbers | Throughout Unit |

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| P.2.b | Solve one-variable equations including those involving multiple steps, rational numbers, variables on both sides, and the distributive property | Equations Solving Multi-Step Equations | Throughout Units |
| P.2.c | Solve inequalities in one variable including negative coefficients and graph the solution on a number line | | |
| P.2.d | Represent the distributive property in a variety of ways including numerically, geometrically, and algebraically | | |
| P.3 | Graphs and tables can be used to distinguish between linear and nonlinear functions | Functions | Throughout Unit |
| P.3.a | Given a table or graph determine if the function is linear | Functions | Throughout Unit |
| P.3.b | Explain the properties of linear functions in tables and graphs | Functions | Throughout Unit |
| D | Data Analysis, Statistics, and Probability | | |
| D.1 | Visual displays and summary statistics of two-variable data condense the information in data sets into usable knowledge | | |

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| D.1.a | Given a scatter plot, calculate quadrant count ratio to quantify the magnitude and strength of the association between two variables for numeric data as positive, negative, or no correlation | | |
| D.1.b | Given a scatter plot suggesting a linear relationship, draw a line of fit to make predictions | | |
| D.1.c | Use time series plots (line graphs) to analyze the trend of a set of data over time | Data Analysis | Line Graphs |
| S | Shape, Dimension, and Geometric Relationships | | |
| S.1 | Objects in the plane and their parts and attributes can be analyzed | Coordinate Plane | Throughout Unit |
| S.1.a | Classify quadrilaterals and apply angle and side properties, including the sum of the interior angles | Polygons | Throughout Unit |
| S.1.b | Apply properties of complementary, supplementary, and vertical angle relationships | Angles | Throughout Unit |
| S.1.c | Apply properties of parallel lines including corresponding angles and alternate interior angles | Angles | Throughout Unit |

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| S.2 | Direct and indirect measurements can be used to describe and make comparisons | | |
| S.2.a | Use properties of similar triangles to find unknown lengths | | |
| S.2.b | Use the Pythagorean Theorem to find unknown lengths in right triangles | Pythagorean Theorem | Throughout Unit |
| S.2.c | Use proportional reasoning to estimate distance, weight, and capacity | Ratios, Rates, and Proportions | Converting Units in Proportions |
| S.2.d | Use proportional reasoning to convert among measures including dimensional analysis | Ratios, Rates, and Proportions | Converting Units in Proportions |