

Algebra

Objective Description

Select from and use diagrams to represent real-life situations

Select from and use graphs to represent real-life situations

Select from and use number sentences to represent real-life situations

Solve and interpret functions using charts, tables, models, or graphs

Solve problems using linear functions

Solve problems using proportion formulas

Solve problems using symbolic, graphic, and numeric representations of equations

Solve problems using symbolic, graphic, and numeric representations of expressions

Solve problems using symbolic, graphic, and numeric representations of inequalities

Solve problems using symbolic, graphic, and numeric representations of variables

Understand and use algebraic language appropriately

Use algebraic methods to predict and analyze linear patterns and relationships

Use inverses in algebraic settings

Select from and use diagrams to represent real-life situations

Select from and use graphs to represent real-life situations

Geometry

Objective Description

Identify and define parallel lines

Identify or draw two-dimensional nets of three-dimensional figures

Measure angles using customary and metric units

Solve problems using the concept of symmetry

Use coordinate graphs to plot and name ordered pairs

Use geometric properties to determine angle measures

Understand the relationships between linear dimension, perimeter, area, and volume of solid geometric figures

Understand the relationships between linear dimensions, perimeter, and area of common plane geometric figures

Identify similarity and construct similar plane and solid geometric figures

Identify symmetry and construct symmetrical plane and solid geometric figures

Demonstrate a knowledge of the characteristics of angles and the relationships between them

Identify and classify plane and solid geometric figures and the relationships between them

Identify and define perpendicular lines

Identify and describe properties of plane geometric figures

Identify and distinguish types of triangles and quadrilaterals

Mathematical Processes

Objective Description

Solve problems using charts and tables

Identify relevant, missing, and extraneous information

Solve problems by selecting the most appropriate method of calculation

Solve problems by working backwards

Show that no solution or multiple solutions may exist

Solve problems using appropriate numerical representations

Solve problems using visualization and spatial reasoning

Use deductive and inductive reasoning skills

Determine the operation(s) necessary to solve simple equations

Multiply and divide fractions using models

Solve problems using operations

Solve problems by guessing and checking

Identify and describe the rule for a pattern

Solve problems by simplifying

Solve multi-step and non-routine problems

Measurement

Objective Description

Measure and understand the relationships between diameter, radius, chord, circumference, area, and volume

Solve real-world problems involving perimeter

Solve simple problems involving rates

Describe the relationship between the unit of measure and the object measured

Develop and use formulas to find area

Develop and use formulas to find perimeter

Develop and use formulas to find surface area

Develop and use formulas to find volume

Understand and apply the concept of scale and construct a simple scale drawing

Understand and apply the concept of the constant pi and its estimated values

Estimate measures and compare those estimates to the results of actual measurements

Measure area using customary and metric units

Measure surface area using customary and metric units

Select appropriate units and tools to measure to the degree of accuracy required

Estimate measures of volume

Numeration

Objective Description

Apply number relationships to explore number concepts and patterns

Apply order of operations

Understand place value concepts related to decimals

Identify the absolute value of integers

Identify factors and common factors of a set of whole numbers

Identify multiples and common multiples of whole numbers

Relate decimals to fractions

Understand and apply properties of irrational numbers

Apply the additive and multiplicative properties of equations

Apply properties of powers

Compare integers

Compare, order, and understand different rational numbers

Identify prime factors of whole numbers

Use a number line to compare numbers or solve problems

Represent exponents in equivalent forms

Operations

Objective Description

Solve division problems with fractions

Solve multiplication problems with fractions

Solve problems with percents

Solve problems with proportions and ratios

Understand relationships between and among operations

Solve multiplication problems with integers

Solve multi-step and real-world problems using common operations

Solve problems with powers and roots

Solve division problems with whole numbers with and without remainders

Solve subtraction problems with fractions

Explain and use algorithms to solve problems

Predict the relative size of solutions for equations containing fractions, decimals, and mixed and whole numbers

Solve division problems with decimals

Show evidence that computational results are reasonable

Solve subtraction problems with integers

Statistics and Probability

Objective Description

Determine the mean of a set of data

Read and interpret histograms

Understand and apply theoretical probability

Represent possible outcomes for an event using graphic or concrete models

Represent probabilities as decimals, fractions, proportions, or ratios

Represent ratios, percents, and fractions using graphic and concrete representations

Read and interpret stem-and-leaf plots

Read and interpret box and whisker plots

Read and interpret frequency tables

Make predictions about the results of probability experiments

Determine the probability and odds of events using counting principles

Determine the median of a set of data

Determine the mode of a set of data

Identify indicators of dispersion (outliers) and understand their effect on data analysis

Calculate the probability of an outcome or event