



Arkansas Mathematics Frameworks
Matched to
**SkillsTutor & SkillsBank: Intermediate
Mathematics**
Grades 6th – High School

6th Grade

Strand: Number and Operations

Standard 1 Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems

Rational Numbers

NO.1.6.1: Demonstrate conceptual understanding to find a specific percent of a number, using models, real-life examples, or explanations

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals
Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences
Proportion and Percent: Lesson 10: Percent of Change
Proportion and Percent: Lesson 11: Discounts
Proportion and Percent: Lesson 12: Simple Interest
Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

NO.1.6.2: Find decimal and percent equivalents for proper fractions and explain why they represent the same value

Proportion and Percent:

Proportion and Percent: Lesson 10: Percent of Change
Proportion and Percent: Lesson 11: Discounts
Proportion and Percent: Lesson 12: Simple Interest
Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

NO.1.6.5: Recognize and identify perfect squares and their square roots

Introduction to Algebra:

Introduction to Algebra: Lesson 4: Exponents and Square Roots

Standard 2: Properties of Number Operations

Students shall understand meanings of operations and how they relate to one another

Number Theory

NO.2.6.2: Apply the distributive property of multiplication over addition to simplify computations with whole numbers

Introduction to Algebra:

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

NO.2.6.3: Apply the addition, subtraction, multiplication and division properties of equality to one-step equations with whole numbers

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

NO.2.6.4: Apply rules (conventions) for order of operations to whole numbers with and without parentheses

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

Standard 3: Numerical Operations and Estimation

Students shall compute fluently and make reasonable estimates

Computational Fluency

NO.3.6.3: Solve, with and without appropriate technology, multi-step problems using a variety of methods and tools (i.e., objects, mental computation, paper and pencil)

Introduction to Algebra:

Introduction to Algebra: Lesson 12: Two-Step Equations

Application of Computation

NO.3.6.6: Use proportional reasoning and ratios to represent problem situations and determine the reasonableness of solutions with and without appropriate technology

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals

Proportion and Percent: Lesson 2: Ratio and Proportion

NO.3.6.7: Determine the percent of a number and solve related problems in real world situations

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals

Proportion and Percent: Lesson 7: Finding the Part by Using Number Sentences

Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences

Proportion and Percent: Lesson 10: Percent of Change

Proportion and Percent: Lesson 11: Discounts

Proportion and Percent: Lesson 12: Simple Interest

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

Strand: Algebra

Standard 4: Patterns, Relations and Functions

Students shall recognize, describe, and develop patterns, relations and functions

Patterns, Relations and Functions

A.4.6.1: Solve problems by finding the next term or missing term in a pattern or function table using real world situations

Introduction to Algebra:

Introduction to Algebra: Lesson 8: Sequences

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Introduction to Algebra: Lesson 14: Writing Equations from Words

Standard 5: Algebraic Representations

Students shall represent and analyze mathematical situations and structures using algebraic symbols

Expressions, Equations and Inequalities

A.5.6.1: Model, write and solve one-step equations by informal methods using manipulatives and appropriate technology

Introduction to Algebra:

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 14: Writing Equations from Words

A.5.6.2: Write simple algebraic expressions using appropriate operations (+, -, x, /) with one variable

Introduction to Algebra:

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 14: Writing Equations from Words

A.5.6.3: Evaluate algebraic expressions with one variable using appropriate properties and operations (+, -, x, /)

Introduction to Algebra:

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

Standard 6: Algebraic Models

Students shall develop and apply mathematical models to represent and understand quantitative relationships

Algebraic Models and Relationships

A.6.6.1: Complete, with and without appropriate technology, and interpret tables and line graphs that represent the relationship between two variables in quadrant I

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Standard 7: Analysis of Change

Students shall analyze change in various contexts

Analyze Change

A.7.6.1: Identify and compare situations with constant or varying rates of change

Introduction to Algebra:

Introduction to Algebra: Lesson 15: Distance-Rate-Time Problems

Strand: Geometry

Standard 8: Geometric Properties

Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships

Characteristics of Geometric Shapes

G.8.6.3: Identify, describe, draw, and classify triangles as equilateral, isosceles, scalene, right, acute, obtuse, and equiangular

Geometry:

Geometry: Lesson 4: Angles

G.8.6.4: Draw, label and determine relationships among the radius, diameter, center and circumference (e.g. radius is half the diameter) of a circle

Geometry:

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

Standard 10: Coordinate Geometry

Students shall specify locations and describe spatial relationships using coordinate geometry and other representational systems

Coordinate Geometry

G.10.6.1: Use ordered pairs to plot points in Quadrant I

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Strand: Measurement

Standard 12: Physical Attributes

Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects

Attributes and Tools

M.12.6.1:

Identify and select appropriate units and tools from both systems to measure

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

Geometry: Lesson 3: Time Zones

M.12.6.2:

Make conversions within the same measurement system in real world problems

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

Geometry: Lesson 3: Time Zones

M.12.6.3: Compare and contrast the differences among linear units, square units, and cubic units

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

M.12.6.4: Determine which unit of measure or measurement tool matches the context for a problem situation

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

Geometry: Lesson 3: Time Zones

Standard 13: Systems of Measurement

Students shall identify and use units, systems and processes of measurement

Attributes and Tools

M.13.6.1: Solve real world problems involving one elapsed time, counting forward and backward (calendar and clock)

Geometry:

Geometry: Lesson 3: Time Zones

M.13.6.2: Determine which unit of measure or measurement tool matches the context for a problem situation

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

M.13.6.3: Draw and measure distance to the nearest mm and 1/8 inch accurately

Geometry:

Geometry: Lesson 1: Units Length

M.13.6.4: Establish and apply formulas to find area and perimeter of triangles, rectangles, and parallelograms

Geometry:

Geometry: Lesson 6: Area of Polygons

Geometry: Lesson 8: Area of Circles

Geometry: Lesson 9: Surface Area

Attributes and Tools

M.13.6.6: Use estimation to check the reasonableness of measurements obtained from use of various instruments (including angle measures)

Strand: Data Analysis and Probability

Standard 14: Data Representation

Students shall formulate questions that can be addressed with data and collect, organize and display

Collect, organize and display data

DAP.14.6.1: Formulate questions, design studies, and collect data about a characteristic shared by two populations or different characteristics within one population

Statistics and Probability:

Statistics and Probability: Pictographs

Statistics and Probability: Bar Graphs

Statistics and Probability: Line Graphs

Statistics and Probability: Circle Graphs

DAP.14.6.2: Collect data and select appropriate graphical representations to display the data including Venn diagrams

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

DAP.14.6.3: Construct and interpret graphs, using correct scale, including line graphs and double-bar graphs

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

Standard 15: Data Analysis

Students shall select and use appropriate statistical methods to analyze data

Data Analysis

DAP.15.6.1: Interpret graphs such as double line graphs and circle graphs

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

DAP.15.6.2: Compare and interpret information provided by measures of central tendencies (mean, median and mode) and measures of spread (range)

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

Standard 16: Inferences and Predictions

Students shall develop and evaluate inferences and predictions that are based on data

DAP.16.6.1: Use observations about differences in data to make justifiable inferences

Statistics and Probability:

Statistics and Probability: Predicting Outcomes
Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

7th Grade

Strand: Number and Operations

Standard 1 Number Sense: Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems

Rational Numbers

NO.1.7.1: Relate, with and without models and pictures, concepts of ratio, proportion, and percent, including percents less than 1 and greater than 100

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals

Proportion and Percent: Lesson 2: Ratio and Proportion

Proportion and Percent: Lesson 3: Using Proportions to Find Group Prices

Proportion and Percent: Lesson 4: Finding the Part by Using Proportions

Proportion and Percent: Lesson 5: Finding the Percent by Using Proportions

Proportion and Percent: Lesson 6: Finding the Whole by Using Proportions

Proportion and Percent: Lesson 7: Finding the Part by Using Number Sentences

Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences

Proportion and Percent: Lesson 9: Finding the Whole by Using Number Sentences

Proportion and Percent: Lesson 10: Percent of Change

Proportion and Percent: Lesson 11: Discounts

Proportion and Percent: Lesson 12: Simple Interest

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

NO.1.7.2: Demonstrate, with and without appropriate technology, an understanding of place value using powers of 10 and write numbers greater than one in scientific notation

Introduction to Algebra:

Introduction to Algebra: Lesson 5: Scientific Notation

NO.1.7.3: Convert between scientific notation and standard notation using numbers greater than one.

Introduction to Algebra:

Introduction to Algebra: Lesson 5: Scientific Notation

Standard 2: Properties of Number Operations

Students shall understand meanings of operations and how they relate to one another

Number Theory

NO.2.7.1: Apply the distributive property of multiplication over addition or subtraction to simplify computations with integers, fractions and decimals

Introduction to Algebra:

Introduction to Algebra: Lesson 7: Simplifying Numerical Expressions

NO.2.7.2: Apply the addition, subtraction, multiplication and division properties of equality to one-step equations with integers, fractions, and decimals

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

NO.2.7.3: Apply rules (conventions) for order of operations to integers and positive rational numbers including parentheses, brackets or exponents

Introduction to Algebra:

Introduction to Algebra: Lesson 2: Addition and Subtraction of Integers

Introduction to Algebra: Lesson 3: Multiplication and Division of Integers

Understand Operations

NO.2.7.4: Model and develop addition, subtraction, multiplication and division of integers

Introduction to Algebra:

Introduction to Algebra: Lesson 2: Addition and Subtraction of Integers

Introduction to Algebra: Lesson 3: Multiplication and Division of Integers

Standard 3: Numerical Operations and Estimation

Students shall compute fluently and make reasonable estimates

Computational Fluency

NO.3.7.1: Compute, with and without appropriate technology, with integers and positive rational numbers using real-world situations to solve problems

Introduction to Algebra:

Introduction to Algebra: Lesson 2: Addition and Subtraction of Integers

Introduction to Algebra: Lesson 3: Multiplication and Division of Integers

NO.3.7.2: Solve with and without appropriate technology, multi-step problems using a variety of methods and tools (i.e., objects, mental computation, paper and pencil)

Introduction to Algebra:

Introduction to Algebra: Lesson 12: Two-Step Equations

Word Problems

Proportion and Percent:

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

Introduction to Algebra:

Introduction to Algebra: Thinking Skills Lesson: Prediction: Number Sequence Puzzles

Introduction to Algebra: Thinking Skills Lesson: Decision Making: Buying a House

Geometry:

Geometry: Thinking Skills Lesson: Problem Solving: Building a Sandbox

Statistics and Probability:

Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

Application of Computation

NO.3.7.5: Represent and solve problem situations that can be modeled by and solved using concepts of absolute value, exponents and square roots (for perfect squares) with and without appropriate technology

Introduction to Algebra:

Introduction to Algebra: Lesson 4: Exponents and Square Roots

Introduction to Algebra: Lesson 5: Scientific Notation

Introduction to Algebra: Lesson 6: Operations with Exponents

NO.3.7.6: Solve, with and without technology, real world percent problems

Proportion and Percent:

Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences

Proportion and Percent: Lesson 10: Percent of Change

Proportion and Percent: Lesson 11: Discounts

Proportion and Percent: Lesson 12: Simple Interest

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

Strand: Algebra**Standard 5: Algebraic Representations**

Students shall represent and analyze mathematical situations and structures using algebraic symbols

Expressions, Equations and Inequalities

A.5.7.2: Solve simple linear equations using integers and graph on a coordinate plane

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

A.5.7.3: Translate phrases and sentences into algebraic expressions and equations including parentheses and positive and rational numbers and simplify algebraic expressions by combining like terms

Introduction to Algebra:

Introduction to Algebra: Lesson 14: Writing Equations from Words

Standard 6: Algebraic Models

Students shall develop and apply mathematical models to represent and understand quantitative relationships

Algebraic Models and Relationships

A.6.7.1: Use tables and graphs to represent linear equations by plotting, with and without appropriate technology, points in a coordinate plane

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

A.6.7.2: Represent, with and without appropriate technology, linear equations by plotting and graphing points in the coordinate plane using all four quadrants given data in a table from a real world situation,

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Standard 7: Analysis of Change

Students shall analyze change in various contexts

Analyze Change

A.7.7.1: Use, with and without appropriate technology, tables and graphs to compare and identify situations with constant or varying rates of change

Introduction to Algebra:

Introduction to Algebra: Lesson 15: Distance-Rate-Time Problems

Strand: Geometry

Standard 8: Geometric Properties

Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships

Characteristics of Geometric Shapes

G.8.7.3: Recognize the pairs of angles formed and the relationship between the angles including two intersecting lines and parallel lines cut by a transversal (vertical, supplementary, complementary, corresponding, alternate interior, alternate exterior angles and linear pair)

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

G.8.7.4: Use paper or physical models to determine the sum of the measures of interior angles of triangles and quadrilaterals

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

G.8.7.5: Model and develop the concept that pi (π) is the ratio of the circumference to the diameter of any circle

Geometry:

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

Standard 10: Coordinate Geometry

Students shall specify locations and describe spatial relationships using coordinate geometry and other representational systems

Coordinate Geometry

G.10.7.1: Plot points in the coordinate plane

Introduction to Algebra:

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Strand: Measurement

Standard 12: Physical Attributes

Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects

Attributes and Tools

M.12.7.1: Understand, select and use the appropriate units and tools (metric and customary) to measure length, weight, mass and volume to the required degree of accuracy for real world problems

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

M.12.7.2: Understand relationships among units within the same system

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

M.13.7.1: Solve real world problems involving two or more elapsed times, counting forward and backward (calendar and clock)

Geometry:

Geometry: Lesson 3: Time Zones

M.13.7.2: Draw and measure distance to the nearest mm and 1/16 inch accurately

Geometry:

Geometry: Lesson 1: Units Length

Standard 13: Systems of Measurement

Students shall identify and use units, systems and processes of measurement

M.13.7.3: Develop and use strategies to solve problems involving area of a trapezoid and circumference and area of a circle

Geometry:

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

M.13.7.4: Derive and use formulas for surface area and volume of prisms and cylinders and justify those using geometric models and common materials

Geometry:

Geometry: Lesson 9: Surface Area

Geometry: Lesson 10: Volume of Prisms and Cylinders

Geometry: Lesson 11: Formulas in Geometry

M.13.7.5: Apply properties (scale factors, ratio, and proportion) of congruent or similar triangles to solve problems involving missing lengths and angle measures

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

Strand: Data Analysis and Probability

Standard 14: Data Representation

Students shall formulate questions that can be addressed with data and collect, organize and display

Collect, organize and display data

DAP.14.7.2: Explain which types of display are appropriate for various data sets (line graph for change over time, circle graph for part-to-whole comparison, scatter plot for trends)

Statistics and Probability:

Statistics and Probability: Pictographs

Statistics and Probability: Bar Graphs

Statistics and Probability: Line Graphs

Statistics and Probability: Circle Graphs

DAP.14.7.3: Construct and interpret circle graphs, box-and-whisker plots, histograms, scatter plots and double line graphs with and without appropriate technology

Statistics and Probability:

Statistics and Probability: Pictographs

Statistics and Probability: Bar Graphs

Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

Standard 15: Data Analysis

Students shall select and use appropriate statistical methods to analyze data

Data Analysis

DAP.15.7.1: Analyze data displays, including ways that they can be misleading

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

DAP.15.7.2: Analyze, with and without appropriate technology, a set of data by using and comparing measures of central tendencies (mean, median, mode) and measures of spread (range, quartile, interquartile range)

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

Standard 17: Probability

Students shall understand and apply basic concepts of probability

DAP.17.7.1: Understand that probability can take any value between 0 and 1 (events that are not going to occur have probability 0; events certain to occur have probability 1)

Statistics and Probability:

Statistics and Probability: Simple Probability
Statistics and Probability: Counting Outcomes
Statistics and Probability: Predicting Outcomes
Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

8th Grade

Strand: Number and Operations

Standard 1 Number Sense

Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems

Rational Numbers

DAP.17.7.1: Understand that probability can take any value between 0 and 1 (events that are not going to occur have probability 0; events certain to occur have probability 1)

Statistics and Probability:

Statistics and Probability: Simple Probability

Statistics and Probability: Counting Outcomes

Statistics and Probability: Predicting Outcomes

Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

NO.1.8.1: Read, write, compare and solve problems, with and without appropriate technology, including numbers less than 1 in scientific notation**Introduction to Algebra:**

Introduction to Algebra: Lesson 5: Scientific Notation

NO.1.8.2: Convert between scientific notation and standard notation, including numbers from zero to one.**Introduction to Algebra:**

Introduction to Algebra: Lesson 5: Scientific Notation

Standard 2: Properties of Number Operations**Students shall understand meanings of operations and how they relate to one another****Number Theory****NO.2.8.1: Apply the addition, subtraction, multiplication and division properties of equality to two-step equations****Introduction to Algebra:**

Introduction to Algebra: Lesson 12: Two-Step Equations

Introduction to Algebra: Lesson 14: Writing Equations from Words

NO.2.8.3: Use inverse relationships (addition and subtraction, multiplication and division, squaring and square roots) in problem solving situations**Introduction to Algebra:**

Introduction to Algebra: Lesson 4: Exponents and Square Roots

Introduction to Algebra: Lesson 5: Scientific Notation

Introduction to Algebra: Lesson 6: Operations with Exponents

Introduction to Algebra: Lesson 7: Simplifying Numerical Expressions

Standard 3: Numerical Operations and Estimation**Students shall compute fluently and make reasonable estimates****Computational Fluency****NO.3.8.2: Solve, with and without appropriate technology, multi-step problems using a variety of methods and tools (i.e. objects, mental computation, paper and pencil)****Introduction to Algebra:**

Introduction to Algebra: Lesson 12: Two-Step Equations

Application of Computation

NO.3.8.5: Calculate and find approximations of square roots with appropriate technology

Introduction to Algebra:

Introduction to Algebra: Lesson 4: Exponents and Square Roots

NO.3.8.6: Solve, with and without technology, real world percent problems including percent of increase or decrease

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals

Proportion and Percent: Lesson 5: Finding the Percent by Using Proportions

Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences

Proportion and Percent: Lesson 10: Percent of Change

Proportion and Percent: Lesson 11: Discounts

Proportion and Percent: Lesson 12: Simple Interest

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

Strand: Algebra

Standard 4: Patterns, Relations and Functions

Students shall recognize, describe, and develop patterns, relations and functions

Patterns, Relations and Functions

A.4.8.2: Using real world situations, describe patterns in words, tables, pictures, and symbolic representations

Introduction to Algebra:

Introduction to Algebra: Lesson 8: Sequences

A.4.8.3: Interpret and represent a two operation function as an algebraic equation

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

Introduction to Algebra: Lesson 14: Writing Equations from Words

Introduction to Algebra: Lesson 15: Distance-Rate-Time Problems

Standard 5: Algebraic Representations

Students shall represent and analyze mathematical situations and structures using algebraic symbols

Expressions, Equations and Inequalities

A.5.8.1: Solve and graph two-step equations and inequalities with one-variable and verify the reasonableness of the result with real world application with and without technology

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

Introduction to Algebra: Lesson 13: Graphing on the Coordinate Plane

Introduction to Algebra: Lesson 14: Writing Equations from Words

A.5.8.3: Translate sentences into algebraic equations and inequalities and combine like terms within polynomials**Introduction to Algebra:**

Introduction to Algebra: Lesson 14: Writing Equations from Words

A.5.8.4: Write and evaluate algebraic expressions using rational numbers**Introduction to Algebra:**

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

**Standard 7: Analysis of Change
Students shall analyze change in various contexts****Analyze Change****A.7.8.1: Use, with and without technology, graphs of real life situations to describe the relationships and analyze change including graphs of change (cost per minute) and graphs of accumulation (total cost)****Introduction to Algebra:**

Introduction to Algebra: Lesson 15: Distance-Rate-Time Problems

Strand: Geometry**Standard 8: Geometric Properties
Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships****Characteristics of Geometric Shapes****G.8.8.3: Determine appropriate application of geometric ideas and relationships, such as congruence, similarity, and the Pythagorean Theorem, with and without appropriate technology****Geometry:**

Geometry: Lesson 12: Pythagorean Theorem

Strand: Measurement**Standard 12: Physical Attributes**

Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects

Attributes and Tools

M.12.8.1: Understand, select and use, with and without appropriate technology, the appropriate units and tools to measure angles, perimeter, area, surface area and volume to solve real world problems

Geometry:

Geometry: Lesson 6: Area of Polygons

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

Geometry: Lesson 9: Surface Area

Geometry: Lesson 10: Volume of Prisms and Cylinders

Geometry: Lesson 11: Formulas in Geometry

Geometry: Lesson 12: Pythagorean Theorem

Geometry: Thinking Skills Lesson: Problem Solving: Building a Sandbox

M.12.8.2: Describe and apply equivalent measures using a variety of units within the same system of measurement

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

Standard 13: Systems of Measurement

Students shall identify and use units, systems and processes of measurement

M.13.8.1: Draw and apply measurement skills with fluency to appropriate levels of precision

Geometry:

Geometry: Lesson 1: Units Length

Geometry: Lesson 2: Units of Weight and Capacity

M.13.8.2: Solve problems involving volume and surface area of pyramids, cones and composite figures, with and without appropriate technology

Geometry:

Geometry: Lesson 10: Volume of Prisms and Cylinders

M.13.8.4: Find the distance between two points on a coordinate plane using with the Pythagorean Theorem

Geometry:

Geometry: Lesson 12: Pythagorean Theorem

Strand: Data Analysis and Probability

Standard 14: Data Representation

Students shall formulate questions that can be addressed with data and collect, organize and display

Collect, organize and display data

DAP.14.8.2: Explain which types of display are appropriate for various data sets (scatter plot for relationship between two variants and line of best fit)

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs

DAP.14.8.3: Interpret or solve real-world problems using data from charts, line plots, stem-and leaf plots, double-bar graphs, line graphs, box-and whisker plots, scatter plots, frequency tables or double line graphs

Statistics and Probability:

Statistics and Probability: Pictographs
Statistics and Probability: Bar Graphs
Statistics and Probability: Line Graphs
Statistics and Probability: Circle Graphs
Statistics and Probability: Measures of Central Tendency

Standard 15: Data Analysis

Students shall select and use appropriate statistical methods to analyze data

Data Analysis

DAP.15.8.2: Analyze, with and without appropriate technology, graphs by comparing measures of central tendencies and measures of spread

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

DAP.15.8.3: Given at least one of the measures of central tendency create a data set

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

Standard 16: Inferences and Predictions

Students shall develop and evaluate inferences and predictions that are based on data

DAP.16.8.1: Use observations about differences between sets of data to make conjectures about the populations from which the data was taken

Statistics and Probability:

Algebra I

Language of Algebra

Content Standard 1. Students will develop the language of algebra including specialized vocabulary, symbols, and operations.

LA.1.AI.1 Evaluate algebraic expressions, including radicals, by applying the order of operations

Introduction to Algebra:

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

LA.1.AI.3 Apply the laws of (integral) exponents

Introduction to Algebra:

Introduction to Algebra: Lesson 4: Exponents and Square Roots

Introduction to Algebra: Lesson 5: Scientific Notation

Introduction to Algebra: Lesson 6: Operations with Exponents

LA.1.AI.4 Solve problems involving scientific notation

Introduction to Algebra:

Introduction to Algebra: Lesson 5: Scientific Notation

LA.1.AI.5 Perform polynomial operations (addition, subtraction, multiplication) with and without manipulatives

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

LA.1.AI.8 Simplify radical expressions such as

Introduction to Algebra:

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

Solving Equations and Inequalities

Content Standard 2. Students will write, with and without appropriate technology, equivalent forms of equations, inequalities, and systems of equations and solve with fluency.

SEI.2.AI.4 Solve and graph simple absolute value equations and inequalities Ex. $|x| = 5$, $|x| \leq 5$, $|x| > 5$

Introduction to Algebra: Lesson 1: Absolute Value

Non-linear Functions

Content Standard 4. Students will compare the properties in the family of functions.

NLF.3.AI.4 Recognize function families and their connections including vertical shift and reflection over the x-axis

- **Quadratics**
- **Absolute value**
- **Exponential functions**

Introduction to Algebra:

Introduction to Algebra: Lesson 1: Absolute Value

Introduction to Algebra: Lesson 4: Exponents and Square Roots

Introduction to Algebra: Lesson 6: Operations with Exponents

Data Interpretation and Probability

Content Standard 5. Students will compare various methods of reporting data to make inferences or predictions.

DIP.5.AI.4 Determine the effects of changes in the data set on the measures of central tendency

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

DIP.5.AI.8 Compute simple probability with and without replacement

Statistics and Probability:

Statistics and Probability: Simple Probability

Statistics and Probability: Counting Outcomes

Statistics and Probability: Predicting Outcomes

Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

Algebra A

Language of Algebra

Content Standard 1. Students will develop the language of algebra including specialized vocabulary, symbols, and operations.

LA.1.AI.1 Evaluate algebraic expressions, including radicals, by applying the order of operations

Introduction to Algebra:

Introduction to Algebra: Lesson 9: Evaluating Variable Expressions

LA.1.AI.2 Translate word phrases and sentences into expressions, equations, and inequalities, and vice versa

Introduction to Algebra: Lesson 14: Writing Equations from Words

LA.1.AI.4 Solve problems involving scientific notation

Introduction to Algebra:

Introduction to Algebra: Lesson 5: Scientific Notation

Introduction to Algebra: Lesson 6: Operations with Exponents

Introduction to Algebra: Lesson 7: Simplifying Numerical Expressions

LA.1.AI.6 Simplify algebraic fractions by factoring

Introduction to Algebra:

Introduction to Algebra: Lesson 7: Simplifying Numerical Expressions

Solving Equation and Inequalities

Content Standard 2. Students will write, with and without appropriate technology, equivalent forms of equations, inequalities, and systems of equations and solve with fluency.

SEI.2.AI.3 Solve linear formulas and literal equations for a specified variable

Introduction to Algebra:

Introduction to Algebra: Lesson 11: One-Step Equations

Introduction to Algebra: Lesson 12: Two-Step Equations

SEI.2.AI.4 Solve and graph simple absolute value equations and inequalities

Introduction to Algebra:

Introduction to Algebra: Lesson 1: Absolute Value

SEI.2.AI.5 Solve real world problems that involve a combination of rates, proportions and percents

Proportion and Percent:

Proportion and Percent: Lesson 1: Relationship of Ratios, Percents and Decimals

Proportion and Percent: Lesson 2: Ratio and Proportion

Proportion and Percent: Lesson 3: Using Proportions to Find Group Prices

Proportion and Percent: Lesson 4: Finding the Part by Using Proportions

Proportion and Percent: Lesson 5: Finding the Percent by Using Proportions

Proportion and Percent: Lesson 6: Finding the Whole by Using Proportions

Proportion and Percent: Lesson 7: Finding the Part by Using Number Sentences

Proportion and Percent: Lesson 8: Finding the Percent by Using Number Sentences

Proportion and Percent: Lesson 9: Finding the Whole by Using Number Sentences

Proportion and Percent: Lesson 10: Percent of Change

Proportion and Percent: Lesson 11: Discounts

Proportion and Percent: Lesson 12: Simple Interest

Proportion and Percent: Thinking Skills Lesson: Comparison: Movie House Management

Introduction to Algebra:

Introduction to Algebra: Lesson 15: Distance-Rate-Time Problems

Algebra B

Language of Algebra

Content Standard 1. Students will develop the language of algebra including specialized vocabulary, symbols, and operations.

LA.1.AI.4 Solve problems involving scientific notation

Introduction to Algebra:

Introduction to Algebra: Lesson 5: Scientific Notation

LA.1.AI.6 Simplify algebraic fractions by factoring

Introduction to Algebra:

Introduction to Algebra: Lesson 10: Simplifying Variable Expressions

Solving Equations and Inequalities

Content Standard 2. Students will write, with and without appropriate technology, equivalent forms of equations, inequalities, and systems of equations and solve with fluency.

SEI.2.AI.4 Solve and graph simple absolute value equations and inequalities

Introduction to Algebra:

Introduction to Algebra: Lesson 1: Absolute Value

Data Interpretation and Probability

Content Standard 5. Students will compare various methods of reporting data to make inferences or predictions.

DIP.5.AI.4 Determine the effects of changes in the data set on the measures of central tendency

Statistics and Probability:

Statistics and Probability: Measures of Central Tendency

DIP.5.AI.8 Compute simple probability with and without replacement

Statistics and Probability:

Statistics and Probability: Simple Probability

Geometry

Language of Geometry

Content Standard 1. Students will develop the language of geometry including specialized vocabulary, reasoning, and application of theorems, properties, and postulates.

LG.1.G.1 Define, compare and contrast inductive reasoning and deductive reasoning for making predictions based on real world situations

- **Venn diagrams**
- **Matrix logic**
- **Conditional statements (statement, inverse, converse, and contrapositive)**

Statistics and Probability:

Statistics and Probability: Predicting Outcomes

Statistics and Probability: Thinking Skills Lesson: Prediction: The Real Cost of Living

LG.1.G.2 Represent points, lines, and planes pictorially with proper identification, as well as basic concepts derived from these undefined terms, such as segments, rays, and angles

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

LG.1.G.4 Apply, with and without appropriate technology, definitions, theorems, properties, and postulates related to such topics as complementary, supplementary, vertical angles, linear pairs, and angles formed by perpendicular lines

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

Geometry: Lesson 12: Pythagorean Theorem

LG.1.G.5 Explore, with and without appropriate technology, the relationship between angles formed by two lines cut by a transversal to justify when lines are parallel

Geometry:

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

Triangles

Content Standard 2. Students will identify and describe types of triangles and their special segments. They will use logic to apply the properties of congruence, similarity, and inequalities. The students will apply the Pythagorean Theorem and Trigonometric ratios to solve problems in real world situations.

T.2.G.4 Apply the Pythagorean Theorem and its converse in solving practical problems

Geometry:

Geometry: Lesson 12: Pythagorean Theorem

Measurement

Content Standard 3. Students will measure and compare, while using appropriate formulas, tools, and technology to solve problems dealing with length, perimeter, area and volume.

M.3.G.2 Apply, using appropriate units, appropriate formulas (area, perimeter, surface area, volume) to solve application problems involving polygons, prisms, pyramids, cones, cylinders, spheres as well as composite figures, expressing solutions in both exact and approximate forms

Geometry:

Geometry: Lesson 6: Area of Polygons

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

Geometry: Lesson 9: Surface Area

Geometry: Lesson 10: Volume of Prisms and Cylinders

Geometry: Lesson 11: Formulas in Geometry

Geometry: Lesson 12: Pythagorean Theorem

Geometry: Thinking Skills Lesson: Problem Solving: Building a Sandbox

Geometry A

Language of Geometry

Content Standard 1. Students will develop the language of geometry including specialized vocabulary, reasoning, and application of theorems, properties, and postulates.

LG.1.G.2 Represent points, lines, and planes pictorially with proper identification, as well as basic concepts derived from these undefined terms, such as segments, rays, and angles

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Geometry: Lesson 5: Lines and Angles

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Geometry: Lesson 12: Pythagorean Theorem

LG.1.G.5 Explore, with and without appropriate technology, the relationship between angles formed by two lines cut by a transversal to justify when lines are parallel

Geometry: Lesson 4: Angles

Geometry: Lesson 5: Lines and Angles

Triangles

Content Standard 2. Students will identify and describe types of triangles and their special segments. They will use logic to apply the properties of congruence, similarity, and inequalities. The students will apply the Pythagorean Theorem and trigonometric ratios to solve problems in real world situations.

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Geometry: Lesson 12: Pythagorean Theorem

Geometry B

Triangles

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Geometry: Lesson 6: Area of Polygons

Geometry: Lesson 7: Circumference of Circles

Geometry: Lesson 8: Area of Circles

Geometry: Lesson 9: Surface Area

Geometry: Lesson 10: Volume of Prisms and Cylinders

Geometry: Lesson 11: Formulas in Geometry

Geometry: Lesson 12: Pythagorean Theorem

Geometry: Thinking Skills Lesson: Problem Solving: Building a Sandbox