



Arkansas Mathematics Frameworks

Matched to

SkillsTutor & SkillsBank: Basic 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

Computation:

Computation: Lesson 19: Introduction to Ratio and Percent

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

Computation: Lesson 23: Finding the Percent of a Number

Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

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

Computation:

Computation: Lesson 20: Interchanging Fractions and Decimals

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

NO.1.6.3: Round and compare decimals to a given place value including thousandths

Number Concepts:

Number Concepts: Lesson 4: Rounding

NO.1.6.4: Convert, compare and order fractions (mixed numbers and improper fractions) decimals and percents and find their approximate locations on a number line

Number Concepts:

Number Concepts: Lesson 3: Number Lines

Computation:

Computation: Lesson 20: Interchanging Fractions and Decimals

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

Standard 2: Properties of Number Operations

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

Number Theory

NO.2.6.1: Use divisibility rules to determine if a number is a factor of another number (4, 6, and 9)

Number Concepts:

Number Concepts: Lesson 6: Multiples and Factors

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

Number Concepts:

Number Concepts: Lesson 29: The Distributive Property

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

Number Concepts:

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities

Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences

Computation:

Computation: Lesson 1: Addition of Whole Numbers

Computation: Lesson 2: Subtraction of Whole Numbers

Computation: Lesson 3: Multiplication of Whole Numbers

Computation: Lesson 4: Division of Whole Numbers

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

Number Concepts:

Number Concepts: Lesson 17: The Commutative Property

Number Concepts: Lesson 18: The Associative Property

Number Concepts: Lesson 29: The Distributive Property

Number Concepts: Lesson 20: Identity Elements and Inverses

Understand Operations

NO.2.6.5: Model multiplication and division of fractions (including mixed numbers) and decimals using pictures and physical objects

Computation:

Computation: Lesson 15: Multiplication of Fractions

Computation: Lesson 16: Multiplication of Mixed Numerals

Computation: Lesson 17: Division of Fractions

Computation: Lesson 18: Division of Mixed Numerals

Standard 3: Numerical Operations and Estimation
Students shall compute fluently and make reasonable estimates

Computational Fluency

NO.3.6.1: Apply, with and without appropriate technology, algorithms with computational fluency to perform whole number operations (+, -, x, /)

Computation:

Computation: Lesson 1: Addition of Whole Numbers
Computation: Lesson 2: Subtraction of Whole Numbers
Computation: Lesson 3: Multiplication of Whole Numbers
Computation: Lesson 4: Division of Whole Numbers
Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals

NO.3.6.2: Develop and analyze algorithms for computing with fractions (including mixed numbers) and decimals and demonstrate, with and without technology, computational fluency in their use and justify the solution

Computation:

Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals
Computation: Thinking Skills Lesson: Problem Solving: Planning a Pizza

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)

Computation:

Computation: Lesson 1: Addition of Whole Numbers
Computation: Lesson 2: Subtraction of Whole Numbers
Computation: Lesson 3: Multiplication of Whole Numbers
Computation: Lesson 4: Division of Whole Numbers
Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals
Computation: Thinking Skills Lesson: Problem Solving: Planning a Pizza
Computation: Lesson 19: Introduction to Ratio and Percent
Computation: Lesson 20: Interchanging Fractions and Decimals
Computation: Lesson 21: Interchanging Percents and Decimals
Computation: Lesson 22: Interchanging Fractions and Percents
Computation: Lesson 23: Finding the Percent of a Number
Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

Estimation**NO.3.6.4: Estimate reasonable solutions to problem situations involving fractions and decimals****Number Concepts:**

Number Concepts: Lesson 5: Estimating

Application of Computation**NO.3.6.5: Find and use factorization (tree diagram) including prime factorization of composite numbers (expanded and exponential notation) to determine the greatest common factor (GCF) and least common multiple (LCM)****Number Concepts:**

Number Concepts: Lesson 6: Multiples and Factors
Number Concepts: Lesson 7: Even, Odd, and Prime Numbers
Number Concepts: Lesson 8: Prime Factorization
Number Concepts: Lesson 9: The Greatest Common Factor (GCF)
Number Concepts: Lesson 10: Least Common Multiple and Denominator
Number Concepts: Lesson 11: Simplifying Fractions

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

Computation: Lesson 19: Introduction to Ratio and Percent

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

Computation:

Computation: Lesson 19: Introduction to Ratio and Percent

Computation: Lesson 23: Finding the Percent of a Number

Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities

Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences

Number Concepts: Lesson 17: The Commutative Property

Number Concepts: Lesson 18: The Associative Property

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities

Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences

Number Concepts: Lesson 17: The Commutative Property

Number Concepts: Lesson 18: The Associative Property

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities
Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 17: The Commutative Property
Number Concepts: Lesson 18: The Associative Property

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities
Number Concepts: Lesson 13: Finding the Missing Operations
Number Concepts: Lesson 14: Finding the Missing Numbers in Equations
Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities
Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 17: The Commutative Property
Number Concepts: Lesson 18: The Associative Property

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.8.6.1: Identify three-dimensional geometric figures using models (rectangular prisms, cylinders, cones, pyramids and spheres)

Measurement and Geometry:

Measurement and Geometry: Lesson 8: Terms in Geometry
Measurement and Geometry: Lesson 9: Plane and Solid Figures

Standard 11: Visualization and Geometric Models

Students shall use visualization, spatial reasoning and geometric modeling

Spatial Visualization and Models

G.11.6.1: Identify two-dimensional patterns (nets) for three-dimensional solids, such as prisms, pyramids, cylinders, and cones

Measurement and Geometry:

Measurement and Geometry: Lesson 9: Plane and Solid Figures

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler
Measurement and Geometry: Lesson 2: Appropriate Units of Measure
Measurement and Geometry: Lesson 3: Time and the Calendar
Measurement and Geometry: Lesson 4: Temperature

M.12.6.2: Make conversions within the same measurement system in real world problems

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler
Measurement and Geometry: Lesson 2: Appropriate Units of Measure
Measurement and Geometry: Lesson 4: Temperature

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler
Measurement and Geometry: Lesson 2: Appropriate Units of Measure
Measurement and Geometry: Lesson 3: Time and the Calendar
Measurement and Geometry: Lesson 4: Temperature

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)

Measurement and Geometry:

Measurement and Geometry: Lesson 3: Time and the Calendar

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler
Measurement and Geometry: Lesson 2: Appropriate Units of Measure
Measurement and Geometry: Lesson 3: Time and the Calendar
Measurement and Geometry: Lesson 4: Temperature

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

Measurement and Geometry: Lesson 1: Reading a Ruler

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

Measurement and Geometry:

Measurement and Geometry: Lesson 10: Perimeter of a Polygon

Measurement and Geometry: Lesson 11: Area and Volume

Measurement and Geometry: Thinking Skills Lesson: Problem Solving: Designing a Playground

Attributes and Tools

M.13.6.5: Find the distance between two points on a number line

Number Concepts:

Number Concepts: Lesson 3: Number Lines

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

Number Concepts:

Number Concepts: Lesson 5: Estimating

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

Computation:

Computation: Lesson 19: Introduction to Ratio and Percent

Computation: Lesson 20: Interchanging Fractions and Decimals

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

Computation: Lesson 23: Finding the Percent of a Number

Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

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

Number Concepts:

Number Concepts: Lesson 1: Place Value of Digits

Number Concepts: Lesson 2: Expanded Notation

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

Number Concepts:

Number Concepts: Lesson 2: Expanded Notation

NO.1.7.4: Find decimal and percent equivalents for mixed numbers and explain why they represent the same value**Computation:**

Computation: Lesson 20: Interchanging Fractions and Decimals

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

NO.1.7.5: Compare and represent integers, fractions, decimals and mixed numbers and find their approximate location on a number line**Number Concepts:**

Number Concepts: Lesson 3: Number Lines

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****Number Concepts:**

Number Concepts: Lesson 29: The Distributive Property

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

Number Concepts: Lesson 12: Equations and Inequalities

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities

Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences

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

Number Concepts: Lesson 17: The Commutative Property

Number Concepts: Lesson 18: The Associative Property

Number Concepts: Lesson 29: The Distributive Property

Number Concepts: Lesson 20: Identity Elements and Inverses

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

Computation: Lesson 1: Addition of Whole Numbers
Computation: Lesson 2: Subtraction of Whole Numbers
Computation: Lesson 3: Multiplication of Whole Numbers
Computation: Lesson 4: Division of Whole Numbers
Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals

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

Computation:

Computation: Lesson 1: Addition of Whole Numbers
Computation: Lesson 2: Subtraction of Whole Numbers
Computation: Lesson 3: Multiplication of Whole Numbers
Computation: Lesson 4: Division of Whole Numbers
Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals

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)

Computation:

Computation: Lesson 1: Addition of Whole Numbers
Computation: Lesson 2: Subtraction of Whole Numbers

Computation: Lesson 3: Multiplication of Whole Numbers
Computation: Lesson 4: Division of Whole Numbers
Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals

Estimation

NO.3.7.3: Determine when an Estimate is sufficient and use Estimation to decide whether answers are reasonable in problems including fractions and decimals

Number Concepts:

Number Concepts: Lesson 5: Estimating

Application of Computation

NO.3.7.4: Apply factorization, LCM, and GCF to solve problems using more than two numbers and explain the solution

Number Concepts:

Number Concepts: Lesson 6: Multiples and Factors
Number Concepts: Lesson 7: Even, Odd, and Prime Numbers
Number Concepts: Lesson 8: Prime Factorization
Number Concepts: Lesson 9: The Greatest Common Factor (GCF)
Number Concepts: Lesson 10: Least Common Multiple and Denominator
Number Concepts: Lesson 11: Simplifying Fractions

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

Number Concepts:

Number Concepts: Lesson 1: Place Value of Digits
Number Concepts: Lesson 2: Expanded Notation

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

Computation:

Computation: Lesson 19: Introduction to Ratio and Percent
Computation: Lesson 21: Interchanging Percents and Decimals
Computation: Lesson 22: Interchanging Fractions and Percents

Computation: Lesson 23: Finding the Percent of a Number
Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

Standard 5: Algebraic Representations

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

Expressions, Equations and Inequalities

A.5.7.1: Solve and graph one-step linear equations and inequalities using a variety of methods (i.e., hands-on, inverse operations, symbolic) with real world application with and without technology

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities
Number Concepts: Lesson 13: Finding the Missing Operations
Number Concepts: Lesson 14: Finding the Missing Numbers in Equations
Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities
Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 20: Identity Elements and Inverses

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities
Number Concepts: Lesson 13: Finding the Missing Operations
Number Concepts: Lesson 14: Finding the Missing Numbers in Equations
Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities
Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 20: Identity Elements and Inverses

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.8.7.1: Identify, draw, classify and compare geometric figures using models and real world examples

Measurement and Geometry:

Measurement and Geometry: Lesson 9: Plane and Solid Figures

G.8.7.2: Investigate geometric properties and their relationships in one, two and three dimensions models, including convex and concave polygons

Measurement and Geometry: Lesson 9: Plane and Solid Figures

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler

Measurement and Geometry: Lesson 2: Appropriate Units of Measure

Measurement and Geometry: Lesson 4: Temperature

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler

Measurement and Geometry: Lesson 2: Appropriate Units of Measure

Measurement and Geometry: Lesson 4: Temperature

M.12.7. 3: Find different areas for a given perimeter and find a different perimeter for a given area

Measurement and Geometry:

Measurement and Geometry: Lesson 10: Perimeter of a Polygon

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

Measurement and Geometry:

Measurement and Geometry: Lesson 3: Time and the Calendar

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler

Standard 13: Systems of Measurement

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

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

Measurement and Geometry:

Measurement and Geometry: Lesson 10: Perimeter of a Polygon

Measurement and Geometry: Lesson 11: Area and Volume

Measurement and Geometry: Thinking Skills Lesson: Problem Solving: Designing a Playground

M.13.7.6: Find the distance between two points on a number line and locate the midpoint

Number Concepts:

Number Concepts: Lesson 3: Number Lines

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

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

Number Concepts:

Number Concepts: Lesson 2: Expanded Notation

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

Number Concepts:

Number Concepts: Lesson 2: Expanded Notation

NO.1.8.3: Compare and order real numbers including irrational numbers and find their approximate location on a number line (Use technology when appropriate)

Number Concepts:

Number Concepts: Lesson 3: Number Lines

NO.1.8.4: Understand and justify classifications of numbers in the real number system

Number Concepts:

Number Concepts: Lesson 1: Place Value of Digits

Number Concepts: Lesson 2: Expanded Notation

Number Concepts: Lesson 3: Number Lines

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities
Number Concepts: Lesson 13: Finding the Missing Operations
Number Concepts: Lesson 14: Finding the Missing Numbers in Equations
Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities
Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 17: The Commutative Property
Number Concepts: Lesson 18: The Associative Property
Number Concepts: Lesson 29: The Distributive Property
Number Concepts: Lesson 20: Identity Elements and Inverses
Number Concepts: Thinking Skills Lesson: Induction; A Treasure Hunt

NO.2.8.2: Understand and apply the inverse and identity properties**Number Concepts:**

Number Concepts: Lesson 20: Identity Elements and Inverses

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

Number Concepts: Lesson 20: Identity Elements and Inverses

NO.2.8.4: Apply rules (conventions) for order of operations to rational numbers**Number Concepts:**

Number Concepts: Lesson 17: The Commutative Property
Number Concepts: Lesson 18: The Associative Property
Number Concepts: Lesson 29: The Distributive Property
Number Concepts: Lesson 20: Identity Elements and Inverses

Understand Operations**NO.2.8.5: Model and develop addition, subtraction, multiplication and division of rational numbers****Computation:**

Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals
Computation: Thinking Skills Lesson: Problem Solving: Planning a Pizza

Standard 3: Numerical Operations and Estimation
Students shall compute fluently and make reasonable estimates

Computational Fluency

NO.3.8.1: Compute, with and without appropriate technology, with rational numbers in multi-step problems

Computation:

Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals
Computation: Thinking Skills Lesson: Problem Solving: Planning a Pizza

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)

Computation:

Computation: Lesson 5: Addition of Decimals
Computation: Lesson 6: Subtraction of Decimals
Computation: Lesson 7: Multiplication of Decimals
Computation: Lesson 8: Division of Decimals
Computation: Thinking Skills Lesson: Comparison: Renting a Car
Computation: Lesson 9: Addition of Like Fractions
Computation: Lesson 10: Addition of Unlike Fractions
Computation: Lesson 11: Addition of Mixed Numerals
Computation: Lesson 12: Subtraction of Like Fractions
Computation: Lesson 13: Subtraction of Unlike Fractions
Computation: Lesson 14: Subtraction of Mixed Fractions
Computation: Lesson 15: Multiplication of Fractions
Computation: Lesson 16: Multiplication of Mixed Numerals
Computation: Lesson 17: Division of Fractions
Computation: Lesson 18: Division of Mixed Numerals
Computation: Thinking Skills Lesson: Problem Solving: Planning a Pizza

Estimation

NO.3.8.3: Use Estimation to solve problems involving rational numbers; including ratio, proportion, percent (increase or decrease) then judge the reasonableness of solutions

Number Concepts:

Number Concepts: Lesson 5: Estimating

Application of Computation**NO.3.8.4: Apply factorization to find LCM and GCF of algebraic expressions****Number Concepts:**

Number Concepts: Lesson 6: Multiples and Factors

Number Concepts: Lesson 7: Even, Odd, and Prime Numbers

Number Concepts: Lesson 8: Prime Factorization

Number Concepts: Lesson 9: The Greatest Common Factor (GCF)

Number Concepts: Lesson 10: Least Common Multiple and Denominator

Number Concepts: Lesson 11: Simplifying Fractions

Number Concepts: Thinking Skills Lesson: Classification: A Trip to Numberland

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

Computation: Lesson 19: Introduction to Ratio and Percent

Computation: Lesson 21: Interchanging Percents and Decimals

Computation: Lesson 22: Interchanging Fractions and Percents

Computation: Lesson 23: Finding the Percent of a Number

Computation: Thinking Skills Lesson: Decision Making: A Job at the Ballpark

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.8.8.1: Form generalizations and validate conclusions about properties of geometric shapes****Measurement and Geometry:**

Measurement and Geometry: Lesson 9: Plane and Solid Figures

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

Measurement and Geometry:

Measurement and Geometry: Lesson 10: Perimeter of a Polygon

Measurement and Geometry: Lesson 11: Area and Volume

Measurement and Geometry: Thinking Skills Lesson: Problem Solving: Designing a Playground

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler

Measurement and Geometry: Lesson 2: Appropriate Units of Measure

Measurement and Geometry: Lesson 4: Temperature

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

Measurement and Geometry:

Measurement and Geometry: Lesson 1: Reading a Ruler

Measurement and Geometry: Lesson 2: Appropriate Units of Measure

Measurement and Geometry: Lesson 4: Temperature

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

Measurement and Geometry:

Measurement and Geometry: Lesson 10: Perimeter of a Polygon

Measurement and Geometry: Lesson 11: Area and Volume

Measurement and Geometry: Thinking Skills Lesson: Problem Solving: Designing a Playground

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

Number Concepts:

Number Concepts: Lesson 12: Equations and Inequalities

Number Concepts: Lesson 13: Finding the Missing Operations

Number Concepts: Lesson 14: Finding the Missing Numbers in Equations

Number Concepts: Lesson 15: Finding the Missing Numbers in Inequalities

Number Concepts: Lesson 16: Missing Numbers in Related Number Sentences
Number Concepts: Lesson 17: The Commutative Property
Number Concepts: Lesson 18: The Associative Property
Number Concepts: Lesson 29: The Distributive Property
Number Concepts: Lesson 20: Identity Elements and Inverses
Number Concepts: Thinking Skills Lesson: Induction; A Treasure Hunt

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

Number Concepts:

Number Concepts: Lesson 2: Expanded Notation