

Mathletics

Missouri Program of Studies

Skill Quests

Grades 3 – 6
July, 2022

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Skill Quests

July 2022

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Grade 3

1 Number Sense and Operations in Base Ten

1.1 Use place value understanding and properties of operations to perform multi-digit arithmetic

Outcome	Quests	Content
3.NBT.A.1 Round whole numbers to the nearest 10 or 100.	Round to the nearest 10 or 100	Rounding numbers up to 1000 to the nearest 100
		Rounding numbers up to 1000 to the nearest 10
3.NBT.A.2 Read, write and identify whole numbers within one hundred thousand using base ten numerals, number names and expanded form.	Read, write & partition 5-digit numbers	Reading & writing numbers to 5 digits
		Partitioning 5-digit numbers
3.NBT.A.3 Demonstrate fluency with addition and subtraction within 1000.	Add & subtract within 1000	Add & subtract up to 3-digits: number line
		Add & subtract up to 3-digits: jump strategy
		Add & subtract two 2-digits: place value blocks
		Add & subtract up to 3-digits: expanded form
		Add & subtract two 2-digits: compensation
3.NBT.A.4 Multiply whole numbers by multiples of 10 in the range 10-90.	Multiply by a multiple of 10	Multiplying by a multiple of 10

2 Number Sense and Operations in Fractions

2.1 Develop understanding of fractions as numbers

Outcome	Quests	Content
3.NF.A.1 Understand a unit fraction as the quantity formed by one part when a whole is partitioned into equal parts.	Introduction to fractions	Introducing eighths
		Halves, quarters & eighths of objects or shapes
		Halves, thirds or quarters of shapes: partitioning
		Introducing sixths
3.NF.A.2.a Describe the numerator as representing the number of pieces being considered.	The numerator & denominator	Introducing the numerator & denominator
3.NF.A.3.a Understand the whole is the interval from 0 to 1.	Locate unit fractions on a number line	Locating unit fractions on a number line
3.NF.A.4 Demonstrate that two fractions are equivalent if they are the same size or the same point on a number line.	Investigate equivalent fractions	Investigating equivalent fractions
3.NF.A.5 Recognize and generate equivalent fractions using visual models, and justify why the fractions are equivalent.	Find simple equivalent fractions	Recognize & generate simple equivalent fractions
3.NF.A.6 Compare two fractions with the same numerator or denominator using the symbols $>$, $=$ or $<$, and justify the solution.	Compare fractions	Comparing fractions: same numerator or denominator

3 Relationships and Algebraic Thinking

3.1 Represent and solve problems involving multiplication and division

Outcome	Quests	Content
3.RA.A.1 Interpret products of whole numbers.	Introduction to multiplication	Multiplying using arrays & repeated addition
3.RA.A.2 Interpret quotients of whole numbers.	Introduction to division	Dividing by sharing (up to 50)
		Dividing by grouping (up to 50)
		Creating & solving problems involving equal groups
3.RA.A.4 Use multiplication and division within 100 to solve problems.	Multiplication & division problems	Using repeated subtraction to divide
		Multiplication problems: fair share/equal grouping
3.RA.A.5 Determine the unknown number in a multiplication or division equation relating three whole numbers.	Multiply & divide: finding the unknown	Multiplication/division problems: arrays
		Multiplying & dividing: finding the unknown

3.2 Understand properties of multiplication and the relationship between multiplication and division

Outcome	Quests	Content
3.RA.B.6 Apply properties of operations as strategies to multiply and divide.	Multiplication properties	Multiplication properties

3.3 Multiply and divide within 100

Outcome	Quests	Content
3.RA.C.7 Multiply and divide with numbers and results within 100 using strategies such as the relationship between multiplication and division or properties of operations. Know all products of two one-digit numbers.	Multiplication & division facts	Multiplication facts: 2, 4, 8
		Multiplication facts: 5, 10
		Multiplication facts: 3, 6, 9
		Multiplication facts: 7
		Recalling multiplication facts to 5 x 5
		Recalling multiplication facts to 10 x 10

		Division facts: 2, 4, 8
		Division facts: 5, 10
		Division facts: 3, 6, 9
		Division facts: 7

3.4 Use the four operations to solve word problems

Outcome	Quests	Content
3.RA.D.9 Write and solve two-step problems involving variables using any of the four operations.	2-step word problems: 4 operations	2-step word problems with the 4 operations

3.5 Identify and explain arithmetic patterns

Outcome	Quests	Content
3.RA.E.11 Identify arithmetic patterns and explain the patterns using properties of operations.	Number patterns	Identifying & creating number patterns
		Identifying odd & even number patterns
		Exploring number patterns in tables & charts

4 Geometry and Measurement

4.1 Reason with shapes and their attributes

Outcome	Quests	Content
3.GM.A.1 Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category.	Shapes & their attributes	Sorting & naming quadrilaterals
		Comparing & describing two-dimensional shapes
3.GM.A.2 Distinguish rhombuses and rectangles as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to these subcategories.	Recognize different quadrilaterals	Recognizing between different quadrilaterals
3.GM.A.3 Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.	Partition shapes	Partitioning shapes into parts with equal areas

4.2 Solve problems involving the measurement of time, liquid volumes and weights of objects

Outcome	Quests	Content
3.GM.B.4 Tell and write time to the nearest minute.	Tell & write time to the minute	Telling time to the minute, digital & analog
		Using timetables
3.GM.B.5 Estimate time intervals in minutes.	Calculate elapsed time	Calculating elapsed time
3.GM.B.7 Measure or estimate length, liquid volume and weight of objects.	Length	Estimating & measuring in centimeters
		Estimating & measuring in centimeters & meters
	Liquid volume	Estimating, comparing & measuring in liters
		Liquid volume: milliliters
	Mass	Mass: kilograms
		Mass: grams
Mass: measuring in grams & kilograms		
	3.GM.B.8 Use the four operations to solve problems involving lengths, liquid volumes or weights given in the same units.	Length, volume & weight word problems
Solving word problems involving liquid volume		

		Solving 1-step word problems involving mass
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4.3 Understand concepts of area

Outcome	Quests	Content
3.GM.C.9 Calculate area by using unit squares to cover a plane figure with no gaps or overlaps.	Measure area with unit squares	Measuring area with unit squares
3.GM.C.10 Label area measurements with squared units.	Measure area with formal units	Introducing formal units for area
		Measuring the area of rectangles
3.GM.C.11 Demonstrate that tiling a rectangle to find the area and multiplying the side lengths result in the same value.	Estimate area with tiling	Estimating area with tiling
3.GM.C.12 Multiply whole-number side lengths to solve problems involving the area of rectangles.	Find the area with repeated addition	Finding the area of rectangles, repeated addition
3.GM.C.14 Decompose a rectangle into smaller rectangles to find the area of the original rectangle.	Find the area of rectilinear figures	Finding the area of rectilinear figures

4.4 Understand concepts of perimeter

Outcome	Quests	Content
3.GM.D.15 Solve problems involving perimeters of polygons.	Perimeter problems	Introducing perimeter
		Finding the perimeter of rectangles
		Finding a missing side length given the perimeter
		Finding the perimeter of polygons
3.GM.D.16 Understand that rectangles can have equal perimeters but different areas, or rectangles can have equal areas but different perimeters.	Perimeter & area	Finding the perimeter & area of rectangles
		Relating perimeter & area

5 Data and Statistics

5.1 Represent and analyze data

Outcome	Quests	Content
3.DS.A.1 Create frequency tables, scaled picture graphs and bar graphs to represent a data set with several categories.	Scaled picture & bar graphs	Reading & representing data: scaled picture graph
		Reading & representing data: scaled bar graph
3.DS.A.3 Create a line plot to represent data.	Create line plots	Creating line plots
3.DS.A.4 Use data shown in a line plot to answer questions.	Represent & read data in a line plot	Representing & reading data in a line plot

Grade 4

1 Number Sense and Operations in Base Ten

1.1 Use place value understanding and properties of operations to perform multi-digit arithmetic with numbers up to one million

Outcome	Quests	Content
4.NBT.A.1 Round multi-digit whole numbers to any place.	Round 6-digit numbers	Rounding 6-digit numbers to any place value
4.NBT.A.2 Read, write and identify multi-digit whole numbers up to one million using number names, base ten numerals and expanded form.	Read & write multi-digit numbers	Reading & writing multi-digit numbers
4.NBT.A.3 Compare two multi-digit numbers using the symbols $>$, $=$ or $<$, and justify the solution.	Compare two 6-digit numbers	Comparing two 6-digit numbers
4.NBT.A.4 Understand that in a multi-digit whole number, a digit represents 10 times what it would represent in the place to its right.	Place value for multi-digit numbers	Generalizing place value understanding
4.NBT.A.5 Demonstrate fluency with addition and subtraction of whole numbers.	Add multi-digit numbers	Adding multi-digit numbers, no regrouping
		Adding multi-digit numbers, regrouping
	Subtract multi-digit numbers	Subtracting multi-digit numbers, no regrouping
		Subtracting multi-digit numbers, regrouping
4.NBT.A.6 Multiply a whole number of up to four digits by a one-digit whole number and multiply two two-digit numbers, and justify the solution.	Multiply multi-digit numbers	Multiplying multi-digit numbers, algorithm
		Multiplying multi-digit numbers using place value
		Multiplying multi-digit numbers, area model
4.NBT.A.7 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, and justify the solution.	Divide multi-digit numbers	Dividing numbers, place value blocks
		Dividing numbers, area model
		Dividing numbers, place value strategy
		Introducing remainders in division

2 Number Sense and Operations in Fractions

2.1 Extend understanding of fraction equivalence and ordering

Outcome	Quests	Content
4.NF.A.1 Explain and/or illustrate why two fractions are equivalent.	Fraction equivalence	Equivalent fractions with models
4.NF.A.2 Recognize and generate equivalent fractions.	Generate equivalent fractions	Equivalent fractions with multiplication
4.NF.A.3 Compare two fractions using the symbols $>$, $=$ or $<$, and justify the solution.	Compare fractions	Compare fractions using models
		Compare fractions, different numerator/denominator
		Compare fractions using common denominators

2.2 Extend understanding of operations on whole numbers to fraction operations

Outcome	Quests	Content
4.NF.B.4 Understand addition and subtraction of fractions as joining/composing and separating/decomposing parts referring to the same whole.	Understand adding/subtracting fractions	Adding unit fractions, same denominators: models
		Adding fractions, same denominator
		Subtracting fractions, same denominator
		Adding & subtracting fractions, same denominator
4.NF.B.5 Decompose a fraction into a sum of fractions with the same denominator and record each decomposition with an equation and justification.	Decompose fractions	Decomposing fractions
4.NF.B.6 Solve problems involving adding and subtracting fractions and mixed numbers with like denominators.	Add & subtract mixed numbers	Adding mixed numbers, same denominator
		Subtracting mixed numbers, same denominator
4.NF.B.7 Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	Multiply a fraction by a whole number	Multiplying a fraction by a whole number

2.3 Understand decimal notation for fractions, and compare decimal fractions (denominators of 10 or 100)

Outcome	Quests	Content
4.NF.C.9 Use decimal notation for fractions with denominators of 10 or 100.	Fractions as decimals	Introducing tenths Introducing hundredths
4.NF.C.10 Understand that fractions and decimals are equivalent representations of the same quantity.	Know fraction & decimal equivalence	Knowing common fraction & decimal equivalences
4.NF.C.11 Read, write and identify decimals to the hundredths place using number names, base ten numerals and expanded form.	Introduce decimal notation	Introducing decimal notation
4.NF.C.12 Compare two decimals to the hundredths place using the symbols $>$, $=$ or $<$, and justify the solution.	Compare decimals to hundredths	Comparing & ordering decimals to hundredths

3 Relationships and Algebraic Thinking

3.1 Use the four operations with whole numbers to solve problems

Outcome	Quests	Content
4.RA.A.1 Multiply or divide to solve problems involving a multiplicative comparison.	Comparison word problems	Solving comparison word problems
4.RA.A.2 Solve multi-step whole number problems involving the four operations and variables and using estimation to interpret the reasonableness of the answer.	Word problems: 4 operations	Multi-step multiplication/division word problems
		Solving multiplication word problems
4.RA.A.3 Solve whole number division problems involving variables in which remainders need to be interpreted, and justify the solution.	Solve division word problems	2-step addition & subtraction word problems
		Solving division word problems

3.2 Work with factors and multiples

Outcome	Quests	Content
4.RA.B.4 Recognize that a whole number is a multiple of each of its factors and find the multiples for a given whole number.	Factors & multiples	Finding multiples: whole numbers up to 100
		Finding factors: whole numbers up to 100
4.RA.B.5 Determine if a whole number within 100 is composite or prime, and find all factor pairs for whole numbers within 100.	Prime & composite numbers	Prime & composite numbers

3.3 Generate and analyze patterns

Outcome	Quests	Content
4.RA.C.6 Generate a number pattern that follows a given rule.	Number & shape patterns	Generate shape patterns from a given rule
		Generate addition patterns from a given rule
		Generate subtraction patterns from a given rule

		Generate multiplication patterns from a given rule
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4 Geometry and Measurement

4.1 Classify 2-dimensional shapes by properties of their lines and angles

Outcome	Quests	Content
4.GM.A.1 Draw and identify points, lines, line segments, rays, angles, perpendicular lines and parallel lines.	Spatial features in 2-D figures	Classifying angles
		Labeling points & lines
		Identifying spatial features in 2-D shapes
4.GM.A.2 Classify two-dimensional shapes by their sides and/or angles.	Classify 2-D figures	Classifying plane shapes by their spatial features
		Classifying triangles by their sides & angles
4.GM.A.3 Construct lines of symmetry for a two-dimensional figure.	Lines of symmetry	Lines of symmetry

4.2 Understand the concepts of angle and measure angles

Outcome	Quests	Content
4.GM.B.5 Draw and measure angles in whole-number degrees using a protractor.	Measure & estimate angles	Measuring & estimating angles

4.3 Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit

Outcome	Quests	Content
4.GM.C.6 Know relative sizes of measurement units within one system of units.	Convert units of measure	Units of length: mm/cm/m/km
		Units of mass: g/kg & oz/lb
		Units of time: sec/min/hr & day/week/year
		Units of volume & capacity: mL/L
4.GM.C.7 Use the four operations to solve problems involving distances, intervals of time, liquid volume, weight of objects and money.	Word problems: units of measure	Length word problems
		Mass word problems
		Elapsed time word problems
		Volume & capacity word problems
		Money word problems
	Area & perimeter	Finding the area of a rectangle, formula

4.GM.C.8 Apply the area and perimeter formulas for rectangles to solve problems.		Finding the perimeter of a rectangle, formula
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5 Data and Statistics

5.1 Represent and analyze data

Outcome	Quests	Content
4.DS.A.1 Create a frequency table and/or line plot to display measurement data.	Create line plots	Creating line plots
4.DS.A.2 Solve problems involving addition and subtraction by using information presented in a data display.	Create & analyze data displays	Creating & analyzing data displays
4.DS.A.3 Analyze the data in a frequency table, line plot, bar graph or picture graph.	Analyze data	Analyzing data in tables & picture graphs

Grade 5

1 Number Sense and Operations in Base Ten

1.1 Use place value system understanding to perform operations with multi-digit whole numbers to billions and decimals to thousandths

Outcome	Quests	Content
5.NBT.A.1 Read, write and identify numbers from billions to thousandths using number names, base ten numerals and expanded form.	Read, write & identify numbers: any size	Reading, writing & identifying numbers: any size
5.NBT.A.2 Compare two numbers from billions to thousandths using the symbols $>$, $=$ or $<$, and justify the solution.	Compare & order numbers	Comparing & ordering numbers of any size
5.NBT.A.3 Understand that in a multi-digit number, a digit represents $1/10$ times what it would represent in the place to its left.	The place value system	Identifying the place value of a digit in a number
		Understanding the place value system: powers of 10
5.NBT.A.4 Evaluate the value of powers of 10 and understand the relationship to the place value system.	Multiply & divide by powers of 10	Multiplying decimals by powers of 10
		Dividing decimals by powers of 10
		Finding numbers before & after using powers of 10
		Writing numbers using powers of 10
5.NBT.A.5 Round numbers from billions to thousandths place.	Round numbers	Rounding whole numbers
5.NBT.A.6 Add and subtract multi-digit whole numbers and decimals to the thousandths place, and justify the solution.	Operations with decimals	Adding decimals to hundredths, algorithm
		Subtracting decimals using mental strategies
		Subtracting decimals to hundredths, algorithm
5.NBT.A.7 Multiply multi-digit whole numbers and decimals to the hundredths place, and justify the solution.	Multiply decimals & whole numbers	Multiplying decimals & whole numbers
		Multiplying decimals to hundredths, algorithm
		Multiplying decimals using mental strategies
		Multiplicative relationships with decimals

5.NBT.A.8 Divide multi-digit whole numbers and decimals to the hundredths place using up to two-digit divisors and four-digit dividends, and justify the solution.	Divide whole numbers & decimals	Divide whole numbers & decimals, mental strategies
		Dividing whole numbers & decimals, algorithm

2 Number Sense and Operations in Fractions

2.1 Understand the relationship between fractions and decimals (denominators that are factors of 100)

Outcome	Quests	Content
5.NF.A.2 Convert decimals to fractions and fractions to decimals.	Convert between fractions & decimals	Converting between fractions & decimals
5.NF.A.3 Compare and order fractions and/or decimals to the thousandths place using the symbols $>$, $=$ or $<$, and justify the solution.	Compare decimals to thousandths	Comparing & ordering decimals to thousandths

2.2 Perform operations and solve problems with fractions and decimals

Outcome	Quests	Content
5.NF.B.5.b Explain why multiplying a given number by a fraction greater than 1 results in a product larger than the given number.	Effects of multiplying fractions	Interpreting multiplying fractions as scaling
5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.	Add & subtract fractions	Adding fractions & mixed numbers
		Subtracting fractions & mixed numbers
		Adding & subtracting fractions & mixed numbers
		Adding fractions, proper & improper
		Adding mixed numbers
		Subtracting fractions, proper & improper
Subtracting mixed numbers		
5.NF.B.7.a Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths.	Area of a rectangle, fractional sides	Find the area of a rectangle with fractional sides
5.NF.B.7.b Calculate and interpret the product of a fraction by a whole number and a whole number by a fraction.	Multiply fractions	Multiplying a fraction by a whole number
		Multiplying a fraction by a fraction
5.NF.B.8.a Calculate and interpret the quotient of a unit fraction by a non-zero whole number.	Divide unit fractions by whole numbers	Dividing unit fractions by whole numbers, models

5.NF.B.8.b Calculate and interpret the quotient of a whole number by a unit fraction.	Divide whole numbers by unit fractions	Dividing whole numbers by unit fractions, models
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3 Relationships and Algebraic Thinking

3.1 Represent and analyze patterns and relationships

Outcome	Quests	Content
5.RA.A.1.a Generate two numeric patterns given two rules.	Numerical patterns	Comparing 2 numerical patterns
		Interpreting & creating a number pattern table
5.RA.A.1.b Translate two numeric patterns into two sets of ordered pairs.	Graph numerical patterns	Graphing ordered pairs from numerical patterns
5.RA.A.2 Write a rule to describe or explain a given numeric pattern.	Write pattern rules	Writing increasing & decreasing pattern rules

3.2 Write and interpret numerical expressions

Outcome	Quests	Content
5.RA.B.3 Write, evaluate and interpret numeric expressions using the order of operations.	Write & interpret expressions	Writing & interpreting expressions without solving
5.RA.B.4 Translate written expressions into algebraic expressions.	Write algebraic expressions	Writing algebraic expressions

4 Geometry and Measurement

4.1 Classify two- and three-dimensional geometric shapes

Outcome	Quests	Content
5.GM.A.1 Understand that attributes belonging to a category of figures also belong to all subcategories.	Attributes of 2-D figures	Sorting plane shapes
5.GM.A.2 Classify figures in a hierarchy based on properties.	Classify 2-D figures, properties	Classifying 2-D figures in a hierarchy Classifying quadrilaterals
5.GM.A.3 Analyze and describe the properties of prisms and pyramids.	Prisms & pyramids	Investigating properties of prisms & pyramids

4.2 Understand and compute volume

Outcome	Quests	Content
5.GM.B.4.b Understand that the volume of a right rectangular prism can be found by stacking multiple layers of the base.	Volume: rectangular prisms	Volume: additive & multiplicative strategies
5.GM.B.5 Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for volume of right rectangular prisms with whole-number edge lengths.	Volume formulas: rectangular prism	

4.3 Graph points on the Cartesian coordinate plane within the first quadrant to solve problems

Outcome	Quests	Content
5.GM.C.6.a Represent the axes as scaled perpendicular number lines that both intersect at 0, the origin.	The coordinate plane	Introducing the coordinate plane
5.GM.C.6.b Identify any point on the Cartesian coordinate plane by its ordered pair coordinates.	Locate & plot points in the 1st quadrant	Locating & plotting points in the 1st quadrant
5.GM.C.7 Plot and interpret points in the first quadrant of the Cartesian coordinate plane.	Graph in the first quadrant	Graphing in the first quadrant

4.4 Solve problems involving measurement and conversions within a measurement system

Outcome	Quests	Content
5.GM.D.8 Convert measurements of capacity, length and weight within a given measurement system.	Convert measurement units	Converting between standard metric units of length
		Converting between standard metric units of mass
		Converting metric units of volume & capacity
		Converting between customary units of length
		Converting customary units of volume & capacity
		Converting between customary units of mass
5.GM.D.9 Solve multi-step problems that require measurement conversions.	Multi-step conversion problems	Word problems: measurement conversions

5 Data and Statistics

5.1 Represent and analyze data

Outcome	Quests	Content
5.DS.A.1 Create a line graph to represent a data set, and analyze the data to answer questions and solve problems.	Represent & read data in a line graph	Representing & reading data in a line graph
5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outliers and generating the median.	Fraction problems: line plots	Represent & interpret measurements: line plots

Grade 6

1 Ratios and Proportional Relationships

1.1 Understand and use ratios to solve problems

Outcome	Quests	Content
6.RP.A.1 Understand a ratio as a comparison of two quantities and represent these comparisons.	Introduction to ratios	Defining, understanding & writing ratios
6.RP.A.2 Understand the concept of a unit rate associated with a ratio, and describe the meaning of unit rate.	Introduction to unit rate	Understanding unit rates & making comparisons
6.RP.A.3.a Create tables of equivalent ratios, find missing values in the tables and plot the pairs of values on the Cartesian coordinate plane.	Ratio tables	Creating tables of equivalent ratios
6.RP.A.3.b Solve unit rate problems.	Unit rate	Solving unit rate problems for given time periods
		Solving unit rate problems involving unit pricing
6.RP.A.3.c Solve percent problems.	Percent of a quantity	Expressing rates as a percent
		Solving percent problems: finding the whole
6.RP.A.3.d Convert measurement units within and between two systems of measurement.	Convert measurements using ratios	Converting measurement units using ratios

2 Number Sense and Operations

2.1 Apply and extend previous understandings of multiplication and division to divide fractions by fractions

Outcome	Quests	Content
6.NS.A.1.a Solve problems involving division of fractions by fractions.	Divide fractions	Dividing a fraction by a fraction
		Dividing fractions & mixed numbers

2.2 Compute with non-negative multi-digit numbers, and find common factors and multiples

Outcome	Quests	Content
6.NS.B.2 Demonstrate fluency with division of multi-digit whole numbers.	Divide multi-digit numbers, algorithm	Divide 4-digit by 2-digit numbers, no remainder
		Divide 4-digit by 2-digit numbers, with remainders
		Divide 4-digit by 2-digit numbers
6.NS.B.3 Demonstrate fluency with addition, subtraction, multiplication and division of decimals.	Operations with multi-digit decimals	Adding decimals using the standard algorithm
		Subtracting decimals using the standard algorithm
		Multiplying decimals using the standard algorithm
		Dividing decimals using the standard algorithm
		Word problems: adding & subtracting decimals
		Word problems: multiplying & dividing decimals
6.NS.B.4.a Find the greatest common factor (GCF) and the least common multiple (LCM).	GCF & LCM	Greatest common factor
		Least common multiple
		Solving word problems: factors & multiples
6.NS.B.4.b Use the distributive property to express a sum of two whole numbers with a common factor as a multiple of a sum of two whole numbers.	Factor using the distributive property	Factoring using the distributive property

2.3 Apply and extend previous understandings of numbers to the system of rational numbers

Outcome	Quests	Content
6.NS.C.5 Use positive and negative numbers to represent quantities.	Positive & negative numbers	Investigating & interpreting integers
6.NS.C.6.a Locate rational numbers on a horizontal or vertical number line.	Graph rational numbers	Placing rational numbers on the number line
		Graphing rational numbers on the coordinate plane
6.NS.C.6.b Write, interpret and explain problems of ordering of rational numbers.	Order rational numbers	Exploring the everyday language of integers
		Statements of order: rational numbers
6.NS.C.7 Understand that the absolute value of a rational number is its distance from 0 on the number line.	Introduction to absolute value	Introducing absolute value
6.NS.C.8 Extend prior knowledge to generate equivalent representations of rational numbers between fractions, decimals and percentages (limited to terminating decimals and/or benchmark fractions of $\frac{1}{3}$ and $\frac{2}{3}$).	Equivalent representations	Finding equivalent representations

2.4 Apply and extend previous understandings of arithmetic to algebraic expressions

Outcome	Quests	Content
6.EE1.A.2.a Identify parts of an expression using mathematical terminology.	Parts of an expression	Identifying parts of an expression
6.EE1.A.2.b Evaluate expressions at specific values of the variables.	Evaluate algebraic expressions	Evaluating algebraic expressions
		Evaluating expressions using order of operations
6.EE1.A.2.c Evaluate non-negative rational number expressions.	Evaluate rational number expressions	Evaluating rational number expressions
6.EE1.A.2.d Write and evaluate algebraic expressions.	Write algebraic expressions	Writing algebraic expressions
6.EE1.A.3 Identify and generate equivalent algebraic expressions using mathematical properties.	Equivalent expressions	Identifying equivalent expressions

2.5 Reason about and solve one-variable equations and inequalities

Outcome	Quests	Content
6.EE1.B.4 Use substitution to determine whether a given number in a specified set makes a one-variable equation or inequality true.	Test solutions	Testing solutions: equations
		Testing solutions: inequalities
6.EE1.B.6 Write and solve equations using variables to represent quantities, and understand the meaning of the variable in the context of the situation.	Write & solve an equation	Writing & solving equations
6.EE1.B.7 Solve one-step linear equations in one variable involving non-negative rational numbers.	Solve 1-step equations	Preserving equality in equations
		Solving simple linear equations using models
		1-step equations: add/subtract, positive integers
		1-step equations: add/subtract, rational numbers
		1-step equations: multiply, positive integers
		1-step equations: multiply, rational numbers
		1-step equations: division, rational numbers
		Writing & solving 1-step equations
6.EE1.B.8.a Write an inequality of the form $x > c$, $x < c$, $x \geq c$, or $x \leq c$ to represent a constraint or condition.	Write & represent inequalities	Writing inequalities
		Represent algebraic inequalities on a number line

2.6 Represent and analyze quantitative relationships between dependent and independent variables

Outcome	Quests	Content
6.EE1.C.9.a Write an equation to express one quantity, the dependent variable, in terms of the other quantity, the independent variable.	Dependent & independent variables	Understanding dependent & independent variables

3 Geometry and Measurement

3.1 Solve problems involving area, surface area and volume

Outcome	Quests	Content
6.GM.A.1 Find the area of polygons by composing or decomposing the shapes into rectangles or triangles.	Area: triangles & quadrilaterals	Finding the area of a right triangle
		Investigating the area of special quadrilaterals
		Real-world area problems: special quadrilaterals
6.GM.A.2.a Understand that the volume of a right rectangular prism can be found by filling the prism with multiple layers of the base.	Volume: rectangular prisms	Calculating the volume of a rectangular prism
6.GM.A.2.b Apply $V = l * w * h$ and $V = Bh$ to find the volume of right rectangular prisms.	Volume: rectangular prisms, formula	Volume: rectangular prisms, fraction edge lengths
6.GM.A.3.a Understand signs of numbers in ordered pairs as indicating locations in quadrants of the Cartesian coordinate plane.	Graph in the 4 quadrants	Graphing coordinates in the 4 quadrants
6.GM.A.3.b Recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.	Graph coordinates across the x- & y-axis	Graphing coordinates across the x-axis & y-axis
6.GM.A.3.c Find distances between points with the same first coordinate or the same second coordinate.	Find distances between points	Finding distances between points
6.GM.A.3.d Construct polygons in the Cartesian coordinate plane.	Polygons in the coordinate plane	Drawing polygons in the coordinate plane
6.GM.A.4.a Represent three-dimensional figures using nets made up of rectangles and triangles.	Connect 3-D objects with their nets	Connecting 3-D objects with their nets
6.GM.A.4.b Use nets to find the surface area of three-dimensional figures whose sides are made up of rectangles and triangles.	Calculate surface area by using nets	Calculating surface area of rectangular prisms

4 Data Analysis, Statistics and Probability

4.1 Develop understanding of statistical variability

Outcome	Quests	Content
6.DSP.A.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	Statistical questions	Evaluating statistical questions
6.DSP.A.2 Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread and overall shape.	Shape of data distribution	Introducing the shape of data distribution
6.DSP.A.3 Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary from a single number.	Measures of center & variation	Measures of center & variation
		Introducing the upper & lower quartiles
		Introducing interquartile range
		Understanding the median
		Understanding the mean

4.2 Summarize and describe distributions

Outcome	Quests	Content
6.DSP.B.4.a Use dot plots, histograms and box plots to display and interpret numerical data.	Data displays	Constructing data displays
		Reading & interpreting data in a dot plot
		Reading & interpreting data in a histogram
		Reading & interpreting box plots
6.DSP.B.4.b Create and interpret circle graphs.	Create & interpret circle graphs	Creating & interpreting circle graphs
6.DSP.B.5 Summarize numerical data sets in relation to the context.	Summarize numerical data	Summarizing numerical data
6.DSP.B.5.a Report the number of observations.	Report observations	Reporting observations in a data display
6.DSP.B.5.b Describe the nature of the attribute under investigation, including how it was measured and its units of measurement.	Attributes of data	Describing attributes of data in data displays

6.DSP.B.5.c Give quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context of the data.	Calculate measures of center & variation	Calculating the mean absolute deviation
		Calculating the median
		Calculating the mean
		Identifying clusters, gaps & outliers
		Identifying skewed & symmetrical sets of data
6.DSP.B.5.d Analyze the choice of measures of center and variability based on the shape of the data distribution and/or the context of the data.	Relate measures of center & variation	Choosing appropriate measures of center/variation
		Comparing measures of center & variation



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