

Mathletics

California Content Standards

Activities (Courses), Skill Quests
and eBooks



Grades 3-6

September, 2025

Mathletics

Mathletics

California Content Standards

Activities (Courses), Skill Quests and eBooks

September, 2025

Grade 3.....	5
3.OA Operations & Algebraic Thinking	5
Big ideas	5
Represent and solve problems involving multiplication and division	5
Understand properties of multiplication and the relationship between multiplication and division	6
Multiply and divide within 100.....	7
Solve problems involving the four operations, and identify and explain patterns in arithmetic	8
3.NBT Number & Operations in Base Ten	8
Big ideas	8
Use place value understanding and properties of operations to perform multi-digit arithmetic.....	9
3.NF Number & Operations – Fractions	10
Big ideas	10
Develop understanding of fractions as numbers.....	10
3.MD Measurement & Data	11
Big ideas	11
Solve problems involving measurement and estimation	12
Represent and interpret data	12
Geometric measurement: understand concepts of area and relate area to multiplication and to addition	13
Geometric measurement: recognize perimeter	14
3.G Geometry.....	14
Big ideas	14
Reason with shapes and their attributes.....	15
Grade 4.....	16
4.OA Operations & Algebraic Thinking	16
Big ideas	16
Use the four operations with whole numbers to solve problems	16
Gain familiarity with factors and multiples	17
Generate and analyze patterns	17
4.NBT Number & Operations in Base Ten	18
Big ideas	18
Generalize place value understanding for multi-digit whole numbers	18
Use place value understanding and properties of operations to perform multi-digit arithmetic.....	19
4.NF Number & Operations – Fractions	20
Big ideas	20
Extend understanding of fraction equivalence and ordering.....	21
Build fractions from unit fractions.....	21
Understand decimal notation for fractions, and compare decimal fractions	22
4.MD Measurement & Data	23
Big ideas	23
Solve problems involving measurement and conversion of measurements.....	23
Represent and interpret data	25

Geometric measurement: understand concepts of angle and measure angles.....	25
4.G Geometry.....	26
Big ideas	26
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.....	26
Grade 5.....	28
5.OA Operations & Algebraic Thinking	28
Big ideas	28
Write and interpret numerical expressions.....	28
Analyze patterns and relationships	28
5.NBT Number & Operations in Base Ten	29
Big ideas	29
Understand the place value system	29
Perform operations with multi-digit whole numbers and with decimals to hundredths.....	30
5.NF Number & Operations – Fractions	32
Big ideas	32
Use equivalent fractions as a strategy to add and subtract fractions	32
Apply and extend previous understandings of multiplication and division.....	33
5.MD Measurement & Data	34
Big ideas	34
Convert like measurement units within a given measurement system	34
Represent and interpret data	35
Geometric measurement: understand concepts of volume.....	35
5.G Geometry.....	36
Big ideas	36
Graph points on the coordinate plane to solve real-world and mathematical problems	36
Classify two-dimensional figures into categories based on their properties.....	37
Grade 6.....	38
6.RP Ratios & Proportional Relationships	38
Big ideas	38
Understand ratio concepts and use ratio reasoning to solve problems.....	38
6.NS The Number System	39
Big ideas	39
Apply and extend previous understandings of multiplication and division to divide fractions by fractions.....	39
Compute fluently with multi-digit numbers and find common factors and multiples.....	40
Apply and extend previous understandings of numbers to the system of rational numbers	41
6.EE Expressions & Equations	43
Big ideas	43
Apply and extend previous understandings of arithmetic to algebraic expressions.....	43
Reason about and solve one-variable equations and inequalities	44
Represent and analyze quantitative relationships between dependent and independent variables.....	45
6.G Geometry.....	46
Big ideas	46

Solve real-world and mathematical problems involving area, surface area, and volume.....	46
6.SP Statistics & Probability.....	47
Big ideas	47
Develop understanding of statistical variability	48
Summarize and describe distributions	48

Grade 3

3.OA Operations & Algebraic Thinking

Big ideas

Represent Multivariable Data	
Fractions of Shape and Time	
Measuring	
Patterns in Four Operations	OA.8, OA.9
Number Flexibility to 100 for All Four Operations	OA.1, OA.2, OA.3, OA.4, OA.5, OA.6, OA.7, OA.8
Square Tiles	OA.7
Fractions as Relationships	
Unit Fraction Models	
Analyze Quadrilaterals	OA.8

Represent and solve problems involving multiplication and division

3.OA.1 Interpret products of whole numbers.	
 Activities	
Operations & Algebraic Thinking 1	Groups of Two
	Groups of Three
	Groups of Four
	Groups of Five
	Groups of Six
	Groups of Seven
	Groups of Eight
	Groups of Nine
	Groups of Ten
	Multiplication Arrays
	Arrays 1
	Frog Jump Multiplication
	Model Multiplication to 5 x 5
 Skill Quests	
Introduction to multiplication	Multiplying using arrays & repeated addition
 Ebooks	
Grade 3, Series D: Multiplication and Division	Introducing multiplication
Grade 3 Multiplication Worksheets	

3.OA.2 Interpret whole-number quotients of whole numbers.	
 Activities	
Operations & Algebraic Thinking 2	Divide Into Equal Groups

	Dividing Threes
	Dividing Fours
	Dividing Fives
	Dividing Sixes
	Dividing Sevens
	Dividing Eights
	Dividing Nines
	Dividing Tens
	Frog Jump Division
	Share the Treasure
 Skill Quests	
Introduction to division	Dividing by sharing (up to 50)
	Dividing by grouping (up to 50)
	Create & solve problems involving equal groups
	Using repeated subtraction to divide
 Ebooks	
Grade 3, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

3.OA.3	
Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	
 Activities	
Operations & Algebraic Thinking 3-9	Fill the Jars
	Problems: Times and Divide
	Word problems: Multiply and Divide
 Skill Quests	
Multiplication & division problems	Multiplication problems: fair share/equal grouping
	Multiplication/division problems: arrays
 Ebooks	
Grade 3: Rich Task	Fish Nets
Grade 3, Series D: Multiplication and Division	Mental multiplication strategies
Grade 3 Multiplication Worksheets	
Grade 3, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

3.OA.4	
Determine the unknown whole number in a multiplication or division equation relating three whole numbers.	
 Activities	
Operations & Algebraic Thinking 3-9	Related Facts 2
	Missing Numbers: $\times$ and $\div$ facts
 Skill Quests	
Multiply & divide: finding the unknown	Multiplying & dividing: finding the unknown

Understand properties of multiplication and the relationship between multiplication and division

3.OA.5 Apply properties of operations as strategies to multiply and divide.	
 Activities	
Operations & Algebraic Thinking 3-9	Multiplication Turn-Abouts
	Multiplication Properties
	Fact Families: Multiply and Divide
 Skill Quests	
Multiplication properties	Multiplication properties
 Ebooks	
Grade 3, Series D: Multiplication and Division	Multiplication facts
	Mental multiplication strategies
Grade 3 Multiplication Worksheets	
Grade 3, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

3.OA.6 Understand division as an unknown-factor problem.	
 Activities	
Teacher directed	
 Skill Quests	
Division: unknown-factor problems	Understand division as an unknown-factor problem
 Ebooks	
Grade 3, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

Multiply and divide within 100

3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	
 Activities	
Operations & Algebraic Thinking 3-9	Times Tables
 Skill Quests	
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
 Ebooks	

Grade 3, Series D: Multiplication and Division	Multiplication facts
	Mental multiplication strategies
Grade 3 Multiplication Worksheets	
Grade 3, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

Solve problems involving the four operations, and identify and explain patterns in arithmetic

3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
 Activities	
Operations & Algebraic Thinking 3-9	Word Problems with Letters
 Skill Quests	
2-step word problems: 4 operations	2-step word problems with addition & subtraction
	2-step word problems with the 4 operations
 Ebooks	
Grade 3, Series D: Patterns and Algebra	Equations and equivalence

3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	
 Activities	
Operations & Algebraic Thinking 3-9	Increasing Patterns
	Decreasing Patterns
	Describing Patterns
 Skill Quests	
Number patterns	Identifying & creating number patterns
	Identifying odd & even number patterns
	Exploring number patterns in tables & charts
 Ebooks	
Grade 3, Series D: Patterns and Algebra	Patterns and functions

3.NBT Number & Operations in Base Ten

Big ideas

Represent Multivariable Data	NBT.1
Fractions of Shape and Time	
Measuring	NBT.1
Patterns in Four Operations	NBT.2
Number Flexibility to 100 for All Four Operations	NBT.1, NBT.3
Square Tiles	
Fractions as Relationships	
Unit Fraction Models	
Analyze Quadrilaterals	NBT.1

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

3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	
 Activities	
Number & Operations in Base Ten	Nearest Ten?
	Nearest Hundred?
 Skill Quests	
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
 Ebooks	
Grade 3, Series D: Reading and Understanding Whole Numbers	Round and estimate

3.NBT.2 Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	
 Activities	
Number & Operations in Base Ten	Strategies for Column Addition
	Add 3-Digit Numbers
	Add 3-Digit Numbers: Regroup
	Add Multi-Digit Numbers 1
	Add Three 2-Digit Numbers: Regroup
	Addition Properties
	3-Digit Differences
	3-Digit Differences with Zeros
	3-Digit Differences: 1 Regrouping
	3-Digit Differences: 2 Regroupings
 Skill Quests	
Add within 1000	Add 2- & 3-digit numbers: number line
	Add 2- & 3-digit numbers: jump strategy
	Add two 2-digit numbers: base ten blocks
	Add 2- & 3-digit numbers: expanded form
	Add two 2-digit numbers: compensation
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
 Ebooks	
Grade 3 Addition Worksheets	
Grade 3 Subtraction Worksheets	

3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.	
 Activities	
Number & Operations in Base Ten	Multiply Multiples of 10
 Skill Quests	
Multiply by a multiple of 10	Using place value to multiply by multiples of 10
	Multiplying by a multiple of 10

3. NF Number & Operations – Fractions

Big ideas

Represent Multivariable Data	
Fractions of Shape and Time	NF.1, NF.2, NF.3
Measuring	
Patterns in Four Operations	
Number Flexibility to 100 for All Four Operations	
Square Tiles	NF.1
Fractions as Relationships	NF.1, NF.3
Unit Fraction Models	NF.2, NF.3
Analyze Quadrilaterals	

Develop understanding of fractions as numbers

3.NF.1 Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by a parts of size $\frac{1}{b}$.	
 Activities	
Number & Operations-Fractions	Shade Fractions
	Model Fractions
	What Fraction Is Shaded 1
	Halves and Fourths
	Thirds and Sixths
 Skill Quests	
Introduction to fractions	Introducing the numerator & denominator
	Introducing eighths
	Halves, fourths & eighths of objects or shapes
	Halves, thirds or quarters of shapes: partitioning
	Introducing sixths
	Thirds & sixths of objects, shapes & sets
 Ebooks	
Grade 3, Series D: Fractions	Introducing fractions

3.NF.2

Understand a fraction as a number on the number line; represent fractions on a number line diagram. a. Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line. b. Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.

Activities

Number & Operations-Fractions	Identifying Fractions on a Number Line
-------------------------------	--

Skill Quests

Locate unit fractions on a number line	Locating unit fractions on a number line
Locate fractions on a number line	Locating fractions on a number line

Ebooks

Grade 3, Series D: Fractions	Introducing fractions
------------------------------	-----------------------

3.NF.3

Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions.

Activities

Number & Operations-Fractions	Equivalent Fraction Wall 1
	Compare Fractions 1a
	Comparing Fractions 1

Skill Quests

Investigate equivalent fractions	Investigating equivalent fractions
Find simple equivalent fractions	Recognize & generate simple equivalent fractions
Whole numbers as fractions	Express & recognize whole numbers as fractions
Compare fractions	Comparing fractions: same numerator or denominator

Ebooks

Grade 3, Series D: Fractions	Types of fractions
------------------------------	--------------------

3.MD Measurement & Data

Big ideas

Represent Multivariable Data	MD.1, MD.2, MD.3, MD.4
Fractions of Shape and Time	MD.1
Measuring	MD.2, MD.4
Patterns in Four Operations	MD.1
Number Flexibility to 100 for All Four Operations	MD.7
Square Tiles	MD.5, MD.6, MD.7
Fractions as Relationships	
Unit Fraction Models	MD.1
Analyze Quadrilaterals	MD.8

Solve problems involving measurement and estimation

3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.	
 Activities	
Measurement & Data 1-4	What is the Time?
	Five Minute Times
	Time Mentals
	Elapsed Time
 Skill Quests	
Tell & write time to the minute	Telling time to the minute, digital & analog
	Calculating elapsed time
	Using timetables
 Ebooks	
Grade 3, Series D: Fractions	Telling time
	Measuring time

3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units to represent the problem.	
 Activities	
Measurement & Data 1-4	Mass Word Problems
	Cups, Pints, Quarts, Gallons
 Skill Quests	
Liquid volume	Estimating, comparing & measuring in liters
	Liquid volume: milliliters
	Solving word problems involving liquid volume
Mass	Mass: kilograms
	Mass: grams
	Mass: measuring in grams & kilograms
	Solving 1-step word problems involving mass
 Ebooks	
Grade 3, Series D: Measurement	Volume and capacity
	Mass

Represent and interpret data

3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.	
 Activities	
Measurement & Data 1-4	Making Picture Graphs: With Scale
	Pictographs

	Bar Graphs 1
	Bar Graphs 2
	Add and Subtract Using Graphs
	Picture Graphs: with scale & half symbols
 Skill Quests	
Scaled picture & bar graphs	Reading & representing data: scaled picture graph
	Reading & representing data: scaled bar graph
 Ebooks	
Grade 3, Series D: Chance and Data	Data

3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.	
 Activities	
Measurement & Data 1-4	Measure to the Nearest Half Inch
 Skill Quests	
Represent & read line plots	Representing & reading line plots
 Ebooks	
Grade 3, Series D: Chance and Data	Data

Geometric measurement: understand concepts of area and relate area to multiplication and to addition

3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called "a unit square," is said to have "one square unit" of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.	
 Activities	
Teacher directed	
 Skill Quests	
Estimate area with tiling	Estimating area with tiling
Measure area with unit squares	Measuring area with unit squares
 Ebooks	
Grade 3, Series D: Measurement	Area

3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	
 Activities	
Measurement & Data 6-8	Area of Shapes
	Calculate Area of Shapes (inches, feet, yards)
	Biggest Shape
 Skill Quests	
Measure area with formal units	Introducing formal units for area
	Measuring the area of rectangles

Ebooks	
Grade 3, Series D: Measurement	Area

3.MD.7	
Relate area to the operations of multiplication and addition.	
Activities	
Measurement & Data 6-8	Area of Squares and Rectangles
	Calculate Area of Squares and Rectangles
	Area: Compound Figures
Skill Quests	
Find the area with repeated addition	Finding the area of rectangles, repeated addition
Area problems: multiplication	Solving area problems using multiplication
Find the area using area models	Finding the area of rectangles, area models
Find the area of rectilinear figures	Finding the area of rectilinear figures
Ebooks	
Grade 3, Series D: Measurement	Area

Geometric measurement: recognize perimeter

3.MD.8	
Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	
Activities	
Measurement & Data 6-8	Perimeter
	Perimeter: Squares and Rectangles
	Perimeter Detectives 1
	Perimeter of Shapes
Skill Quests	
Perimeter problems	Finding the perimeter & area of rectangles
	Relating perimeter & area
	Introducing perimeter
	Finding the perimeter of rectangles
	Finding a missing side length given the perimeter
	Finding the perimeter of polygons
Ebooks	
Grade 3, Series D: Measurement	Units of length

3.G Geometry

Big ideas

Represent Multivariable Data	
Fractions of Shape and Time	G.2
Measuring	
Patterns in Four Operations	

Number Flexibility to 100 for All Four Operations	
Square Tiles	
Fractions as Relationships	
Unit Fraction Models	
Analyze Quadrilaterals	G.1, G.2

Reason with shapes and their attributes

3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	
 Activities	
Geometry	Shapes
	Collect the Shapes 1
	Collect the Shapes 2
	Collect More Shapes
	Collect the Polygons
	Count Sides and Corners
 Skill Quests	
Shapes & their attributes	Sorting & naming quadrilaterals
	Comparing & describing two-dimensional shapes
 Ebooks	
Grade 3, Series D: Space, Shape and Position	Investigating 2D shapes

3.G.2 Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	
 Activities	
Teacher directed	
 Skill Quests	
Partition shapes	Partition shapes into parts with equal areas
 Ebooks	
Grade 3, Series D: Fractions	Introducing fractions

Grade 4

4.OA Operations & Algebraic Thinking

Big ideas

Measuring and Plotting	
Rectangle Investigations	
Number and Shape Patterns	OA.1, OA.2, OA.5
Factors and Area Models	OA.1, OA.2, OA.4
Multi-Digit Numbers	OA.1
Fraction Flexibility	OA.1
Visual Fraction Models	
Circles, Fractions and Decimals	OA.1
Shapes and Symmetries	
Connected Problem Solving	OA.2, OA.3

Use the four operations with whole numbers to solve problems

4.OA.1 Interpret a multiplication equation as a comparison. Represent verbal statements of multiplicative comparisons as multiplication equations.	
 Activities	
Teacher directed	
 Skill Quests	
Interpret multiplication as a comparison	Describe comparisons using multiplication language

4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison.	
 Activities	
Teacher directed	
 Skill Quests	
Comparison word problems	Solving comparison word problems

4.OA.3 Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
 Activities	
Operations & Algebraic Thinking	Problems: Multiply and Divide
	Word Problems with Letters
	Multiply and Divide Problems 1

Skill Quests	
Word problems: 4 operations	Multi-step multiplication/division word problems
	Solving division word problems
	Solving multiplication word problems
	2-step addition & subtraction word problems
Ebooks	
Grade 4, Series E: Patterns and Algebra	Equations and equivalence

Gain familiarity with factors and multiples

4.OA.4	
Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.	
Activities	
Operations & Algebraic Thinking	Multiples
	Factors
	Find the Factor
	Prime or Composite?
Skill Quests	
Factors, multiples & prime numbers	Finding multiples: whole numbers up to 100
	Finding factors: whole numbers up to 100
	Prime & composite numbers
Ebooks	
Grade 4: Rich Task	Split that Fact
Grade 4, Series E: Multiplication and Division	Using known facts
Grade 4 Multiplication Worksheets	

Generate and analyze patterns

4.OA.5	
Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	
Activities	
Operations & Algebraic Thinking	Increasing Patterns
	Decreasing Patterns
	Describing Patterns
Skill Quests	
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
Ebooks	
Grade 4, Series E: Patterns and Algebra	Patterns and functions

4.NBT Number & Operations in Base Ten

Big ideas

Measuring and Plotting	
Rectangle Investigations	
Number and Shape Patterns	NBT.4
Factors and Area Models	NBT.5, NBT.6
Multi-Digit Numbers	NBT.1, NBT.2, NBT.3, NBT.4
Fraction Flexibility	
Visual Fraction Models	
Circles, Fractions and Decimals	
Shapes and Symmetries	NBT.3, NBT.4
Connected Problem Solving	NBT.3, NBT.4, NBT.5, NBT.6

Generalize place value understanding for multi-digit whole numbers

4.NBT.1	
Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.	
 Activities	
Number & Operations in Base Ten 1-3	Place Value 1 ($\times 10$ and $\div 10$)
	Place Value 2 ($\times 10$ and $\div 10$)
 Skill Quests	
Place value for multi-digit numbers	Generalizing place value understanding
 Ebooks	
Grade 4, Series E: Multiplication and Division	Mental multiplication strategies
Grade 4 Multiplication Worksheets	

4.NBT.2	
Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.	
 Activities	
Number & Operations in Base Ten 1-3	Numbers from Words to Digits 1
	Numbers from Words to Digits 2
	Expanded Form
	Expanding Numbers
	Understanding Place Value 2
	Understanding Place Value 3
	Place Value to Millions
	Place Value 3
	Greater Than or Less Than 1
 Skill Quests	
Read & write multi-digit numbers	Reading & writing multi-digit numbers
	Comparing two 6-digit numbers
 Ebooks	

Grade 4, Series E: Reading and Understanding Whole Numbers	Looking at whole numbers
	Place value of whole numbers

4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place.	
 Activities	
Number & Operations in Base Ten 1-3	Rounding Numbers
	Nearest Thousand?
 Skill Quests	
Round 6-digit numbers	Rounding 6-digit numbers to any place value
 Ebooks	
Grade 4, Series E: Reading and Understanding Whole Numbers	Round and estimate

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

4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm.	
 Activities	
Number & Operations in Base Ten 4-6	Add Multi-Digit Numbers 1
	Add Multi-Digit Numbers 2
	Adding Colossal Columns
	Subtracting Colossal Columns
	2-Digit Differences: Regroup
	3-Digit Differences: 2 Regroupings
	3-Digit Differences with Zeros
 Skill Quests	
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
 Ebooks	
Grade 4, Series E: Addition and Subtraction	Written methods
Grade 4 Addition Worksheets	
Grade 4 Subtraction Worksheets	

4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
 Activities	
Number & Operations in Base Ten 4-6	Multiply 2 Digits Area Model
	Contracted Multiplication
	Double and Halve to Multiply
 Skill Quests	

Multiply multi-digit numbers	Multiply multi-digit numbers, algorithm
	Multiply multi-digit numbers using place value
	Multiply multi-digit numbers, area model
 Ebooks	
Grade 4, Series E: Multiplication and Division	Using known facts
	Mental multiplication strategies
Grade 4 Multiplication Worksheets	

4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	
 Activities	
Number & Operations in Base Ten 4-6	Remainders by Arrays
	Remainders by Tables
	Divide: 1 -Digit Divisor 1
	Divide: 1 -Digit Divisor 2
	Divide: 1 -Digit Divisor, Remainder
 Skill Quests	
Divide multi-digit numbers	Dividing numbers, place value blocks
	Dividing numbers, area model
	Dividing numbers, place value strategy
	Introducing remainders in division
 Ebooks	
Grade 4, Series E: Multiplication and Division	Division
	Mental division strategies
Grade 4 Division Worksheets	
Grade 4: Rich Task	Leftovers

4.NF Number & Operations – Fractions

Big ideas

Measuring and Plotting	NF.1, NF.2
Rectangle Investigations	
Number and Shape Patterns	
Factors and Area Models	
Multi-Digit Numbers	
Fraction Flexibility	NF.1, NF.3, NF.4, NF.5
Visual Fraction Models	NF.1, NF.2, NF.3, NF.5, NF.6, NF.7
Circles, Fractions and Decimals	NF.5, NF.6, NF.7
Shapes and Symmetries	
Connected Problem Solving	

Extend understanding of fraction equivalence and ordering

4.NF.1

Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

Activities

Number & Operations-Fractions

The Equivalent Fraction

Equivalent Fraction Wall 1

Equivalent Fraction Wall 2

Selecting Equivalent Fractions

Skill Quests

Fraction equivalence

Equivalent fractions with models

Equivalent fractions with multiplication

Ebooks

Grade 4, Series E: Fractions

Types of fractions

Grade 4 Fractions Worksheets

4.NF.2

Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions.

Activities

Number & Operations-Fractions

Compare Fractions 1b

Comparing Fractions 1

Skill Quests

Compare fractions

Compare fractions using models

Compare fractions, different numerator/denominator

Compare fractions using common denominators

Ebooks

Grade 4, Series E: Fractions

Working with fractions

Grade 4 Fractions Worksheets

Build fractions from unit fractions

4.NF.3

Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.

Activities

Number & Operations-Fractions

Add Like Fractions

Subtract Like Fractions

Add Subtract Fractions 1

Add Like Mixed Numbers

Skill Quests

Understand adding/subtracting fractions

Adding unit fractions, same denominators: models

Adding fractions, same denominator

	Subtracting fractions, same denominator
	Adding & subtracting fractions, same denominator
Decompose fractions	Decomposing fractions
Add & subtract mixed numbers	Adding mixed numbers, same denominator
	Subtracting mixed numbers, same denominator
Word problems: add & subtract fractions	Word problems: adding & subtracting fractions
 Ebooks	
Grade 4, Series E: Fractions	Types of fractions
Grade 4 Fractions Worksheets	

4.NF.4	
Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.	
 Activities	
Number & Operations-Fractions	Multiply Fraction by Whole Number
	Model Fractions to Multiply
 Skill Quests	
Fractions: multiples of unit fractions	Fractions: multiples of unit fractions
Multiply fractions by whole numbers	Multiply fractions by whole numbers using models
Word problems: multiply fractions	Word problems: multiply fractions by whole numbers
 Ebooks	
Grade 4 Fractions Worksheets	

Understand decimal notation for fractions, and compare decimal fractions

4.NF.5	
Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.	
 Activities	
Teacher directed	
 Skill Quests	
Add fractions: denominator of 10 and 100	Adding fractions with denominators of 10 and 100

4.NF.6	
Use decimal notation for fractions with denominators 10 or 100.	
 Activities	
Number & Operations-Fractions	Decimals from Words to Digits 1
 Skill Quests	
Fractions as decimals	Introducing decimal notation
	Introducing tenths
	Introducing hundredths
 Ebooks	
Grade 4, Series E: Fractions	Fractions, decimals and percentages
Grade 4 Fractions Worksheets	

4.NF.7

Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions.

Activities

Number & Operations-Fractions

Decimals on the Number Line

Comparing Decimals 1

Decimal Order 1

Skill Quests

Compare decimals to hundredths

Compare & order decimals to hundredths

4.MD Measurement & Data

Big ideas

Measuring and Plotting	MD.1, MD.4
Rectangle Investigations	MD.1, MD.2, MD.3, MD.5, MD.6
Number and Shape Patterns	
Factors and Area Models	
Multi-Digit Numbers	
Fraction Flexibility	
Visual Fraction Models	
Circles, Fractions and Decimals	MD.2, MD.5, MD.7
Shapes and Symmetries	MD.5, MD.6, MD.7
Connected Problem Solving	MD.1, MD.2, MD.3

Solve problems involving measurement and conversion of measurements

4.MD.1

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table.

Activities

Measurement & Data 1-3

Inches, Feet, Yards

Ounces and Pounds

Cups, Pints, Quarts, Gallons

Customary Units of Length

Customary Units of Capacity

Customary Units of Weight 1

Meters and Kilometers

Centimeters and Millimeters

Milliliters and Liters

Converting cm and mm

Grams and Kilograms Conversion

Converting Units of Mass

Time Conversions: Whole Numbers 1

Skill Quests

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
 Ebooks	
Grade 4, Series E: Length, Area and Perimeter	Units of length
Grade 4, Series E: Time	Measuring time
Grade 4, Series E: Volume, Capacity and Mass	Volume and capacity
	Mass

4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	
 Activities	
Measurement & Data 1-3	Money Problems: Four Operations
	Making Change (USD)
	Mass Word Problems
	Using Timetables
	Time Conversions: Simple Fractions
 Skill Quests	
Word problems: units of measure	Length word problems
	Mass word problems
	Elapsed time word problems
	Volume & capacity word problems
	Money word problems
 Ebooks	
Grade 4, Series E: Time	Measuring time
Grade 4, Series E: Volume, Capacity and Mass	Volume and capacity
	Mass

4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
 Activities	
Measurement & Data 1-3	Perimeter: Squares and Rectangles
	Perimeter Detectives 1
	Area: Squares and Rectangles
 Skill Quests	
Area & perimeter	Finding the area of a rectangle, formula
	Finding the perimeter of a rectangle, formula
 Ebooks	
Grade 4, Series E: Length, Area and Perimeter	Perimeter
	Area

Represent and interpret data

4.MD.4	
Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.	
 Activities	
Teacher directed	
 Skill Quests	
Fractions on a line plot	Fractions on a line plot
 Ebooks	
Grade 4, Series E: Chance and Data	Data

Geometric measurement: understand concepts of angle and measure angles

4.MD.5	
Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.	
 Activities	
Measurement & Data 5-7	Comparing Angles
	Equal Angles
 Skill Quests	
Angle measurements in a circle	Using a circular protractor to measure angles
 Ebooks	
Grade 4, Series E: Space, Shape and Position	Lines, angles and shapes

4.MD.6	
Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	
 Activities	
Measurement & Data 5-7	Estimating Angles
	Measuring Angles
 Skill Quests	
Measure & estimate angles	Measuring & estimating angles
 Ebooks	
Grade 5, Series F: Geometry	Lines and angles

4.MD.7	
Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.	
 Activities	
Measurement & Data 5-7	Angles of Revolution: Unknown Values
 Skill Quests	
Problems with adjacent angles	Solving problems with adjacent angles

4.G Geometry

Big ideas

Measuring and Plotting	
Rectangle Investigations	
Number and Shape Patterns	
Factors and Area Models	
Multi-Digit Numbers	
Fraction Flexibility	
Visual Fraction Models	
Circles, Fractions and Decimals	
Shapes and Symmetries	G.1, G.2, G.3
Connected Problem Solving	G.3

Draw and identify lines and angles, and classify shapes by properties of their lines and angles

4.G.1	
Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	
 Activities	
Geometry	What Line am I?
	Right Angle Relation
	Triangles: Acute, Right, Obtuse
	What Type of Angle?
 Skill Quests	
Spatial features in 2-D figures	Classifying angles
	Labeling points & lines
	Identifying spatial features in 2-D shapes
 Ebooks	
Grade 4, Series E: Space, Shape and Position	Lines, angles and shapes

4.G.2	
Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.	
 Activities	
Geometry	Collect the Shapes 2
	Shapes
	Triangle - Tasters
 Skill Quests	
Classify 2-D figures	Classifying plane shapes by their spatial features
	Classifying triangles by their sides & angles
 Ebooks	
Grade 4, Series E: Space, Shape and Position	Lines, angles and shapes

4.G.3

Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.

Activities

Geometry

Symmetry

Symmetry or Not?

Line of Symmetry

Skill Quests

Lines of symmetry

Lines of symmetry

Ebooks

Grade 4, Series E: Space, Shape and Position

Lines, angles and shapes

Grade 5

5.OA Operations & Algebraic Thinking

Big ideas

Plotting Patterns	OA.3
Telling a Data Story	OA.3
Factors and Groups	OA.1, OA.2
Modeling	OA.3
Fraction Connections	
Seeing Division	
Powers and Place Value	OA.1, OA.2
Layers of Cubes	OA.1
Shapes on a Plane	OA.3

Write and interpret numerical expressions

5.OA.1	
Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	
Activities	
Operations & Algebraic Thinking	Order of Operations 1 (PEDMAS)
	Operations Order 1 (PEDMAS)
Skill Quests	
Grouping symbols	Order of operations with grouping symbols
Ebooks	
Grade 6, Series G: Patterns and Algebra	Properties of arithmetic

5.OA.2	
Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	
Activities	
Operations & Algebraic Thinking	Prime Factoring
	Product of Prime Factors
Skill Quests	
Write & interpret expressions	Writing & interpreting expressions without solving
Express numbers as a product of primes	Expressing numbers as products of prime factors

Analyze patterns and relationships

5.OA.3	
Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.	

 Activities	
Operations & Algebraic Thinking	Table of Values
 Skill Quests	
Numerical patterns	Comparing numerical patterns
	Interpreting & creating a number pattern table
	Graphing ordered pairs from numerical patterns
 Ebooks	
Grade 6, Series G: Patterns and Algebra	Patterns and functions

5.NBT Number & Operations in Base Ten

Big ideas

Plotting Patterns	
Telling a Data Story	
Factors and Groups	
Modeling	NBT.3, NBT.5, NBT.7
Fraction Connections	NBT.3
Seeing Division	NBT.4, NBT.6, NBT.7
Powers and Place Value	NBT.1, NBT.2, NBT.3
Layers of Cubes	
Shapes on a Plane	

Understand the place value system

5.NBT.1	
Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	
 Activities	
Number & Operations in Base Ten 1-4	Place Value 1 ($\times 10$ and $\div 10$)
	Place Value 2 ($\times 10$ and $\div 10$)
 Skill Quests	
The place value system	Identifying the place value of a digit in a number
	Understanding the place value system: powers of 10
 Ebooks	
Grade 5, Series F: Multiplication and Division	Mental multiplication strategies

5.NBT.2	
Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.	
 Activities	
Number & Operations in Base Ten 1-4	Multiplying by 10, 100, 1000
	Dividing by 10, 100, 1000
	Multiply Decimals and Powers of 10

	Divide by Powers of 10
 Skill Quests	
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
 Ebooks	
Grade 5, Series F: Multiplication and Division	Mental multiplication strategies

5.NBT.3 Read, write, and compare decimals to thousandths.	
 Activities	
Number & Operations in Base Ten 1-4	Decimals from Words to Digits 1
	Decimals from Words to Digits 2
	Place Value to Millions
	Place Value to Billions
	Decimal Place Value
	Decimal Order 1
	Decimal Order 2
 Skill Quests	
Read & write decimals to thousandths	Reading & writing decimals to thousandths
Compare decimals to thousandths	Comparing & ordering decimals to thousandths
 Ebooks	
Grade 5, Series F: Fractions, decimals and percentages	Fractions, decimals and percentages
Grade 6, Series G: Fractions, decimals and percentages	Decimals

5.NBT.4 Use place value understanding to round decimals to any place.	
 Activities	
Number & Operations in Base Ten 1-4	Rounding Decimals 1
 Skill Quests	
Round decimals	Rounding decimals
 Ebooks	
Grade 6, Series G: Fractions, decimals and percentages	Decimals

Perform operations with multi-digit whole numbers and with decimals to hundredths

5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.	
 Activities	
Number & Operations in Base Ten 5-7	Long Multiplication
 Skill Quests	
Multiply multi-digit numbers, algorithm	Multiplying multi-digit numbers, algorithm
 Ebooks	

Grade 5, Series F: Multiplication and Division	Written methods
Grade 5 Multiplication and Division Worksheets	

5.NBT.6

Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Activities

Number & Operations in Base Ten 5-7

Divide: 2-Digit Divisor, Remainder

Long Division

Mental Methods Division 2

Mental Methods Division 3

Skill Quests

Divide multi-digit numbers

Using facts to divide 2-digit multiples of 10

Multiplying & dividing 2-digit multiples of 10

Multiplication/division problems: multiples of 10

Dividing by subtracting partial products

Dividing multi-digit numbers, algorithm

Divide multi-digit numbers, whole number remainder

Ebooks

Grade 5, Series F: Multiplication and Division

Mental division strategies

Written methods

Grade 5 Multiplication and Division Worksheets

5.NBT.7

Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Activities

Number & Operations in Base Ten 5-7

Add Decimals 1

Subtract Decimals 1

Multiply Decimals 1

Multiply Decimals: Area Model

Divide Decimal by Whole Number

Money Problems: Four Operations

Skill Quests

Operations with decimals

Adding decimals to hundredths, algorithm

Subtracting decimals using mental strategies

Subtracting decimals to hundredths, algorithm

Multiplying decimals & whole numbers

Multiplying decimals to hundredths, algorithm

Multiplying decimals using mental strategies

Multiplicative relationships with decimals

Divide whole numbers & decimals, mental strategies

Dividing whole numbers & decimals, algorithm

Ebooks

Grade 6, Series G: Fractions, Decimals and Percentages

Calculating

5.NF Number & Operations – Fractions

Big ideas

Plotting Patterns	NF.7
Telling a Data Story	
Factors and Groups	
Modeling	NF.1, NF.2, NF.3, NF.4, NF.5, NF.6, NF.7
Fraction Connections	NF.1, NF.2, NF.3, NF.4, NF.5, NF.7
Seeing Division	
Powers and Place Value	
Layers of Cubes	
Shapes on a Plane	NF.4, NF.5, NF.6

Use equivalent fractions as a strategy to add and subtract fractions

5.NF.1	
Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	
 Activities	
Number & Operations-Fractions	Add Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Fractions
	Subtract Unlike Mixed Numbers
 Skill Quests	
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
 Ebooks	
Grade 5, Series F: Fractions, Decimals and Percentages	Calculating
Grade 6, Series G: Fractions, Decimals and Percentages	Calculating
Grade 6: Rich Task	The Gumball Heist

5.NF.2	
Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	
 Activities	
Number & Operations-Fractions	Fraction Word Problems
 Skill Quests	
Add/subtract fraction word problems	Solving word problems: fractions & mixed numbers
	Solving fraction word problems

Apply and extend previous understandings of multiplication and division

5.NF.3

Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Activities

Number & Operations-Fractions	Partition into Equal Parts
-------------------------------	----------------------------

Skill Quests

Fractions as division	Interpreting fractions as division
-----------------------	------------------------------------

5.NF.4

Description

Activities

Number & Operations-Fractions	Model Fractions to Multiply
	Multiply Fraction by Whole Number
	Multiply: Whole Number and Fraction
	Multiply Fraction by Fraction
	Multiply Two Fractions 1

Skill Quests

Multiply fractions	Multiplying a fraction by a whole number
	Multiplying a fraction by a fraction
Area of a rectangle, fractional sides	Find the area of a rectangle with fractional sides

Ebooks

Grade 6, Series G: Fractions, Decimals and Percentages	Calculating
Grade 7, Series H: Fractions (newer book)	Where does it work? - Multiplying and dividing fractions

5.NF.5

Interpret multiplication as scaling (resizing).

Activities

Teacher directed

Skill Quests

Compare products & factors	Comparing products & factors
Effects of multiplying fractions	Interpreting multiplying fractions as scaling

5.NF.6

Solve real world problems involving multiplication of fractions and mixed numbers.

Activities

Number & Operations-Fractions	More Fraction Problems
-------------------------------	------------------------

Skill Quests

Multiply fractions word problems	Word problems: multiply fractions & mixed numbers
----------------------------------	---

5.NF.7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.	
 Activities	
Number & Operations-Fractions	Divide Fractions Visual Model
	Divide by a Unit Fraction
 Skill Quests	
Divide unit fractions by whole numbers	Dividing unit fractions by whole numbers, models
Divide whole numbers by unit fractions	Dividing whole numbers by unit fractions, models
Divide unit fractions word problems	Word problems: divide unit fractions/whole numbers

5.MD Measurement & Data

Big ideas

Plotting Patterns	MD.2
Telling a Data Story	
Factors and Groups	MD.4, MD.5
Modeling	MD.4, MD.5
Fraction Connections	MD.2
Seeing Division	MD.3, MD.4, MD.5
Powers and Place Value	
Layers of Cubes	MD.1, MD.3, MD.4, MD.5
Shapes on a Plane	

Convert like measurement units within a given measurement system

5.MD.1 Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.	
 Activities	
Measurement & Data	Converting Units of Length
	Customary Units of Length
	Operations with Length
	Meters and Kilometers
	Converting Units of Mass
	Customary Units of Weight 1
	Customary Units of Weight 2
	Milliliters and Liters
	Customary Units of Capacity
 Skill Quests	
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
	Word problems: measurement conversions
 Ebooks	
Grade 4, Series E: Length, Area and Perimeter	Units of length
Grade 4, Series E: Time	Measuring time
Grade 4, Series E: Volume, Capacity and Mass	Volume and capacity
	Mass
Grade 5, Series F: Length, Area and Perimeter	Units of length
Grade 5, Series F: Volume, Capacity and Mass	Volume and capacity
	Mass

Represent and interpret data

5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.	
 Activities	
Teacher directed	
 Skill Quests	
Fraction problems: line plots	Represent & interpret measurements: line plots

Geometric measurement: understand concepts of volume

5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
 Activities	
Measurement & Data	Volume of Solids and Prisms - 1cm^3 blocks
 Skill Quests	
Teacher directed	
 Ebooks	
Grade 5, Series F: Volume, Capacity and Mass	Volume and capacity

5.MD.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	
 Activities	
Measurement & Data	Volume of Solids and Prisms - 1cm^3 blocks
	How many Blocks?
 Skill Quests	
Measure volume with unit cubes	Measuring volume: unit cubes & cubic centimeters
 Ebooks	
Grade 5, Series F: Volume, Capacity and Mass	Volume and capacity

5.MD.5

Description	
 Activities	
Measurement & Data	Volume: Rectangular Prisms 1
	Volume: Rectangular Prisms 2
 Skill Quests	
Volume: rectangular prisms	Volume: additive & multiplicative strategies
Volume formulas: rectangular prism	Applying volume formulas for rectangular prisms
Volume: composite rectangular prisms	Volume of composite rectangular prisms
 Ebooks	
Grade 5, Series F: Volume, Capacity and Mass	Volume and capacity

5.G Geometry

Big ideas

Plotting Patterns	G.1, G.2
Telling a Data Story	G.1, G.2
Factors and Groups	
Modeling	
Fraction Connections	
Seeing Division	
Powers and Place Value	
Layers of Cubes	
Shapes on a Plane	G.1, G.2, G.3, G.4

Graph points on the coordinate plane to solve real-world and mathematical problems

5.G.1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	
 Activities	
Geometry	Coordinate Graphs: 1st Quadrant
 Skill Quests	
The coordinate plane	Introducing the coordinate plane
 Ebooks	
Grade 5, Series F: Position	Coordinates
Grade 6, Series G: Position	Coordinates

5.G.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	
 Activities	

Geometry	Coordinate Graphs: 1st Quadrant
 Skill Quests	
Graph in the first quadrant	Graphing in the first quadrant
 Ebooks	
Grade 5, Series F: Position	Coordinates
Grade 6, Series G: Position	Coordinates

Classify two-dimensional figures into categories based on their properties

5.G.3	
Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	
 Activities	
Geometry	Properties of Quadrilaterals
 Skill Quests	
Attributes of 2-D figures	Sorting plane shapes
 Ebooks	
Grade 5, Series F: Geometry	2D Shapes

5.G.4	
Classify two-dimensional figures in a hierarchy based on properties.	
 Activities	
Geometry	Collect More Shapes
	Collect the Shapes 2
	Collect the Polygons
 Skill Quests	
Classify 2-D figures, properties	Classifying 2-D figures in a hierarchy
	Classifying quadrilaterals
 Ebooks	
Grade 5, Series F: Geometry	2D Shapes

Grade 6

6.RP Ratios & Proportional Relationships

Big ideas

Variability in Data	
The Shape of Distributions	
Fraction Relationships	RP.1, RP.3
Patterns inside Numbers	RP.3
Generalizing with Multiple Representations	RP.1, RP.2, RP.3
Relationships Between Variables	RP.1, RP.2, RP.3
Model the World	RP.1, RP.2, RP.3
Nets and Surface Area	
Distance and Direction	
Graphing Shapes	

Understand ratio concepts and use ratio reasoning to solve problems

6.RP.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.	
 Activities	
Teacher directed	
 Skill Quests	
Introduction to ratios	Defining, understanding & writing ratios
 Ebooks	
Grade 8, Series I Curriculum Ready: Rates and Ratios	Ratios

6.RP.2 Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship.	
 Activities	
Ratios & Proportional Relationships	Rates
 Skill Quests	
Introduction to unit rate	Understanding unit rates & making comparisons

6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.	
 Activities	
Ratios & Proportional Relationships	Rate Word Problems
	Ratios
	Equivalent Ratios

	Ratio Word Problems
	Average Speed
	Best Buy
	Percentage of an amount using fractions (<100%)
	Quantities to Percentages (no units)
	Solve Percent Equations
	Percentage Word Problems
	Customary Units of Length
	Customary Units of Capacity
	Customary Units of Weight 1
	Customary Units of Weight 2
	Graphing from a Table of Values
	Graphing from a Table of Values 2
 Skill Quests	
Ratio tables	Creating tables of equivalent ratios
	Plotting coordinates from ratio tables
Unit rate	Solving unit rate problems for given time periods
	Solving unit rate problems involving unit pricing
Percent of a quantity	Expressing rates as a percent
	Solving percent problems: finding the whole
Convert measurements using ratios	Converting measurement units using ratios
 Ebooks	
Grade 8, Series I Curriculum Ready: Rates and Ratios	Ratios
	Equivalent ratios

6.NS The Number System

Big ideas

Variability in Data	
The Shape of Distributions	
Fraction Relationships	NS.1
Patterns inside Numbers	NS.4
Generalizing with Multiple Representations	
Relationships Between Variables	NS.8
Model the World	NS.2, NS.3, NS.8
Nets and Surface Area	
Distance and Direction	NS.5, NS.6, NS.7
Graphing Shapes	NS.8

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

6.NS.1
Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.
 Activities

The Number System 1-4	Divide Fractions by Fractions 1
	Dividing Fractions
 Skill Quests	
Divide fractions	Dividing a fraction by a positive integer
	Dividing a positive integer by a fraction
	Dividing a fraction by a fraction
	Dividing fractions & mixed numbers
	Solving word problems: division of fractions
 Ebooks	
Grade 7, Series H: Fractions	Division of fractions
Grade 7, Series H: Fractions 2	Division of fractions
Grade 7, Series H Curriculum Ready: Fractions	Multiplying and dividing fractions

Compute fluently with multi-digit numbers and find common factors and multiples

6.NS.2	
Fluently divide multi-digit numbers using the standard algorithm.	
 Activities	
The Number System 1-4	Divide: 1-Digit Divisor 2
	Divide: 2-Digit Divisor, Remainder
	Long Division
 Skill Quests	
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
 Ebooks	
Grade 6, Series G: Multiplication and division	Written methods
Grade 6: Division Worksheets	

6.NS.3	
Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	
 Activities	
The Number System 1-4	Adding Decimals
	Subtracting Decimals
	Adding and Subtracting Decimals
	Multiply Decimal by Decimal
	Divide Decimal by Whole Number
	Divide Decimal by Decimal
 Skill Quests	
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

Ebooks	
Grade 6, Series G: Fractions, Decimals and Percentages	Calculating
Grade 6: Operations with Decimals Worksheets	Calculating

6.NS.4

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

Activities

The Number System 1-4	Find the Factor
	Greatest Common Factor
	Multiples
	Least Common Multiple

Skill Quests

GCF & LCM	Greatest common factor
	Least common multiple
	Solving word problems: factors & multiples
	Factoring using the distributive property

Ebooks

Grade 7, Series H: Special Numbers, Factors and Multiples	Factors
	The highest Common Factor (HCF)
	Multiples
	Lowest Common Multiple (LCM)
Grade 7, Series H: Special Numbers, Factors and Multiples 2	Factors
	The highest Common Factor (HCF)
	Multiples
	Lowest Common Multiple (LCM)

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

6.NS.5

Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

Activities

Teacher directed

Skill Quests

Positive & negative numbers	Investigating & interpreting integers
-----------------------------	---------------------------------------

Ebooks

Grade 6, Series G: Reading and Understanding Whole Numbers	Types of numbers
--	------------------

6.NS.6

Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.

Activities

The Number System 6-8	Integers on a Number Line
	Number Plane
	Ordered Pairs
	Coordinate Graphs
 Skill Quests	
Opposites on the number line	Opposites on the number line
Graph in the 4 quadrants	Graphing coordinates in the 4 quadrants
	Graphing coordinates across the x- & y-axis
Graph rational numbers	Placing rational numbers on the number line
	Graphing rational numbers on the coordinate plane
 Ebooks	
Grade 7, Series H Curriculum Ready: Directed Numbers	Directed numbers

6.NS.7 Understand ordering and absolute value of rational numbers.	
 Activities	
The Number System 6-8	Ordering Integers (Number Line)
	Comparing Integers
	Absolute Value
 Skill Quests	
Compare rational numbers	Comparing integers
	Comparing rational numbers
Order rational numbers	Exploring the everyday language of integers
	Statements of order: rational numbers
Introduction to absolute value	Introducing absolute value
Absolute value vs order	Interpreting meanings of integers in context
 Ebooks	
Grade 7, Series H Curriculum Ready: Directed Numbers	Directed numbers

6.NS.8 Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	
 Activities	
The Number System 6-8	Graphing from a Table of Values
	Graphing from a Table of Values
 Skill Quests	
Solve problems by graphing: 4 quadrants	Solving problems by graphing in the 4 quadrants
	Find the distance between 2 points, absolute value
 Ebooks	
Grade 7, Series H: The Number Plane	The number plane

6.EE Expressions & Equations

Big ideas

Variability in Data	
The Shape of Distributions	
Fraction Relationships	
Patterns inside Numbers	
Generalizing with Multiple Representations	EE.2, EE.3, EE.4, EE.6, EE.7
Relationships Between Variables	EE.9
Model the World	
Nets and Surface Area	EE.1, EE.2
Distance and Direction	
Graphing Shapes	EE.2

Apply and extend previous understandings of arithmetic to algebraic expressions

6.EE.1	
Write and evaluate numerical expressions involving whole-number exponents.	
 Activities	
Expressions & Equations	Exponents
	I am Thinking of a Number!
	Order of Operations 2 (PEDMAS)
 Skill Quests	
Numerical expressions with exponents	Writing numerical expressions with exponents
	Evaluating numerical expressions with exponents
 Ebooks	
Grade 7, Series H Curriculum Ready: Whole Numbers	Exponent notation for numbers

6.EE.2	
Write, read, and evaluate expressions in which letters stand for numbers.	
 Activities	
Expressions & Equations	Writing Algebraic Expressions
	Simple Substitution 1
 Skill Quests	
Write expressions: numbers & variables	Writing expressions with numbers & variables
Parts of an expression	Identifying parts of an expression
Evaluate algebraic expressions	Evaluating algebraic expressions
	Evaluating expressions using order of operations
 Ebooks	
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

6.EE.3	
Apply the properties of operations to generate equivalent expressions.	

 Activities	
Expressions & Equations	Multiplication Properties
 Skill Quests	
Properties of operations: expressions	Properties of operations: equivalent expressions
 Ebooks	
Grade 7, Series H Curriculum Ready: Whole Numbers	Arithmetic laws
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

6.EE.4

Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).

 Activities	
Teacher directed	
 Skill Quests	
Equivalent expressions	Identifying equivalent expressions
 Ebooks	
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

Reason about and solve one-variable equations and inequalities

6.EE.5

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

 Activities	
Teacher directed	
 Skill Quests	
Test solutions	Testing solutions: equations
	Testing solutions: inequalities
 Ebooks	
Grade 6, Series G: Patterns and Algebra	Algebraic thinking
	Solving equations – introducing variables
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

6.EE.6

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

 Activities	
Expressions & Equations	Writing Algebraic Expressions
 Skill Quests	
Write algebraic expressions	Writing algebraic expressions
 Ebooks	
Grade 6, Series G: Patterns and Algebra	Solving equations – simplifying algebraic statements
Grade 6: Rich Task	Pyramid prediction
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

6.EE.7

Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

Activities

Expressions & Equations

Write an Equation: Word Problems

Skill Quests

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

Ebooks

Grade 6, Series G: Patterns and Algebra

Solving equations – introducing variables

Grade 7, Series H Curriculum Ready: Algebra Basics

Algebra basics

6.EE.8

Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Activities

Teacher directed

Skill Quests

Write & represent inequalities

Writing inequalities

Represent algebraic inequalities on a number line

Ebooks

Grade 7, Series H Curriculum Ready: Algebra Basics

Algebra basics

Represent and analyze quantitative relationships between dependent and independent variables

6.EE.9

Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable.

Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Activities

Teacher directed

Skill Quests

Independent & dependent variables

Independent & dependent variables

Ebooks

Grade 7, Series H Curriculum Ready: Algebra Basics

Algebra basics

6.G Geometry

Big ideas

Variability in Data	
The Shape of Distributions	
Fraction Relationships	
Patterns inside Numbers	
Generalizing with Multiple Representations	
Relationships Between Variables	
Model the World	
Nets and Surface Area	G.1, G.2, G.3, G.4
Distance and Direction	G.1, G.2, G.3, G.4
Graphing Shapes	G.1, G.3, G.4

Solve real-world and mathematical problems involving area, surface area, and volume

6.G.1	
Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	
 Activities	
Geometry	Area: Right Triangles
	Area: Triangles
	Area: Squares and Rectangles
	Area: Parallelograms
	Area: Quadrilaterals
	Area: Compound Figures
 Skill Quests	
Area: triangles & quadrilaterals	Finding the area of a right triangle
	Investigating the area of special quadrilaterals
	Real-world area problems: special quadrilaterals
 Ebooks	
Grade 6, Series G: Length, Perimeter and Area	Area
Grade 6: Rich Task	Predicting Area
Grade 7, Series H: Area and Volume	Area of a square
	Area of a rectangle
	Area of a triangle
	Composite areas

6.G.2	
Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l w h$ and $V = b h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	
 Activities	
Geometry	Volume: Rectangular Prisms 1
	Volume: Rectangular Prisms 2

Skill Quests	
Volume: rectangular prisms, formula	Volume: rectangular prisms, fraction edge lengths
Ebooks	
Grade 6, Series G: Volume, Capacity and Mass	Volume and capacity
Grade 7, Series H: Area, Volume and Capacity	Volume of a cube
	Volume of a rectangular prism
Grade 7, Series H: Area, Volume and Capacity 2	Volume of a cube
	Volume of a rectangular prism

6.G.3

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

Activities	
Teacher directed	
Skill Quests	
Polygons in the coordinate plane	Drawing polygons in the coordinate plane

6.G.4

Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

Activities	
Geometry	Nets
	Surface Area: Rectangular Prisms
	Surface Area: Triangular Prisms
Skill Quests	
Surface area	Connecting 3-D objects with their nets
	Calculating the surface area of rectangular prisms
Ebooks	
Grade 6, Series G: Geometry	3D shapes
Grade 6: Rich Task	Wrapping a prism

6.SP Statistics & Probability

Big ideas

Variability in Data	SP.1, SP.4, SP.5
The Shape of Distributions	SP.2, SP.3, SP.5
Fraction Relationships	
Patterns inside Numbers	
Generalizing with Multiple Representations	
Relationships Between Variables	SP.1, SP.2
Model the World	
Nets and Surface Area	
Distance and Direction	
Graphing Shapes	

Develop understanding of statistical variability

6.SP.1 Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	
 Activities	
Teacher directed	
 Skill Quests	
Statistical questions	Evaluating statistical questions
 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data

6.SP.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.	
 Activities	
Teacher directed	
 Skill Quests	
Shape of data distribution	Introducing the shape of data distribution
 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data

6.SP.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 with a single number	
 Activities	
Teacher directed	
 Skill Quests	
Measures of center & variation	Measures of center & variation
	Introducing the upper & lower quartiles
	Introducing interquartile range
	Understanding the median
	Understanding the mean
 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data

Summarize and describe distributions

6.SP.4 Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	
 Activities	
Statistics & Probability	Line Plots
	Dot Plots

	Histograms
	Box-and-Whisker Plots 1
 Skill Quests	
Data displays	Constructing data displays
	Reading & interpreting data in a dot plot
	Reading & interpreting data in a histogram
	Reading & interpreting plots
 Ebooks	
Grade 6, Series G: Data Representation	Types of graphs

6.SP.5 Summarize numerical data sets in relation to their context.	
 Activities	
Statistics & Probability	Mean
	Median
	Mode
	Data Extremes and Range
	Calculating Interquartile Range
 Skill Quests	
Summarize numerical data	Summarizing numerical data
Report observations	Reporting observations in a data display
Attributes of data	Describing attributes of data in data displays
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
Relating measures of center & variation	Choosing appropriate measures of center/variation
	Comparing measures of center & variation
 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data



For more information about Mathletics,
contact our friendly team.

www.mathletics.com/contact