

Mathletics Arizona Standards

Activities (Courses), Skill Quests
and eBooks



Grades 3-6

September, 2025

Mathletics

Mathletics

Arizona Standards

Activities (Courses), Skill Quests and eBooks

September, 2025

Grade 3.....	4
3.OA Operations & Algebraic Thinking	4
A. Represent and solve problems involving multiplication and division	4
B. Understand properties of multiplication and the relationship between multiplication and division	5
C. Multiply and divide within 100	6
D. Solve problems involving the four operations, and identify and explain patterns in arithmetic	6
3.NBT Number & Operations in Base Ten	7
A. Use place value understanding and properties of operations to perform multi-digit arithmetic	7
3.NF Number & Operations – Fractions	9
A. Develop understanding of fractions as numbers	9
3.MD Measurement & Data	10
A. Solve problems involving measurement and estimation	10
B. Represent and interpret data	11
C. Geometric measurement: understand concepts of area and relate area to multiplication and to addition	11
D. Geometric measurement: recognize perimeter	12
3.G Geometry.....	13
A. Reason with shapes and their attributes	13
Grade 4.....	14
4.OA Operations & Algebraic Thinking	14
A. Use the four operations with whole numbers to solve problems	14
B. Gain familiarity with factors and multiples	15
C. Generate and analyze patterns	15
4.NBT Number & Operations in Base Ten	16
A. Generalize place value understanding for multi-digit whole numbers	16
B. Use place value understanding and properties of operations to perform multi-digit arithmetic	17
4.NF Number & Operations – Fractions	18
A. Extend understanding of fraction equivalence and ordering	18
B. Build fractions from unit fractions	19
C. Understand decimal notation for fractions, and compare decimal fractions	20
4.MD Measurement & Data	21
A. Solve problems involving measurement and conversion of measurements	21
B. Represent and interpret data	22
C. Geometric measurement: understand concepts of angle and measure angles	22
4.G Geometry.....	23
A. Draw and identify lines and angles, and classify shapes by properties of their lines and angles	23
Grade 5.....	25
5.OA Operations & Algebraic Thinking	25
A. Write and interpret numerical expressions	25
B. Analyze patterns and relationships	25
5.NBT Number & Operations in Base Ten	26
A. Understand the place value system	26

B. Perform operations with multi-digit whole numbers and with decimals to hundredths.....	27
5.NF Number & Operations – Fractions	28
A. Use equivalent fractions to add and subtract fractions.	28
B. Use previous understandings of multiplication and division to multiply and divide fractions.....	29
5.MD Measurement & Data	30
A. Convert like measurement units within a given measurement system	30
B. Represent and interpret data	31
C. Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.....	31
5.G Geometry.....	32
A. Graph points on the coordinate plane to solve mathematical problems as well as problems in real-world context.....	32
B. Classify two-dimensional figures into categories based on their properties	33
Grade 6.....	34
6.RP Ratios & Proportional Relationships	34
A. Understand ratio concepts and use ratio reasoning to solve problems.....	34
6.NS The Number System	35
A. Apply and extend previous understandings of multiplication and division to divide fractions by fractions.....	35
B. Compute fluently with multi-digit numbers and find common factors and multiples	36
C. Apply and extend previous understandings of numbers to the system of rational numbers	37
6.EE Expressions & Equations	38
A. Apply and extend previous understandings of arithmetic to algebraic expressions.....	38
B. Reason about and solve one-variable equations and inequalities	39
C. Represent and analyze quantitative relationships between dependent and independent variables	41
6.G Geometry.....	41
A. Solve real-world and mathematical problems involving area, surface area, and volume	41
6.SP Statistics & Probability.....	43
A. Develop understanding of statistical variability	43
B. Summarize and describe distributions	43

Grade 3

3.OA Operations & Algebraic Thinking

A. Represent and solve problems involving multiplication and division

3.OA.A.1

Interpret products of whole numbers as the total number of objects in equal groups (e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each).

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 5×5

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.A.2


Interpret whole number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each group when 56 objects are partitioned equally into 8 groups, or as a number of groups when 56 objects are partitioned into equal groups of 8 objects each).




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.A.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
 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.A.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




B. Understand properties of multiplication and the relationship between multiplication and division

3.OA.B.5 Apply properties of operations as strategies to multiply and divide. Properties include commutative and associative properties of multiplication and the distributive property.	
 Activities	
Operations & Algebraic Thinking 3-9	Multiplication Turn-Abouts
	Multiplication Properties
 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	




<p align="center">3.OA.B.6</p> <p align="center">Understand division as an unknown-factor problem.</p>	
 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	




C. Multiply and divide within 100




<p align="center">3.OA.C.7</p> <p align="center">Fluently multiply and divide within 100. By the end of Grade 3, know from memory all multiplication products through 10 x 10 and division quotients when both the quotient and divisor are less than or equal to 10.</p>	
 Activities	
Operations & Algebraic Thinking 3-9	Fact Families: Multiply and Divide
	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	

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

<p align="center">3.OA.D.8</p> <p align="center">Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Utilize understanding of the Order of Operations when there are no parentheses.</p>



 Activities	
Operations & Algebraic Thinking 3-9	Word Problems with Letters
	Order of Operations 1 (PEDMAS)
 Skill Quests	
2-step word problems: 4 operations	2-step word problems with the 4 operations
Order of Operations	Introducing Order of Operations
 Ebooks	
Grade 3, Series D: Patterns and Algebra	Equations and equivalence

3.OA.D.9	
Identify patterns in the addition table and the 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.OA.D.10	
When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	
 Ebooks	
Grade 3, Series D: Patterns and Algebra	Patterns and functions

3.NBT Number & Operations in Base Ten

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

3.NBT.A.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.A.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

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

Subtract within 1000

Subtract 2-digit from 3-digit: number line

Subtract 2-digit from 3-digit: jump strategy

Subtract two 2-digit numbers: base ten blocks

Subtract 2-digit from 3-digit: expanded form

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.A.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




Multiplying by a multiple of 10

3. NF Number & Operations – Fractions

A. Develop understanding of fractions as numbers

3.NF.A.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
 Ebooks	
Grade 3, Series D: Fractions	Introducing fractions

3.NF.A.2	
Understand a fraction as a number on the number line; represent fractions on a number line diagram.	
 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.A.3	
Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	
 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

A. Solve problems involving measurement and estimation

3.MD.A.1a

Tell and write time to the nearest minute and measure time intervals in minutes. A. Solve word problems involving addition and subtraction of time intervals in minutes.

Activities

Measurement & Data 1-4

What is the Time?

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.A.1b

Solve word problems involving money through \$20.00, using symbols \$, ".", ¢.

Activities

Teacher directed

Skill Quests

Teacher directed

3.MD.A.2

Measure and estimate liquid volumes and masses of objects using metric units. (Excludes compound units such as cm³ and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. Excludes multiplicative comparison problems.

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


B. Represent and interpret data



3.MD.B.3	
Create 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	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.B.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	
Teacher directed	
 Skill Quests	
Represent & read line plots	Representing & reading line plots
 Ebooks	
Grade 3, Series D: Chance and Data	Data

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




3.MD.C.5	
Understand area as an attribute of plane figures and understand concepts of area measurement.	
 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.C.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.C.7



Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. b. Multiply side lengths to find areas of rectangles with whole number side lengths in the context of solving real-world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. c. Use tiling to show that the area of a rectangle with whole number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning. d. Understand that rectilinear figures can be decomposed into non-overlapping rectangles and that the sum of the areas of these rectangles is identical to the area of the original rectilinear figure. Apply this technique to solve problems in real-world contexts.


 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

D. Geometric measurement: recognize perimeter

3.MD.D.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

A. Reason with shapes and their attributes

<p>3.G.A.1</p> <p>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.</p>	
 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

<p>3.G.A.2</p> <p>Partition shapes into b parts with equal areas. Express the area of each part as a unit fraction $\frac{1}{b}$ of the whole. (Grade 3 expectations are limited to fractions with denominators $b = 2, 3, 4, 6, 8$.)</p>	
 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

A. Use the four operations with whole numbers to solve problems

4.OA.A.1

Represent verbal statements of multiplicative comparisons as multiplication equations. Interpret a multiplication equation as a comparison (e.g., 35 is the number of objects in 5 groups, each containing 7 objects, and is also the number of objects in 7 groups, each containing 5 objects).

Activities

Teacher directed

Skill Quests

Interpret multiplication as a comparison

Describe comparisons using multiplication language

4.OA.A.2

Multiply or divide within 1000 to solve word problems involving multiplicative comparison (e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison)

Activities

Teacher directed

Skill Quests

Comparison word problems

Solving comparison word problems

4.OA.A.3

Solve multistep word problems using the four operations, including problems in which remainders must be interpreted. Understand how the remainder is a fraction of the divisor. Represent these problems using equations with a letter standing for the unknown quantity.

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

B. Gain familiarity with factors and multiples

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

C. Generate and analyze patterns

4.OA.C.5	
Generate a number pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself and explain the pattern informally (e.g., given the rule “add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers).	
 Activities	
Operations & Algebraic Thinking	Increasing Patterns
	Decreasing Patterns
	Describing Patterns
 Skill Quests	
Number & shape patterns	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.OA.C.6	
When solving problems, assess the reasonableness of answers using mental computation and estimation strategies including rounding.	
 Activities	
Operations & Algebraic Thinking	Increasing Patterns
	Decreasing Patterns
	Describing Patterns
 Skill Quests	
Number & shape patterns	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

A. Generalize place value understanding for multi-digit whole numbers

4.NBT.A.1

Apply concepts of place value, multiplication, and division to understand 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.A.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.A.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

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

4.NBT.B.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.B.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.B.6

Demonstrate understanding of division by finding whole number quotients and remainders with up to four-digit dividends and one-digit divisors.

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

A. Extend understanding of fraction equivalence and ordering

4.NF.A.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.A.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 $\frac{1}{2}$. 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	

B. Build fractions from unit fractions

4.NF.B.3

Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of unit fractions ($\frac{1}{b}$). a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way (e.g., $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{2}{8} + \frac{1}{8}$; $2\frac{1}{8} = 1 + 1 + \frac{1}{8}$ or $2\frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$). c. Add and subtract mixed numbers with like denominators (e.g., by using properties of operations and the relationship between addition and subtraction and/or by replacing each mixed number with an equivalent fraction).

d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.

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.B.4

Build fractions from unit fractions. a. Understand a fraction $\frac{a}{b}$ as a multiple of a unit fraction $\frac{1}{b}$. In general, $\frac{a}{b} = a \times \frac{1}{b}$. b.

Understand a multiple of $\frac{a}{b}$ as a multiple of a unit fraction $\frac{1}{b}$, and use this understanding to multiply a whole number by a fraction. In general, $n \times \frac{a}{b} = \frac{n \times a}{b}$. c. Solve word problems involving multiplication of a whole number by a fraction. For example, if each person at a party will eat $\frac{3}{8}$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?

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

C. Understand decimal notation for fractions, and compare decimal fractions

4.NF.C.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 (tenths) and 100 (hundredths). For example, express $\frac{3}{10}$ as $\frac{30}{100}$, and $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$.

(Note: Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators, in general, is not a requirement at this grade.)

Activities

Teacher directed

Skill Quests

Add fractions: denominator of 10 and 100	Adding fractions with denominators of 10 and 100
--	--

4.NF.C.6

Use decimal notation for fractions with denominators 10 (tenths) or 100 (hundredths), and locate these decimals on a number line.

Activities

Number & Operations-Fractions	Decimals from Words to Digits 1
	Decimals on the Number Line

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.C.7

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

Activities

Number & Operations-Fractions

Comparing Decimals 1

Decimal Order 1

Skill Quests

Compare decimals to hundredths

Compare & order decimals to hundredths

4.MD Measurement & Data

A. Solve problems involving measurement and conversion of measurements

4.MD.A.1

Know relative sizes of measurement units within one system of units which could include 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 and in a smaller unit in terms of a larger unit.

Activities

Measurement & Data 1-3

Customary Units of Weight 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.A.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

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.A.3 Apply the area and perimeter formulas for rectangles in mathematical problems and problems in real-world contexts including problems with unknown side lengths.	
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

B. Represent and interpret data

4.MD.B.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

C. Geometric measurement: understand concepts of angle and measure angles

4.MD.C.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.C.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.C.7

Understand angle measures 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 within mathematical problems as well as problems in real world contexts.

Activities

Measurement & Data 5-7

Angles of Revolution: Unknown Values

Skill Quests

Problems with adjacent angles

Solving problems with adjacent angles

4.G Geometry

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

4.G.A.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.A.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

👑 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.A.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

A. Write and interpret numerical expressions

5.OA.A.1	
Use parentheses and brackets in numerical expressions, and evaluate expressions with these symbols (Order of Operations).	
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.A.2	
Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	
Activities	
Teacher directed	
Skill Quests	
Write & interpret expressions	Writing & interpreting expressions without solving

B. Analyze patterns and relationships

5.OA.B.3	
Generate two numerical patterns using two given rules (e.g., generate terms in the resulting sequences). Identify and explain the 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 (e.g., given the rule "add 3" and the starting number 0, and given the rule "add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence).	
Activities	
Teacher directed	
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

A. Understand the place value system

5.NBT.A.1

Apply concepts of place value, multiplication, and division to understand 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 $\frac{1}{10}$ 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.A.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.A.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

<div> Ebooks</div>	
Grade 5, Series F: Fractions, decimals and percentages	Fractions, decimals and percentages
Grade 6, Series G: Fractions, decimals and percentages	Decimals

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

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

<div>5.NBT.B.5</div> <div>Fluently multiply multi-digit whole numbers using the standard algorithm.</div>	
<div> Activities</div>	
Number & Operations in Base Ten 5-7	Long Multiplication
<div> Skill Quests</div>	
Multiply multi-digit numbers, algorithm	Multiplying multi-digit numbers, algorithm
<div> Ebooks</div>	
Grade 5, Series F: Multiplication and Division	Written methods
Grade 5 Multiplication and Division Worksheets	

<div>5.NBT.B.6</div> <div>Apply and extend understanding of division to find whole-number quotients of whole numbers with up to four-digit dividends and two digit divisors.</div>	
<div> Activities</div>	
Number & Operations in Base Ten 5-7	Divide: 2-Digit Divisor, Remainder
	Long Division
	Mental Methods Division 2
	Mental Methods Division 3
<div> Skill Quests</div>	
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
<div> Ebooks</div>	
Grade 5, Series F: Multiplication and Division	Mental division strategies
	Written methods
Grade 5 Multiplication and Division Worksheets	

5.NBT.B.7

Add, subtract, multiply, and divide decimals to hundredths, connecting objects or drawings to strategies based on place value, properties of operations, and/or the relationship between operations. Relate the strategy to a written form.

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

A. Use equivalent fractions to add and subtract fractions.

5.NF.A.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.A.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

B. Use previous understandings of multiplication and division to multiply and divide fractions.

5.NF.B.3

Interpret a fraction as the number that results from dividing the whole number numerator by the whole number 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.

Activities

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

Skill Quests

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

5.NF.B.4

Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

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.B.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.B.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.B.7

Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. Use the relationship between multiplication and division to justify conclusions. b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to justify conclusions (e.g., $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$). c. Solve problems in real-world context involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, using a variety of representations.

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

A. Convert like measurement units within a given measurement system

5.MD.A.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

B. Represent and interpret data

5.MD.B.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

C. Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.

5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.	
 Activities	
Teacher directed	
 Skill Quests	
Teacher directed	
 Ebooks	
Grade 5, Series F: Volume, Capacity and Mass	Volume and capacity

5.MD.C.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.C.5

Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

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

A. Graph points on the coordinate plane to solve mathematical problems as well as problems in real-world context

5.G.A.1

Understand and describe a coordinate system as perpendicular number lines, called axes, that intersect at the origin (0, 0). Identify a given point in the first quadrant of the coordinate plane using an ordered pair of numbers, called coordinates. Understand that the first number (x) indicates the distance traveled on the horizontal axis, and the second number (y) indicates the distance traveled on the vertical axis.

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.A.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

Teacher directed

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

B. Classify two-dimensional figures into categories based on their properties

5.G.B.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.B.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

A. Understand ratio concepts and use ratio reasoning to solve problems

6.RP.A.1

Understand the concept of a ratio as comparing two quantities multiplicatively or joining/composing the two quantities in a way that preserves a multiplicative relationship. 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.A.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

Teacher directed

Skill Quests

Introduction to unit rate

Understanding unit rates & making comparisons

6.RP.A.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

Rates

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

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


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

<p>6.NS.A.1</p> <p>Interpret and compute quotients of fractions to solve mathematical problems and problems in real-world context involving division of fractions by fractions using visual fraction models and equations to represent the problem.</p>	
 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

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

6.NS.B.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.B.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.B.4 Use previous understanding of factors to find the greatest common factor and the least common multiple. a. Find the greatest common factor of two whole numbers less than or equal to 100. b. Find the least common multiple of two whole numbers less than or equal to 12. c. Use the distributive property to express a sum of two whole numbers 1 to 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)

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

6.NS.C.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.C.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.C.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 Absolute value vs order	Introducing absolute value
	Interpreting meanings of integers in context
 Ebooks	
Grade 7, Series H Curriculum Ready: Directed Numbers	Directed numbers

6.NS.C.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 2
 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

A. Apply and extend previous understandings of arithmetic to algebraic expressions

6.EE.A.1 Write and evaluate numerical expressions involving whole-number exponents.	
 Activities	
Expressions & Equations	Exponents
 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.A.2

Write, read, and evaluate algebraic expressions.

Activities

Expressions & Equations

Order of Operations 2 (PEDMAS)

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.A.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.A.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

B. Reason about and solve one-variable equations and inequalities


6.EE.B.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.B.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	I am Thinking of a Number!
 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.B.7	
Solve mathematical problems and problems in real-world context by writing and solving equations of the form $x + p = q$, $x - p = q$, $px = q$, and $x/p = q$ for cases in which p , q and x are all non-negative 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.B.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

C. Represent and analyze quantitative relationships between dependent and independent variables

6.EE.C.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

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

6.G.A.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.A.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. Understand and use the formula $V = B \cdot h$, where in this case, B is the area of the base ($B = l \times w$) to find volumes of right rectangular prisms with fractional edge lengths in mathematical problems and problems in real-world context.

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.A.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.A.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

A. Develop understanding of statistical variability



6.SP.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.	
Activities	
Teacher directed	
Skill Quests	
Statistical questions	Evaluating statistical questions
Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data




6.SP.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.	
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.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 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

B. Summarize and describe distributions

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

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

<p align="center">6.SP.B.5 Summarize numerical data sets in relation to their context.</p>	
 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