

Mathletics

New York State Next Generation Learning Standards

Activities (Courses), Skill Quests and eBooks



Grades 3-6

September, 2025

Mathletics

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September, 2025

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Grade 3

NY-3.OA Operations & Algebraic Thinking

Represent and solve problems involving multiplication and division

NY-3.OA.1 Interpret products of whole numbers.	
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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	

NY-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	

NY-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
 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	

NY-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

NY-3.OA.5	
Apply properties of operations as strategies to multiply and divide.	
 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, Series D: Multiplication and Division	Division
Grade 3 Division Worksheets	

NY-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

NY-3.OA.7

Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations; Know from memory all products of two one-digit numbers.

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

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

NY-3.OA.8

Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations.

Activities

Operations & Algebraic Thinking 3-9

Word Problems with Letters

Skill Quests

2-step word problems: 4 operations

2-step word problems with the 4 operations

 Ebooks	
Grade 3, Series D: Patterns and Algebra	Equations and equivalence

NY-3.OA.9
Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).

 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

NY-3.NBT Number & Operations in Base Ten

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

NY-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

NY-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
	Missing Numbers 1
	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	

NY-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	Multiplying by a multiple of 10

NY-3.NF Number & Operations – Fractions

Develop understanding of fractions as numbers

NY-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 fourths of shapes: partitioning
	Introducing sixths
	Thirds & sixths of objects, shapes & sets
📖 Ebooks	
Grade 3, Series D: Fractions	Introducing fractions

NY-3.NF.2

Understand a fraction as a number on the number line; represent fractions on a number line.

Activities

Number & Operations-Fractions	Identifying Fractions on a Number Line
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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
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NY-3.NF.3

Explain equivalence of fractions 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
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NY-3.MD Measurement & Data

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

NY-3.MD.1

Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step 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

NY-3.MD.2

Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l); Add, subtract, multiply, or divide to solve one-step word problems involving masses or liquid volumes that are given in the same units.

Activities

Measurement & Data 1-4

How Full?

How Heavy?

Mass Word Problems

Skill Quests

Liquid volume

Estimating, comparing & measuring in liters

Liquid volume: milliliters

Solve word problems: liquid volume

Solving word problems involving liquid volume

Ebooks

Grade 3, Series D: Measurement

Volume and capacity

Mass

Represent and interpret data

NY-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

NY-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

NY-3.MD.5	
Recognize 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

NY-3.MD.6	
Measure areas by counting unit squares.	
 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

NY-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 as an attribute of plane figures and distinguish between linear and area measures.

NY-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

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

NY-3.G Geometry

Reason with shapes and their attributes

NY-3.G.1

Recognize and classify polygons based on the number of sides and vertices. Identify shapes that do not belong to one of the given 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

NY-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
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Ebooks

Grade 3, Series D: Fractions

Introducing fractions

Grade 4

NY-4.OA Operations & Algebraic Thinking

Use the four operations with whole numbers to solve problems

NY-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

NY-4.OA.2

Multiply or divide to solve word problems involving multiplicative comparison, distinguishing multiplicative comparison from additive comparison. Use drawings and equations with a symbol for the unknown number to represent the problem.

Activities

Teacher directed

Skill Quests

Comparison word problems

Solving comparison word problems

NY-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.

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

NY-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

NY-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

NY-4.NBT Number & Operations in Base Ten

Generalize place value understanding for multi-digit whole numbers

NY-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	

NY-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 Notation
Expanding Numbers
Understanding Place Value 2
Understanding Place Value 3
Place Value to Millions
Place Value 3
Decompose Numbers
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

NY-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

NY-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	

NY-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	

NY-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

NY-4.NF Number & Operations – Fractions

Extend understanding of fraction equivalence and ordering

NY-4.NF.1	
<p>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.</p>	
 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	

NY-4.NF.2	
<p>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.</p>	
 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 by applying and extending previous understandings of operations on whole numbers.

NY-4.NF.3	
<p>Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p>	
 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	

NY-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

NY-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

NY-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	

NY-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

NY-4.MD Measurement & Data

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

NY-4.MD.1

Know relative sizes of measurement units: ft., in.; km, m, cm. Know the conversion factor and use it to convert measurements in a larger unit in terms of a smaller unit: ft., in.; km, m, cm; hr., min., sec. Given the conversion factor, convert all other measurements within a single system of measurement from a larger unit to a smaller unit.

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

NY-4.MD.2

Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money.

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

Represent length measurements

- Representing length measurements on number lines

Ebooks

Grade 4, Series E: Time

- Measuring time

Grade 4, Series E: Volume, Capacity and Mass

- Volume and capacity
- Mass

NY-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

NY-4.MD.4

Make a line plot to display a data set of measurements in fractions of a unit. 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

NY-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

NY-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

NY-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

NY-4.G Geometry

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

NY-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
	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

NY-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.	
 Activities	
Geometry	Triangles; Acute, Right, Obtuse
	Triangle - Tasters
 Skill Quests	
Classify 2-D figures	Classifying triangles by their sides & angles
 Ebooks	
Grade 4, Series E: Space, Shape and Position	Lines, angles and shapes

NY-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

NY-5.OA Operations & Algebraic Thinking

Write and interpret numerical expressions

NY-5.OA.1	
Apply the order of operations to evaluate numerical expressions.	
 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

NY-5.OA.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

Analyze patterns and relationships

NY-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

NY-5.NBT Number & Operations in Base Ten

Understand the place value system

NY-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 $\frac{1}{10}$ 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

NY-5.NBT.2	
Use whole-number exponents to denote powers of 10. 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.	
 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

NY-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
	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

NY-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

NY-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	

NY-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	

NY-5.NBT.7

Using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between operations: add and subtract decimals to hundredths; multiply and divide decimals to hundredths.

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

NY-5.NF Number & Operations – Fractions

Use equivalent fractions as a strategy to add and subtract fractions

NY-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

NY-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
	More Fraction 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 to multiply and divide fractions.

NY-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.

Activities

Number & Operations-Fractions	Partition into Equal Parts
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Skill Quests

Fractions as division	Interpreting fractions as division
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NY-5.NF.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

NY-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

NY-5.NF.6

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

Activities

Teacher directed

Skill Quests

Multiply fractions word problems

Word problems: multiply fractions & mixed numbers

NY-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

NY-5.MD Measurement & Data

Convert like measurement units within a given measurement system

NY-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

NY-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 and relate volume to multiplication and to addition.

NY-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

NY-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

NY-5.MD.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

NY-5.G Geometry

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

NY-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.	
☰ 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

NY-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

NY-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

NY-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

NY-6.RP Ratios & Proportional Relationships

Understand ratio concepts and use ratio reasoning to solve problems

NY-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

NY-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

NY-6.RP.3	
Use ratio and rate reasoning to solve real-world and mathematical problems.	
 Activities	
	Average Speed
	Best Buy
	Rate word problems
	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
Ratio tables	Creating tables of equivalent ratios
 Ebooks	
Grade 8, Series I Curriculum Ready: Rates and Ratios	Ratios
	Equivalent ratios

NY-6.NS The Number System

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

NY-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

NY-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	

NY-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

NY-6.NS.4

Find the greatest common factor of two whole numbers less than or equal to 100. 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 other than 1. Find the least common multiple of two whole numbers less than or equal to 12.

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

NY-6.NS.5

Understand that positive and negative numbers are used together to describe quantities having opposite directions or values. Use positive and negative numbers to represent quantities in realworld 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

NY-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

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

NY-6.NS.8

Solve real-world and mathematical problems by graphing points on a 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	
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The Number System 6-8	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

NY-6.EE Expressions & Equations

Apply and extend previous understandings of arithmetic to algebraic expressions

NY-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

NY-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

NY-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

NY-6.EE.4

Identify when two expressions are equivalent.

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

NY-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

NY-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

NY-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

Solve Equations: Multiply, Divide 1

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

NY-6.EE.8	
Write an inequality of the form $x > c$, $x \geq c$, $x \leq c$, or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of these forms have infinitely many solutions; represent solutions of such inequalities on a number line.	
Activities	
Expressions, Equations, and Inequalities	Inequalities on a Number Line: Basics
	Inequalities on a Number Line: Mixed Basics
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

NY-6.EE.9	
Use variables to represent two quantities in a real-world problem that change in relationship to one another. Given a verbal context and an equation, identify 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.	
Activities	
Teacher directed	
Skill Quests	
Independent & dependent variables	Independent & dependent variables
Ebooks	
Grade 7, Series H Curriculum Ready: Algebra Basics	Algebra basics

NY-6.G Geometry

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

NY-6.G.1	
Find area of triangles, trapezoids, and other polygons by composing into rectangles or decomposing into triangles and quadrilaterals. 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

NY-6.G.2	
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

NY-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

NY-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 Quets	
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

NY-6.SP Statistics & Probability

Develop understanding of statistical variability

NY-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 Quets	
Statistical questions	Evaluating statistical questions
Population & sample size	Understanding population & sample size
📖 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data

NY-6.SP.2	
Understand that a set of quantitative 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 Quets	
Shape of data distribution	Introducing the shape of data distribution
📖 Ebooks	
Grade 6, Series G: Data Representation	Collecting and analyzing data

NY-6.SP.3	
Recognize that a measure of center for a quantitative 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 Quets	
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

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

NY-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



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