

# Mathletics

## Georgia Standards of Excellence

Activities (Courses) and Skill Quests



**Grades 3-6**

August, 2025

**Mathletics**

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Activities (Courses) & Skill Quests

August, 2025

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# Grade 3

## Numerical Reasoning

**3.NR.1 Use place value reasoning to represent, read, write, and compare numerical values up to 10,000 and round whole numbers up to 1,000.**

<b>3.NR.1.1</b> Read and write multi-digit whole numbers up to 10,000 to the thousands using base-ten numerals and expanded form.	
Course Topics	Activities
3.NR.1 - Place Value	Place Value to Thousands
	Place Value 3
	Partition and Rename 2
	Expanding Numbers
Topics	Skill Quests
Teacher directed	

<b>3.NR.1.2</b> Use place value reasoning to compare multi-digit numbers up to 10,000, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	
Course Topics	Activities
3.NR.1 - Place Value	Which Is Greater?
	Which Is Less?
	Smallest and largest numbers
	Ascending Order
	Descending Order
	Greater Than or Less Than 1
Topics	Skill Quests
Teacher directed	

<b>3.NR.1.3</b> Use place value understanding to round whole numbers within up to 1000 to the nearest 10 or 100.	
Course Topics	Activities
3.NR.1 - Place Value	Nearest Ten?
	Rounding Numbers
Topics	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

## Patterning and Algebraic Reasoning

**3.PAR.2 Use part-whole strategies to represent and solve real-life problems involving addition and subtraction with whole numbers up to 10,000.**

<b>3.PAR.2.1</b> Fluently add and subtract within 1000 to solve problems.	
Course Topics	Activities
3.PAR.2 - Add & Subtract	Jump Add and Subtract
	Split Add and Subtract
	Compensation - Add
	Compensation - Subtract
Topics	Skill Quests
Teacher directed	

<b>3.PAR.2.2</b> Apply part-whole strategies, properties of operations and place value understanding, to solve problems involving addition and subtraction within 10,000. Represent these problems using equations with a letter standing for the unknown quantity. Justify solutions.	
Course Topics	Activities
3.PAR.2 - Add & Subtract	Addition Properties
	Columns that Add
	Add Two 2-Digit Numbers
	Add 3-Digit Numbers
	Strategies for Column Addition
	Add Two 2-Digit Numbers: Regroup
	Add 3-Digit Numbers: Regroup
	Columns that Subtract
	Subtract Numbers
	3-Digit Differences
	Subtract Numbers: Regroup
	2-Digit Differences: Regroup
	3-Digit Differences: 1 Regrouping
	3-Digit Differences: 2 Regroupings
	Estimate Sums
	Estimate Differences
Topics	Skill Quests
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-digit numbers: compensation

**3.PAR.3 Use part-whole strategies to solve real-life, mathematical problems involving multiplication and division with whole numbers within 100.**

<b>3.PAR.3.1</b>	
Describe, extend, and create numeric patterns related to multiplication. Make predictions related to the patterns.	
<b>Course Topics</b>	<b>Activities</b>
3.PAR.3 - Multiplication & Division	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
	Divide Into Equal Groups
	Dividing Twos
	Dividing Threes
	Dividing Fours
	Dividing Fives
	Dividing Sixes
	Dividing Sevens
	Dividing Eights
	Dividing Nines
	Dividing Tens
<b>Topics</b>	<b>Skill Quests</b>
Number patterns	Identifying & creating number patterns
	Identifying odd & even number patterns
	Exploring number patterns in tables & charts

<b>3.PAR.3.2</b>	
Represent single digit multiplication and division facts using a variety of strategies. Explain the relationship between multiplication and division.	
<b>Course Topics</b>	<b>Activities</b>
3.PAR.3 - Multiplication & Division	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
	Divide Into Equal Groups
	Dividing Twos
	Dividing Threes
	Dividing Fours
	Dividing Fives
	Dividing Sixes



	Dividing Sevens
	Dividing Eights
	Dividing Nines
	Dividing Tens
3.PAR.3: Multiplication & Division problems	Frog Jump Multiplication
	Frog Jump Division
	Share the Treasure
	Fill the Jars
Topics	Skill Quests
Introduction to multiplication	Multiplying using arrays & repeated addition
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
Multiplication & division facts	Multiplication facts: 2, 4, 8
	Multiplication facts: 5, 10
	Multiplication facts: 3, 6, 9
	Multiplication facts: 7
	Recalling multiplication facts to 5 x 5
	Recalling multiplication facts to 10 x 10
	Division facts: 2, 4, 8
	Division facts: 5, 10
	Division facts: 3, 6, 9
	Division facts: 7

3.PAR.3.3	
Apply properties of operations (i.e., commutative property, associative property, distributive property) to multiply and divide within 100.	
Course Topics	Activities
3.PAR.3 - Multiplication & Division problems	Multiplication Turn-Abouts
	Related Facts 2
	Fact Families: Multiply and Divide
Topics	Skill Quests
Multiplication properties	Multiplication properties

3.PAR.3.4	
Use the meaning of the equal sign to determine whether expressions involving addition, subtraction, and multiplication are equivalent.	
Course Topics	Activities
3.PAR.3 - Multiplication & Division	Groups of Two
	Groups of Three
	Groups of Four
	Groups of Five
	Groups of Six
	Groups of Seven
	Groups of Eight
	Groups of Nine
Topics	Skill Quests
Teacher directed	

<b>3.PAR.3.5</b>	
Use place value reasoning and properties of operations to multiply one-digit whole numbers by multiples of 10, in the range 10-90.	
Course Topics	Activities
3.PAR.3 - Multiplication & Division	Groups of Ten
	Dividing Tens
Topics	Skill Quests
Multiply by a multiple of 10	Multiplying by a multiple of 10

<b>3.PAR.3.6</b>	
Solve practical, relevant problems involving multiplication and division within 100 using part-whole strategies, visual representations, and/or concrete models.	
Course Topics	Activities
3.PAR.3 - Multiplication & Division	Divide Into Equal Groups
	Dividing Twos
	Dividing Threes
	Dividing Fours
	Dividing Fives
	Dividing Sixes
	Dividing Sevens
	Dividing Eights
	Dividing Nines
3.PAR.3 - Multiplication & Division problems	Arrays 1
	Arrays 2
Topics	Skill Quests
Multiplication & division problems	Multiplication problems: fair share/equal grouping
	Multiplication/division problems: arrays

<b>3.PAR.3.7</b>	
Use multiplication and division to solve problems involving whole numbers to 100. Represent these problems using equations with a letter standing for the unknown quantity. Justify solutions.	
Course Topics	Activities
3.PAR.3 - Multiplication & Division problems	Multiplication Problems 1
	Problems: Times and Divide
	Missing Numbers: $\times$ and $\div$ facts
	Making Pictographs: With Scale
	Column Graphs
	Pictographs: with scale & half symbols
Topics	Skill Quests
Multiply & divide: finding the unknown	Multiplying & dividing: finding the unknown
Division: unknown-factor problems	Understand division as an unknown-factor problem

**3.NR.4 Represent fractions with denominators of 2, 3, 4, 6 and 8 in multiple ways within a framework using visual models.**

<b>3.NR.4.1</b>	
Describe a unit fraction and explain how multiple copies of a unit fraction form a non-unit fraction. Use parts of a whole, parts of a set, points on a number line, distances on a number line and area models.	
Course Topics	Activities
3.NR.4 - Fractions	Thirds and Sixths
	Shade fractions
Topics	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
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
Whole numbers as fractions	Express & recognize whole numbers as fractions

<b>3.NR.4.2</b>	
Compare two unit fractions by flexibly using a variety of tools and strategies.	
Course Topics	Activities
3.NR.4 - Fractions	Identifying Fractions on a Number Line
	Comparing Fractions 1
	Compare Fractions 1a
Topics	Skill Quests
Compare fractions	Comparing fractions: same numerator or denominator

<b>3.NR.4.3</b>	
Represent fractions, including fractions greater than one, in multiple ways.	
Course Topics	Activities
3.NR.4 - Fractions	Model Fractions
	What Fraction is Shaded?
Topics	Skill Quests
Teacher directed	

<b>3.NR.4.4</b>	
Recognize and generate simple equivalent fractions.	
Course Topics	Activities
3.NR.4 - Fractions	Equivalent Fraction Wall 1
Topics	Skill Quests
Investigate equivalent fractions	Investigating equivalent fractions
Find simple equivalent fractions	Recognize & generate simple equivalent fractions

## Measurement & Data Reasoning

**3.MDR.5 Solve real-life, mathematical problems involving length, liquid volume, mass, and time and analyze graphical displays of data to answer relevant questions.**

<b>3.MDR.5.1</b>	
Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.	
Course Topics	Activities
3.MDR.5 - Measurement	Bar Graphs 1
	Bar Graphs 2
Topics	Skill Quests
Scaled pictograph & bar graphs	Reading & representing data: scaled pictograph
	Reading & representing data: scaled bar graph

<b>3.MDR.5.2</b>	
Tell and write time to the nearest minute and estimate time to the nearest fifteen minutes (quarter hour) from the analysis of an analog clock.	
Course Topics	Activities
3.MDR.5 - Measurement	Five Minute Times
	What is the Time?
Topics	Skill Quests
Tell & write time to the minute	Telling time to the minute, digital & analog

<b>3.MDR.5.3</b>	
Solve meaningful problems involving elapsed time, including intervals of time to the hour, half hour, and quarter hour where the times presented are only on the hour, half hour, or quarter hour within a.m. or p.m. only.	
Course Topics	Activities
3.MDR.5 - Measurement	Time Mentals
	Elapsed Time
Topics	Skill Quests
Calculate elapsed time	Calculating elapsed time

<b>3.MDR.5.4</b>	
Use rulers to measure lengths in halves and fourths (quarters) of an inch and a whole inch.	
Course Topics	Activities
3.MDR.5 - Measurement	Measure to the Nearest Half Inch
Topics	Skill Quests
Represent & read line plots	Representing & reading line plots

<b>3.MDR.5.5</b>	
Estimate and measure liquid volumes, lengths and masses of objects using customary units. Solve problems involving mass, length, and volume given in the same unit, and reason about the relative sizes of measurement units within the customary system.	
Course Topics	Activities
3.MDR.5 - Measurement	How Full?

	How Heavy?
	How Heavy is it?
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

## Geometric & Spatial Reasoning

**3.GSR.6 Identify the attributes of polygons, including parallel segments, perpendicular segments, right angles, and symmetry.**

<b>3.GSR.6.1</b>	
Identify perpendicular line segments, parallel line segments, and right angles, identify these in polygons, and solve problems involving parallel line segments, perpendicular line segments, and right angles.	
<b>Course Topics</b>	<b>Activities</b>
3.GSR.6 - Shape	Shapes
	Collect the Shapes 1
	Collect the Shapes 2
	Collect the Polygons
	Count Sides and Corners
	What pair of lines am I?
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>3.GSR.6.2</b>	
Classify, compare, and contrast polygons, with a focus on quadrilaterals, based on properties. Analyze specific 3-dimensional figures to identify and describe quadrilaterals as faces of these figures.	
<b>Course Topics</b>	<b>Activities</b>
3.GSR.6 - Shape	Equal Angles
	Comparing Angles
	Right Angle Relation
	What Type of Angle 2?
	Relate Shapes and Solids
	What Prism am I?
<b>Topics</b>	<b>Skill Quests</b>
Shapes & their attributes	Sorting & naming quadrilaterals
	Comparing & describing two-dimensional shapes

<b>3.GSR.6.3</b>	
Identify lines of symmetry in polygons.	
<b>Course Topics</b>	<b>Activities</b>
3.GSR.6 - Shape	Symmetry or Not?
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

**3.GSR.7 Identify area as a measurable attribute of rectangles and determine the area of a rectangle presented in real-life, mathematical problems.**

<b>3.GSR.7.1</b>	
Investigate area by covering the space of rectangles presented in realistic situations using multiple copies of the same unit, with no gaps or overlaps, and determine the total area (total number of units that covered the space).	
Course Topics	Activities
3.GSR.7 / 3.GSR.8 - Area & Perimeter	Equal Areas
Topics	Skill Quests
Measure area with unit squares	Measuring area with unit squares

<b>3.GSR.7.2</b>	
Determine the area of rectangles (or shapes composed of rectangles) presented in relevant problems by tiling and counting.	
Course Topics	Activities
3.GSR.7 / 3.GSR.8 - Area & Perimeter	Equal Areas
Topics	Skill Quests
Estimate area with tiling	Estimating area with tiling

<b>3.GSR.7.3</b>	
Discover and explain how area can be found by multiplying the dimensions of a rectangle.	
Course Topics	Activities
3.GSR.7 / 3.GSR.8 - Area & Perimeter	Calculate Area of Shapes (inches, feet, yards)
	Area of Squares and Rectangles
	Calculate Areas of Squares and Rectangles
Topics	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

**3.GSR.8 Determine the perimeter of a polygon presented in real-life, mathematical problems**

<b>3.GSR.8.1</b>	
Determine the perimeter of a polygon and explain that the perimeter represents the distance around a polygon. Solve problems involving perimeters of polygons.	
Course Topics	Activities
3.GSR.7 / 3.GSR.8 - Area & Perimeter	Perimeter
	Perimeter Detectives 1
Topics	Skill Quests
Perimeter problems	Perimeter problems
	Introducing perimeter
	Finding the perimeter of rectangles
	Finding a missing side length given the perimeter
	Finding the perimeter of polygons

<b>3.GSR.8.2</b> Investigate and describe how rectangles with the same perimeter can have different areas or how rectangles with the same area can have different perimeters.	
<b>Course Topics</b>	<b>Activities</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Relate perimeter & area	Relating perimeter & area

# Grade 4

## Numerical Reasoning

**4.NR.1 Recognize patterns within the base ten place value system with quantities presented in real-life situations to compare and round multi-digit whole numbers through the hundred-thousands place and compare decimal numbers to the hundredths place.**

<b>4.NR.1.1</b> Read and write multi-digit whole numbers to the hundred-thousands place using base-ten numerals and expanded form.	
Course Topics	Activities Title
4.NR.1 - Number	Numbers in Words
	Numbers from Words to Digits 1
	Expanded Form
Topics	Skill Quests
Read & write multi-digit numbers	Reading & writing multi-digit numbers

<b>4.NR.1.2</b> Recognize and show that a digit in one place has a value ten times greater than what it represents in the place to its right and extend this understanding to determine the value of a digit when it is shifted to the left or right, based on the relationship between multiplication and division.	
Course Topics	Activities Title
4.NR.1 - Number	Understanding Place Value 2
	Understanding Place Value 3
	Place Value 3
Topics	Skill Quests
Place value for multi-digit numbers	Generalizing place value understanding

<b>4.NR.1.3</b> Use place value reasoning to represent, compare, and order multi-digit numbers, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	
Course Topics	Activities Title
4.NR.1 - Number	Greater Than or Less Than?
Topics	Skill Quests
Compare two 6-digit numbers	Comparing two 6-digit numbers

<b>4.NR.1.4</b> Use place value understanding to round multi-digit whole numbers.	
Course Topics	Activities Title
4.NR.1 - Number	Rounding Numbers 1
	Nearest Hundred?
	Nearest Thousand?
Topics	Skill Quests
Round 6-digit numbers	Rounding 6-digit numbers to any place value



**4.NR.2 Using part-whole strategies, solve problems involving addition and subtraction through the hundred-thousands place, as well as multiplication and division of multi-digit whole numbers presented in real-life, mathematical situations**

<b>4.NR.2.1</b>	
Fluently add and subtract multi-digit numbers to solve practical, mathematical problems using place value understanding, properties of operations, and relationships between operations.	
<b>Course Topics</b>	<b>Activities Title</b>
4.NR.2 - Addition & Subtraction	Adding Colossal Columns
	Add Multi-Digit Numbers 2
	Add Multi-Digit Numbers 1
	Add Three 3-Digit Numbers: Regroup
	Subtracting Colossal Columns
	3-Digit Differences with Zeros
	Estimation: Add and Subtract
<b>Topics</b>	<b>Skill Quests</b>
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

<b>4.NR.2.2</b>	
Interpret, model, and solve problems involving multiplicative comparison.	
<b>Course Topics</b>	<b>Activities Title</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Interpret multiplication as a comparison	Describe comparisons using multiplication language
Multiplication comparisons as equations	Writing & solving multiplication comparisons
Comparison word problems	Solving comparison word problems

<b>4.NR.2.3</b>	
Solve relevant problems involving multiplication of a number with up to four digits by a 1-digit whole number or involving multiplication of 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.	
<b>Course Topics</b>	<b>Activities Title</b>
4.NR.2 - Multiplication & Division	Multiply Multiples of 10
	Multiplying Whole Numbers by 10, 100, and 1000
	Estimation: Multiply and Divide
	Multiply: 2-Digit by 1-Digit
	Multiply: 1-Digit Number, Regroup
	Mental Methods Multiplication 1
	Mental Methods Multiplication 2
	Mental Methods Multiplication 3
	Double and Halve to Multiply
	Grid Methods 1

	Grid Methods 2
	Dividing Whole Numbers by 10, 100, 1000
Topics	Skill Quests
Multiply multi-digit numbers	Multiply multi-digit numbers, algorithm
	Multiply multi-digit numbers using place value
	Multiply multi-digit numbers, area model

4.NR.2.4	
Solve authentic division problems involving up to 4-digit dividends and 1- digit divisors (including whole number quotients with remainders) using strategies based on place-value understanding, properties of operations, and the relationships between operations.	
Course Topics	Activities Title
4.NR.2 - Multiplication & Division	Division Facts to Twelve
	Remainders by Arrays
	Mental Methods Division 1
	Mental Methods Division 2
	Mental Methods Division 3
Topics	Skill Quests
Divide multi-digit numbers	Dividing numbers, place value blocks
	Dividing numbers, area model
	Dividing numbers, place value strategy
	Introducing remainders in division

4.NR.2.5	
Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.	
Course Topics	Activities Title
4.NR.2 - Addition & Subtraction	Partition Puzzles 1
	Partition Puzzles 2
4.NR.2 - Multiplication & Division	Multiply and Divide Problems 1
	Bar model $\times \div$
	Rounding Numbers for Division/Compatible Numbers
Topics	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

## Patterning & Algebraic Reasoning

**4.PAR.3** Generate and analyze patterns, including those involving shapes, input/output diagrams, factors, multiples, prime numbers, and composite numbers.

4.PAR.3.1	
Generate both number and shape patterns that follow a provided rule.	
Course Topics	Activities Title
4.PAR.3 - Algebra	Count Forward Patterns

	Count Backward Patterns
	Count by Twos
	Count by Fives
	Skip Counting
	Counting on a 100 grid
<b>Topics</b>	<b>Skill Quests</b>
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

<b>4.PAR.3.2</b>	
Use input-output rules, tables, and charts to represent and describe patterns, find relationships, and solve problems.	
Course Topics	Activities Title
4.PAR.3 - Algebra	Pattern Rules and Tables
Topics	Skill Quests
Teacher directed	

<b>4.PAR.3.3</b>	
Find factor pairs in the range 1–100 and find multiples of single-digit numbers up to 100.	
Course Topics	Activities Title
4.PAR.3 - Algebra	Factors
Topics	Skill Quests
Find multiples & factors	Finding multiples: whole numbers up to 100
	Finding factors: whole numbers up to 100

<b>4.PAR.3.4</b>	
Identify composite numbers and prime numbers and explain the relationship with the factor pairs.	
Course Topics	Activities Title
4.PAR.3 - Algebra	Prime or Composite Numbers
Topics	Skill Quests
Prime & composite numbers	Prime & composite numbers

## Numerical Reasoning

**4.NR.4 Solve real-life problems involving addition, subtraction, equivalence, and comparison of fractions with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100 using part-whole strategies and visual models.**

<b>4.NR.4.1</b>	
Using concrete materials, drawings, and number lines, demonstrate and explain the relationship between equivalent fractions, including fractions greater than one, and explain the identity property of multiplication as it relates to equivalent fractions. Generate equivalent fractions using these relationships.	
Course Topics	Activities Title
4.NR.4 - Fractions	Shading Equivalent Fractions

	Selecting Equivalent Fractions
	Equivalent Fractions on a Number Line 2
	Equivalent Fractions on a Number Line 1
	The Equivalent Fraction
	Equivalent Fraction Wall 2
	Identifying Fractions Beyond 1
	Mixed and Improper Fractions on a Number Line
	Mixed to Improper Fractions
	Improper Fraction to Mixed Numeral
<b>Topics</b>	<b>Skill Quests</b>
Fraction equivalence	Equivalent fractions with models
	Equivalent fractions with multiplication

<b>4.NR.4.2</b>	
Compare two fractions with the same numerator or the same denominator by reasoning about their size and recognize that comparisons are valid only when the two fractions refer to the same whole.	
<b>Course Topics</b>	<b>Activities Title</b>
4.NR.4 Fractions	Compare Fractions 1b
	Comparing Fractions 2
	Compare Fractions 2
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>4.NR.4.3</b>	
Compare two fractions with different numerators and/or different denominators by flexibly using a variety of tools and strategies and recognize that comparisons are valid only when the two fractions refer to the same whole.	
<b>Course Topics</b>	<b>Activities Title</b>
4.NR.4 - Fractions	Compare Fractions 1b
	Comparing Fractions 2
	Compare Fractions 2
	Fractions of a Collection
<b>Topics</b>	<b>Skill Quests</b>
Compare fractions	Compare fractions using models
	Compare fractions, different numerator/denominator
	Compare fractions using common denominators

<b>4.NR.4.4</b>	
Represent whole numbers and fractions as the sum of unit fractions.	
<b>Course Topics</b>	<b>Activities Title</b>
4.NR.4 - Fractions	Identifying Fractions Beyond 1
	Mixed and Improper Fractions on a Number Line
	Mixed to Improper Fractions
	Improper Fraction to Mixed Numeral
	What Fraction is Shaded?
	What fraction is Shaded 1
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>4.NR.4.5</b>	
Represent a fraction as a sum of fractions with the same denominator in more than one way, recording with an equation.	
Course Topics	Activities Title
4.NR.4 - Fractions	Add Like Fractions
	Add Subtract Fractions 1
Topics	Skill Quests
Decompose fractions	Decomposing fractions

<b>4.NR.4.6</b>	
Add and subtract fractions and mixed numbers with like denominators using a variety of tools.	
Course Topics	Activities Title
4.NR.4 - Fractions	Subtract Like Fractions
	Add Subtract Fractions 1
	Subtract Like Mixed Numbers
Topics	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
Add & subtract mixed numbers	Adding mixed numbers, same denominator
	Subtracting mixed numbers, same denominator
Word problems: add & subtract fractions	Word problems: adding & subtracting fractions

**4.NR.5 Solve real-life problems involving addition, equivalence, comparison of fractions with denominators of 10 and 100, and comparison of decimal numbers as tenths and hundredths using part-whole strategies and visual models.**

<b>4.NR.5.1</b>	
Demonstrate and explain the concept of equivalent fractions with denominators of 10 and 100, using concrete materials and visual models. Add two fractions with denominators of 10 and 100.	
Course Topics	Activities Title
Teacher directed	
Topics	Skill Quests
Add fractions: denominator of 10 & 100	Adding fractions with denominators of 10 and 100

<b>4.NR.5.2</b>	
Represent, read, and write fractions with denominators of 10 or 100 using decimal notation, and decimal numbers to the hundredths place as fractions, using concrete materials and drawings.	
Course Topics	Activities Title
4.NR.5 - Fractions & Decimals	Convert Decimals to Fractions 2
	Decimals from Words to Digits 1
	Decimals on the Number Line
	Decimal Place Value
Topics	Skill Quests

Fractions as decimals	Introducing decimal notation
	Introducing tenths
	Introducing hundredths

<b>4.NR.5.3</b>	
Compare two decimal numbers to the hundredths place by reasoning about their size. Record the results of comparisons with the symbols $>$ , $=$ , or $<$ , and justify the conclusions.	
Course Topics	Activities Title
4.NR.5 - Fractions & Decimals	Comparing Decimals 1
	Decimal Order 1
Topics	Skill Quests
Compare decimals to hundredths	Compare & order decimals to hundredths

## Measurement & Data Reasoning

**4.MDR.6 Measure time and objects that exist in the world to solve real-life, mathematical problems and analyze graphical displays of data to answer relevant questions.**

<b>4.MDR.6.1</b>	
Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects, including problems involving fractions with like denominators, and also problems that require expressing measurements given in a larger unit in terms of a smaller unit, and expressing a smaller unit in terms of a larger unit based on the idea of equivalence.	
Course Topics	Activities Title
4.MDR.6 - Measure	Time Conversions: Whole Numbers 1
	Time Conversions: Whole Numbers 2
	Time Conversions: Simple Fractions
	What Time Will it Be?
	Ordering Volumes (l)
Topics	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
Word problems: units of measure	Length word problems
	Mass word problems
	Elapsed time word problems
	Volume & capacity word problems

<b>4.MDR.6.2</b>	
Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.	
Course Topics	Activities Title
4.MDR.6 - Measure	Mass Word Problems
	Using Timetables

	Money Problems: Four Operations
	Perimeter: Squares and Rectangles
	Perimeter Detectives 1
<b>Topics</b>	<b>Skill Quests</b>
Fractions on a line plot	Fractions on a line plot

<b>4.MDR.6.3</b>	
Create dot plots to display a distribution of numerical (quantitative) measurement data.	
<b>Course Topics</b>	<b>Activities Title</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

## Geometric & Spatial Reasoning

**4.GSR.7 Investigate the concepts of angles and angle measurement to estimate and measure angles.**

<b>4.GSR.7.1</b>	
Recognize angles as geometric shapes formed when two rays share a common endpoint. Draw right, acute, and obtuse angles based on the relationship of the angle measure to 90 degrees.	
<b>Course Topics</b>	<b>Activities Title</b>
4.GSR.7 - Angles	Equal Angles
	Measuring Angles
<b>Topics</b>	<b>Skill Quests</b>
Measure & estimate angles	Measuring & estimating angles

<b>4.GSR.7.2</b>	
Measure angles in reference to a circle with the center at the common endpoint of two rays. Determine an angle's measure in relation to the 360 degrees in a circle through division or as a missing factor problem.	
<b>Course Topics</b>	<b>Activities Title</b>
4.GSR.7 - Angles	Estimating Angles
	Angles of revolution: Value of x
<b>Topics</b>	<b>Skill Quests</b>
Angle measurements in a circle	Using a circular protractor to measure angles

<b>Course Topics</b>	<b>Activities Title</b>
REVIEW 4.GSR.8 - Shape	Collect the Shapes 1
	Collect the Shapes 2
	Collect the Polygons
	Count Sides and Corners
<b>Topics</b>	<b>Skill Quests</b>

**4.GSR.8 Identify and draw geometric objects, classify polygons based on properties, and solve problems involving area and perimeter of rectangular figures.**

<b>4.GSR.8.1</b>	
Explore, investigate, and draw points, lines, line segments, rays, angles (right, acute, obtuse), perpendicular lines, parallel lines, and lines of symmetry. Identify these in two-dimensional figures.	
<b>Course Topics</b>	<b>Activities Title</b>
4.GSR.8 - Shape	What Line am I?
	Symmetry
	Lines of Symmetry
<b>Topics</b>	<b>Skill Quests</b>
Spatial features in 2-D figures	Classifying angles
	Labeling points & lines
	Identifying spatial features in 2-D shapes

<b>4.GSR.8.2</b>	
Classify, compare, and contrast polygons based on lines of symmetry, the presence or absence of parallel or perpendicular line segments, or the presence or absence of angles of a specified size and based on side lengths.	
<b>Course Topics</b>	<b>Activities Title</b>
4.GSR.8 - Shape	Triangles: Acute, Right, Obtuse
	Collect More Shapes
<b>Topics</b>	<b>Skill Quests</b>
Classify 2-D figures	Classifying plane shapes by their spatial features
	Classifying quadrilaterals
	Classifying triangles by their sides & angles
Lines of symmetry	Lines of symmetry

<b>4.GSR.8.3</b>	
Solve problems involving area and perimeter of composite rectangles involving whole numbers with known side lengths.	
<b>Course Topics</b>	<b>Activities Title</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Area & perimeter	Finding the area of a rectangle, formula
	Finding the perimeter of a rectangle, formula



# Grade 5

## Numerical Reasoning

### 5.NR.1 Use place value understanding to solve real-life, mathematical problems.

<b>5.NR.1.1</b>	
Explain that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.	
Course Topics	Activities Title
5.NR.1- Place Value	Understanding Place Value 3
	Place Value 1 ( $\times 10$ and $\div 10$ )
	Place Value 2 ( $\times 10$ and $\div 10$ )
	Multiply More Multiples of 10
Topics	Skill Quests
The place value system	Identifying the place value of a digit in a number

<b>5.NR.1.2</b>	
Explain patterns in the placement of digits when multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10, up to $10^3$ .	
Course Topics	Activities Title
5.NR.1- Place Value	Multiply Decimals 10 100 1000
	Divide Decimals by Powers of 10 100 1000
	Multiply Decimals and Powers of 10
Topics	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

### 5.NR.2 Multiply and divide multi-digit whole numbers to solve relevant, mathematical problems

<b>5.NR.2.1</b>	
Fluently multiply multi-digit (up to 3- digit by 2-digit) whole numbers to solve authentic problems.	
Course Topics	Activities Title
5.NR.2 - Multiplication & Division	Grid Methods 1
	Grid Methods 2
	Grid Methods 3
	Long Multiplication
	Multiply: 1-Digit Number
	Estimate Products
	Problems: Multiply and Divide 1
Topics	Skill Quests
Multiply multi-digit numbers, algorithm	Multiplying multi-digit numbers, algorithm

<b>5.NR.2.2</b>	
Fluently divide multi-digit whole numbers (up to 4-digit dividends and 2-digit divisors no greater than 25) to solve practical problems.	
Course Topics	Activities Title
5.NR.2 - Multiplication & Division	Divide: 1-Digit Divisor 1
	Divide: 1-Digit Divisor 2
	Long Division by Whole Numbers
	Problems: Multiply and Divide 1
	Estimate Quotients
Topics	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

**5.NR.3 Describe fractions and perform operations with fractions to solve relevant, mathematical problems using part-whole strategies and visual models**

<b>5.NR.3.1</b>	
Explain the meaning of a fraction as division of the numerator by the denominator ( $\frac{a}{b} = a \div b$ ). Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.	
Course Topics	Activities Title
5.NR.3 - Fractions	Divide Fractions Visual Model
	Divide by a Unit Fraction
Topics	Skill Quests
Fractions as division	Interpreting fractions as division

<b>5.NR.3.2</b>	
Compare and order up to three fractions with different numerators and/or different denominators by flexibly using a variety of tools and strategies.	
Course Topics	Activities Title
5.NR.3 - Fractions	Ordering Fractions 1
Topics	Skill Quests
Teacher directed	

<b>5.NR.3.3</b>	
Model and solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators.	
Course Topics	Activities Title
5.NR.3 - Fractions	One Take Fraction
	Fraction Word Problems
	More Fraction Problems
Topics	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
Add/subtract fraction word problems	Solving word problems: fractions & mixed numbers
	Solving fraction word problems

5.NR.3.4	
Model and solve problems involving multiplication of a fraction and a whole number.	
Course Topics	Activities Title
5.NR.3 - Fractions	Model Fractions to Multiply
	Multiply Fraction by Whole Number
	Unit Fractions
Topics	Skill Quests
Multiply fractions	Multiplying a fraction by a whole number
Area of a rectangle, fractional sides	Find the area of a rectangle with fractional sides
Multiply fractions word problems	Word problems: multiply fractions & mixed numbers

5.NR.3.5	
Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number, and why multiplying a whole number by a fraction less than one results in a product less than the whole number and multiplying a whole number by a fraction equal to one results in a product equal to the whole number.	
Course Topics	Activities Title
Teacher directed	
Topics	Skill Quests
Effects of multiplying fractions	Interpreting multiplying fractions as scaling

5.NR.3.6	
Model and solve problems involving division of a unit fraction by a whole number and a whole number by a unit fraction.	
Course Topics	Activities Title
5.NR.3 - Fractions	Fraction Length Models 1
	Fraction Length Models 2
	Divide Fractions Visual Model
	Divide by a Unit Fraction
Topics	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.NR.4 Read, write, and compare decimal numbers to the thousandths place, and round and perform operations with decimal numbers to the hundredths place to solve relevant, mathematical problems.**

<b>5.NR.4.1</b>	
Read and write decimal numbers to the thousandths place using base-ten numerals written in standard form and expanded form.	
<b>Course Topics</b>	<b>Activities Title</b>
5.NR.4 - Decimals	Decimals from Words to Digits 2
<b>Topics</b>	<b>Skill Quests</b>
Read & write decimals to thousandths	Reading & writing decimals to thousandths

<b>5.NR.4.2</b>	
Represent, compare, and order decimal numbers to the thousandths place based on the meanings of the digits in each place, using $>$ , $=$ , and $<$ symbols to record the results of comparisons.	
<b>Course Topics</b>	<b>Activities Title</b>
5.NR.4 - Decimals	Comparing Decimals 2
<b>Topics</b>	<b>Skill Quests</b>
Compare decimals to thousandths	Comparing & ordering decimals to thousandths

<b>5.NR.4.3</b>	
Use place value understanding to round decimal numbers to the hundredths place.	
<b>Course Topics</b>	<b>Activities Title</b>
5.NR.4 - Decimals	Rounding Decimals 1
<b>Topics</b>	<b>Skill Quests</b>
Round decimals	Rounding decimals

<b>5.NR.4.4</b>	
Solve problems involving addition and subtraction of decimal numbers to the hundredths place using a variety of strategies.	
<b>Course Topics</b>	<b>Activities Title</b>
5.NR.4 - Decimals	Decimal Complements
	Add Decimals 1
	Add Decimals 2
	Estimate Decimal Differences 2
	Estimate Decimal Sums 1
	Money - totaling (USD)
	Making Change (USD)
<b>Topics</b>	<b>Skill Quests</b>
Operations with decimals	Adding decimals to hundredths, algorithm
	Subtracting decimals using mental strategies
	Subtracting decimals to hundredths, algorithm

**5.NR.5 Write, interpret, and evaluate numerical expressions within authentic problems.**

<b>5.NR.5.1</b> Write, interpret, and evaluate simple numerical expressions involving whole numbers with or without grouping symbols to represent actual situations.	
<b>Course Topics</b>	<b>Activities Title</b>
5.NR.5 - Algebra	Find the Missing Number 2
	Order of Operations 1 (PEDMAS)
	Order of Operations 2 (PEDMAS)
	Simple Substitution 1
	Simple Substitution 2
	Simple Substitution 3
<b>Topics</b>	<b>Skill Quests</b>
Grouping symbols	Order of operations with grouping symbols
Write & interpret expressions	Writing & interpreting expressions without solving

**Patterning & Algebraic Reasoning****5.PAR.6 Solve relevant problems by creating and analyzing numerical patterns using the given rule(s).**

<b>5.PAR.6.1</b> Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms by completing a table.	
<b>Course Topics</b>	<b>Activities Title</b>
5.PAR.6 - Patterns	Pick the Next Number
	Table of Values
<b>Topics</b>	<b>Skill Quests</b>
Numerical patterns	Comparing numerical patterns
	Interpreting & creating a number pattern table

<b>5.PAR.6.2</b> Represent problems by plotting ordered pairs and explain coordinate values of points in the first quadrant of the coordinate plane.	
<b>Course Topics</b>	<b>Activities Title</b>
5.PAR.6 - Patterns	Coordinate Graphs: 1st Quadrant
<b>Topics</b>	<b>Skill Quests</b>
Graph ordered pairs	Graphing ordered pairs from numerical patterns

## Measurement & Data Reasoning

**5.MDR.7 Solve problems involving customary measurements, metric measurements, and time and analyze graphical displays of data to answer relevant questions.**

<b>5.MDR.7.1</b>	
Explore realistic problems involving different units of measurement, including distance, mass, weight, volume, and time.	
<b>Course Topics</b>	<b>Activities Title</b>
5.MDR.7 - Measurement	Measuring Length
	Inches, Feet, Yards
	Ounces and Pounds
	Cups, Pints, Quarts, Gallons
	Liter Conversions
	Centimeters and Millimeters
	Centimeters and Meters
	Meters and Kilometers
	Customary Units of Weight 1
	Customary Units of Weight 2
	Customary Units of Capacity
	Customary Units of Length
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>5.MDR.7.2</b>	
Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.	
<b>Course Topics</b>	<b>Activities Title</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Fraction problems: line plots	Represent & interpret measurements: line plots

<b>5.MDR.7.3</b>	
Convert among units within the metric system and then apply these conversions to solve multistep, practical problems.	
<b>Course Topics</b>	<b>Activities Title</b>
5.MDR.7 - Measurement	Operations with Length
	Capacity Addition
	Mass Addition
<b>Topics</b>	<b>Skill Quests</b>
Convert metric measurement units	Converting between standard metric units of length
	Converting between standard metric units of mass
	Converting metric units of volume & capacity
Convert customary measurement units	Converting between customary units of length
	Converting customary units of volume & capacity
	Converting between customary units of mass
	Word problems: measurement conversions

<b>5.MDR.7.4</b> Convert among units within relative sizes of measurement units within the customary measurement system.	
Course Topics	Activities Title
5.MDR.7 - Measurement	Inches, Feet, Yards
	Ounces and Pounds
	Cups, Pints, Quarts, Gallons
Topics	Skill Quests
Teacher directed	

## Geometric & Spatial Reasoning

**5.GSR.8 Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms.**

<b>5.GSR.8.1</b> Classify, compare, and contrast polygons based on properties.	
Course Topics	Activities Title
5.GSR.8 - Shape	Properties of Quadrilaterals
	Collect More Shapes
Topics	Skill Quests
Classify 2-D figures, properties	Classifying 2-D figures in a hierarchy
	Classifying quadrilaterals

<b>5.GSR.8.2</b> Determine, through exploration and investigation, that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	
Course Topics	Activities Title
5.GSR.8 - Shape	Properties of Quadrilaterals
	Collect More Shapes
Topics	Skill Quests
Attributes of 2-D figures	Sorting plane shapes

<b>5.GSR.8.3</b> Investigate volume of right rectangular prisms by packing them with unit cubes without gaps or overlaps. Then, determine the total volume to solve problems.	
Course Topics	Activities Title
5.GSR.8 - Shape	How many Blocks?
	Volume of Solids and Prisms - 1 cm <sup>3</sup> blocks
Topics	Skill Quests
Measure volume with unit cubes	Measuring volume: unit cubes & cubic centimeters

<b>5.GSR.8.4</b> Discover and explain how the volume of a right rectangular prism can be found by multiplying the area of the base times the height to solve authentic, mathematical problems.	
<b>Course Topics</b>	<b>Activities Title</b>
Teacher directed	
<b>Topics</b>	<b>Skill Quests</b>
Volume: rectangular prisms	Volume: additive & multiplicative strategies
Volume formulas: rectangular prism	Applying volume formulas for rectangular prisms



# Grade 6

## Numerical Reasoning

### 6.NR.1 Solve relevant, mathematical problems involving operations with whole numbers, fractions, and decimal numbers

6.NR.1.1	
Fluently add and subtract any combination of fractions to solve problems.	
Course Topics	Activities Title
6.NR.1 - Fractions & Decimals	Add Unlike Fractions
	Subtract Unlike Fractions
	Fraction Fruit Sets 1
	Fraction Fruit Sets 2
Topics	Skill Quests
Teacher directed	

6.NR.1.2	
Multiply and divide any combination of whole numbers, fractions, and mixed numbers using a student-selected strategy. Interpret products and quotients of fractions and solve word problems.	
Course Topics	Activities Title
6.NR.1 - Fractions & Decimals	Multiply Fraction by Fraction
Topics	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
Divide multi-digit numbers, algorithm	Divide 4-digit by 2-digit numbers, no remainder
	Divide 4-digit by 2-digit numbers, with remainders
	Divide 4-digit by 2-digit numbers

6.NR.1.3	
Perform operations with multi-digit decimal numbers fluently using models and student-selected strategies.	
Course Topics	Activities Title
6.NR.1 - Fractions & Decimals	Add Decimals 1
	Add Decimals 2
	Subtract Decimals 2
	Adding and Subtracting Decimals
	Adding Decimals
	Multiply Decimal by Whole Number
	Multiply Decimals: Area Model
	Multiply Decimals 1
	Decimal by Decimal 1
	Divide Decimals
	Divide Decimal by Whole Number
	Divide Decimal by Decimal
Topics	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

**6.NR.2 Apply operations with whole numbers, fractions and decimals within relevant applications.**

<b>6.NR.2.1</b>	
Describe and interpret the center of the distribution by the equal share value (mean).	
Course Topics	Activities Title
Teacher directed	
Topics	Skill Quests
Teacher directed	

<b>6.NR.2.2</b>	
Summarize categorical and quantitative (numerical) data sets in relation to the context: display the distributions of quantitative (numerical) data in plots on a number line, including dot plots, histograms, and box plots and display the distribution of categorical data using bar graphs.	
Course Topics	Activities Title
6.NR.2 - Data	Histograms
	Line Graphs: Reading
	Understanding Box Plots
Topics	Skill Quests
Data displays	Constructing data displays
	Reading & interpreting data in a dot plot
	Reading & interpreting data in a histogram
	Reading & interpreting box plots
Summarize numerical data	Summarizing numerical data
Report observations	Reporting observations in a data display
Attributes of data	Describing attributes of data in data displays

<b>6.NR.2.3</b>	
Interpret numerical data to answer a statistical investigative question created. Describe the distribution of a quantitative (numerical) variable collected, including its center, variability, and overall shape.	
Course Topics	Activities Title
6.NR.2 - Data	Mode
	Mode from Frequency Table
	Calculating Interquartile Range
	Data Terms
Topics	Skill Quests
Statistical questions	Evaluating statistical questions
Shape of data distribution	Introducing the shape of data distribution

**6.NR.2.4**

Design simple experiments and collect data. Use data gathered from realistic scenarios and simulations to determine quantitative measures of center (median and/or mean) and variability (interquartile range and range). Use these quantities to draw conclusions about the data, compare different numerical data sets, and make predictions.

Course Topics	Activities Title
6.NR.2 - Data	The Mean
	Mean from Frequency Table
	The Median
	Median from Frequency Table
	Grouping data and modal class
Topics	Skill Quests
Measures of center & variation	Measures of center & variation
	Introducing the upper & lower quartiles
	Introducing interquartile range
	Understanding the median
	Understanding the mean
Calculate measures of center & variation	Calculating the mean absolute deviation
	Calculating the median
	Calculating the mean
	Identifying clusters, gaps & outliers
	Identifying skewed & symmetrical sets of data

**6.NR.2.5**

Relate the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Course Topics	Activities Title
6.NR.2 - Data	Line Plots
	Dot Plots
	Data Terms
Topics	Skill Quests
Relating measures of center & variation	Choosing appropriate measures of center/variation
	Comparing measures of center & variation

**6.NR.2.6**

Describe the impact that inserting or deleting a data point has on the mean and the median of a data set. Create data displays using a dot plot or box plot to examine this impact.

Course Topics	Activities Title
6.NR.2 – Data	Data Terms
Topics	Skill Quests
Teacher directed	

**6.NR.3 Solve a variety of problems involving whole numbers and their opposites; model rational numbers on a number line to describe problems presented in relevant, mathematical situations.**

<b>6.NR.3.1</b>	
Identify and compare integers and explain the meaning of zero based on multiple authentic situations.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.3 - Integers	Number Plane
	Coordinate Graphs
	What's the Temperature (Celsius)?
<b>Topics</b>	<b>Skill Quests</b>
Positive & negative numbers	Investigating & interpreting integers

<b>6.NR.3.2</b>	
Order and plot integers on a number line and use distance from zero to discover the connection between integers and their opposites.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.3 - Integers	Integers on a Number Line
	Ordering Integers (Number Line)
	Comparing Integers
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>6.NR.3.3</b>	
Recognize and explain that opposite signs of integers indicate locations on opposite sides of zero on the number line; recognize and explain that the opposite of the opposite of a number is the number itself.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.3 - Integers	Integers on a Number Line
<b>Topics</b>	<b>Skill Quests</b>
Opposites on the number line	Opposites on the number line

<b>6.NR.3.4</b>	
Write, interpret, and explain statements of order for rational numbers in authentic, mathematical situations. Compare rational numbers, including integers, using equality and inequality symbols.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.3 - Integers	Inequalities on a Number Line: Basics
<b>Topics</b>	<b>Skill Quests</b>
Compare rational numbers	Comparing integers
	Comparing rational numbers
Order rational numbers	Exploring the everyday language of integers
	Statements of order: rational numbers

<b>6.NR.3.5</b>	
Explain the absolute value of a rational number as its distance from zero on the number line; interpret absolute value as distance for a positive or negative quantity in a relevant situation.	
Course Topics	Activities Title
6.NR.3 - Integers	Absolute Value
Topics	Skill Quests
Introduction to absolute value	Introducing absolute value

<b>6.NR.3.6</b>	
Distinguish comparisons of absolute value from statements about order.	
Course Topics	Activities Title
Teacher directed	
Topics	Skill Quests
Absolute value vs order	Interpreting meanings of integers in context

**6.NR.4 Solve a variety of contextual problems involving ratios, unit rates, equivalent ratios, percentages, and conversions within measurement systems using proportional reasoning.**

<b>6.NR.4.1</b>	
Explain the concept of a ratio, represent ratios, and use ratio language to describe a relationship between two quantities.	
Course Topics	Activities Title
6.NR.4 - Rates Ratios & Proportions	Word Problems: Ratio
	Rate Word Problems
Topics	Skill Quests
Introduction to ratios	Defining, understanding & writing ratios

<b>6.NR.4.2</b>	
Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.	
Course Topics	Activities Title
6.NR.4 - Rates Ratios & Proportions	$y=ax$
	Conversion Graphs
Topics	Skill Quests
Ratio tables	Creating tables of equivalent ratios

<b>6.NR.4.3</b>	
Solve problems involving proportions using a variety of student-selected strategies.	
Course Topics	Activities Title
6.NR.4 - Rates Ratios & Proportions	Solve Proportions
	Equivalent Ratios
	Ratio and Proportion
	Simplify Ratios: 2 Whole numbers
	$y=ax$
Topics	Skill Quests
Teacher directed	

<b>6.NR.4.4</b> Describe the concept of rates and unit rate in the context of a ratio relationship.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.4 - Rates Ratios & Proportions	Average Speed
	Distance Travelled
<b>Topics</b>	<b>Skill Quests</b>
Introduction to unit rate	Understanding unit rates & making comparisons

<b>6.NR.4.5</b> Solve unit rate problems including those involving unit pricing and constant speed.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.4 - Rates Ratios & Proportions	Best Buy
<b>Topics</b>	<b>Skill Quests</b>
Unit rate	Solving unit rate problems for given time periods
	Solving unit rate problems involving unit pricing

<b>6.NR.4.6</b> Calculate a percent of a quantity as a rate per 100 and solve everyday problems given a percent.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.4 - Rates Ratios & Proportions	Modelling Percentages
	Percent of a Number (Mental)
	Percents and Decimals
	Fractions to Percentages (Non-Calculator)
	Fractions to Decimals
	Match Decimals and Percentages
	Percent Increase and Decrease
	Solve Percent Equations
	Percentage Change: Increase and Decrease
<b>Topics</b>	<b>Skill Quests</b>
Percent of a quantity	Expressing rates as a percent
	Solving percent problems: finding the whole

<b>6.NR.4.7</b> Use ratios to convert within measurement systems (customary and metric) to solve authentic problems that exist in everyday life.	
<b>Course Topics</b>	<b>Activities Title</b>
6.NR.4 - Rates Ratios & Proportions	Conversion Graphs
<b>Topics</b>	<b>Skill Quests</b>
Convert measurements using ratios	Converting measurement units using ratios

## Geometric & Spatial Reasoning

### 6.GSR.5 Solve relevant problems involving area, surface area, and volume.

6.GSR.5.1	
Explore area as a measurable attribute of triangles, quadrilaterals, and other polygons conceptually by composing or decomposing into rectangles, triangles, and other shapes. Find the area of these geometric figures to solve problems.	
Course Topics	Activities Title
6.GSR.5 - Area & Volume	Area: Right Angled Triangles
	Area of Triangles
	Area of Quadrilaterals
	Area: Compound Figures
	Area: Parallelograms
	Area: Parallelograms (Metric)
	Area: Composite Shapes
Topics	Skill Quests
Area: triangles & quadrilaterals	Finding the area of a right triangle
	Investigating the area of special quadrilaterals
	Real-world area problems: special quadrilaterals

6.GSR.5.2	
Given the net of three-dimensional figures with rectangular and triangular faces, determine the surface area of these figures.	
Course Topics	Activities Title
6.GSR.5 - Area & Volume	Faces, Edges and Vertices of 3D Shapes
	Faces, Edges, and Vertices 1
	Nets
	Surface Area: Cuboids
	Surface Area: Rectangular Prisms
	Surface Area: Rectangular Prisms 1
	Surface Area: Triangular Prisms 1
Topics	Skill Quests
Surface area	Connecting 3-D objects with their nets
	Calculating the surface area of rectangular prisms

6.GSR.5.3	
Calculate the volume of right rectangular prisms with fractional edge lengths by applying the formula, $V = (\text{area of base}) \times (\text{height})$ .	
Course Topics	Activities Title
6.GSR.5 - Area & Volume	Volume of Rectangular Prisms 1
Topics	Skill Quests
Volume: rectangular prisms, formula	Volume: rectangular prisms, fraction edge lengths

## Patterning & Algebraic Reasoning

**6.PAR.6 Identify, write, evaluate, and interpret numerical and algebraic expressions as mathematical models to explain relevant situations.**

<b>6.PAR.6.1</b>	
Write and evaluate numerical expressions involving rational bases and whole-number exponents.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Writing Equations
	Writing Algebraic Expressions
	Equations to Solve Problems
	Missing Values: Decimals
	I am Thinking of a Number!
	Solve Equations: Add, Subtract 1
	Solve Equations: Multiply, Divide 1
	Solving Simple Equations
	Exponent Notation and Algebra
Topics	Skill Quests
Numerical expressions with exponents	Writing numerical expressions with exponents
	Evaluating numerical expressions with exponents

<b>6.PAR.6.2</b>	
Determine greatest common factors and least common multiples using a variety of strategies to make sense of applicable problems.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Factors
	Find the Factor
	Greatest Common Factor
	Multiples of
	Least Common Multiple
	Using the Distributive Property
	Factoring Expressions
Topics	Skill Quests
Find the greatest common factor	Finding the greatest common factor
Find the least common multiple	Finding the least common multiple
Solve word problems: factors & multiples	Solving word problems: factors & multiples

<b>6.PAR.6.3</b>	
Write and read expressions that represent operations with numbers and variables in realistic situations.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Writing Equations
	Writing Algebraic Expressions
	Equations to Solve Problems
	Solve Equations: Multiply, Divide 1
Topics	Skill Quests
Write expressions: numbers & variables	Writing expressions with numbers & variables



<b>6.PAR.6.4</b>	
Evaluate expressions when given values for the variables, including expressions that arise in everyday situations.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Order of Operations 1 (PEDMAS)
Topics	Skill Quests
Parts of an expression	Identifying parts of an expression
Evaluate algebraic expressions	Evaluating algebraic expressions
	Evaluating expressions using order of operations

<b>6.PAR.6.5</b>	
Apply the properties of operations to identify and generate equivalent expressions.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Solve Equations: Multiply, Divide 1
Topics	Skill Quests
Properties of operations: expressions	Properties of operations: equivalent expressions

**6.PAR.7 Write and solve one-step equations and inequalities as mathematical models to explain authentic, realistic situations.**

<b>6.PAR.7.1</b>	
Solve one-step equations and inequalities involving variables when values for the variables are given. Determine whether an equation and inequality involving a variable is true or false for a given value of the variable.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Fit the Conditions 1
Topics	Skill Quests
Equivalent expressions	Identifying equivalent expressions
Test solutions	Testing solutions: equations
	Testing solutions: inequalities

<b>6.PAR.7.2</b>	
Write one-step equations and inequalities to represent and solve problems; explain that a variable can represent an unknown number or any number in a specified set.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Exponent Notation and Algebra
Topics	Skill Quests
Write algebraic expressions	Writing algebraic expressions

<b>6.PAR.7.3</b>	
Solve problems by writing and solving equations of the form $x + p = q$ , $px = q$ and $x/p = q$ for cases in which $p$ , $q$ and $x$ are all nonnegative rational numbers.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Factoring Expressions
	Checking Solutions
Topics	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

<b>6.PAR.7.4</b>	
Recognize and generate inequalities of the form $x > c$ , $x \geq c$ , $x \leq c$ , or $x < c$ to explain situations that have infinitely many solutions; represent solutions of such inequalities on a number line.	
Course Topics	Activities Title
6.PAR.6 /7 - Equalities & Inequalities	Inequalities on a Number Line: Mixed Basics
	Graphing Inequalities on a Number Line
Topics	Skill Quests
Write & represent inequalities	Writing inequalities
	Represent algebraic inequalities on a number line

Course Topics	Activities Title
REVIEW 6.PAR.8 - Plotting on the cartesian plane	Coordinate Graphs: 1st Quadrant
	Scale

**6.PAR.8 Graph rational numbers as points on the coordinate plane to represent and solve contextual, mathematical problems; draw polygons using the coordinates for their vertices and find the length of a side of a polygon.**

<b>6.PAR.8.1</b>	
Locate and position rational numbers on a horizontal or vertical number line; find and position pairs of integers and other rational numbers on a coordinate plane.	
Course Topics	Activities Title
6.PAR.8 - Plotting on the cartesian plane	Graphing from a Table of Values
	Graphing from a Table of Values 2
Topics	Skill Quests
Graph rational numbers	Placing rational numbers on the number line
	Graphing rational numbers on the coordinate plane

<b>6.PAR.8.2</b>	
Show and explain that signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane and determine how two ordered pairs may differ based only on the signs.	
<b>Course Topics</b>	<b>Activities Title</b>
6.PAR.8 - Plotting on the cartesian plane	Reading Values from a Line
<b>Topics</b>	<b>Skill Quests</b>
Teacher directed	

<b>6.PAR.8.3</b>	
Solve 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 x-coordinate or the same y-coordinate.	
<b>Course Topics</b>	<b>Activities Title</b>
6.PAR.8 - Plotting on the cartesian plane	Horizontal and Vertical Change
<b>Topics</b>	<b>Skill Quests</b>
Graph in the 4 quadrants	Graphing coordinates in the 4 quadrants
	Graphing coordinates across the x-axis & y-axis
Solve problems by graphing: 4 quadrants	Solving problems by graphing in the 4 quadrants
	Find the distance between 2 points, absolute value

<b>6.PAR.8.4</b>	
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 x-coordinate or the same y-coordinate.	
<b>Course Topics</b>	<b>Activities Title</b>
6.PAR.8 - Plotting on the cartesian plane	Horizontal and Vertical Change
<b>Topics</b>	<b>Skill Quests</b>
Polygons in the coordinate plane	Drawing polygons in the coordinate plane



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