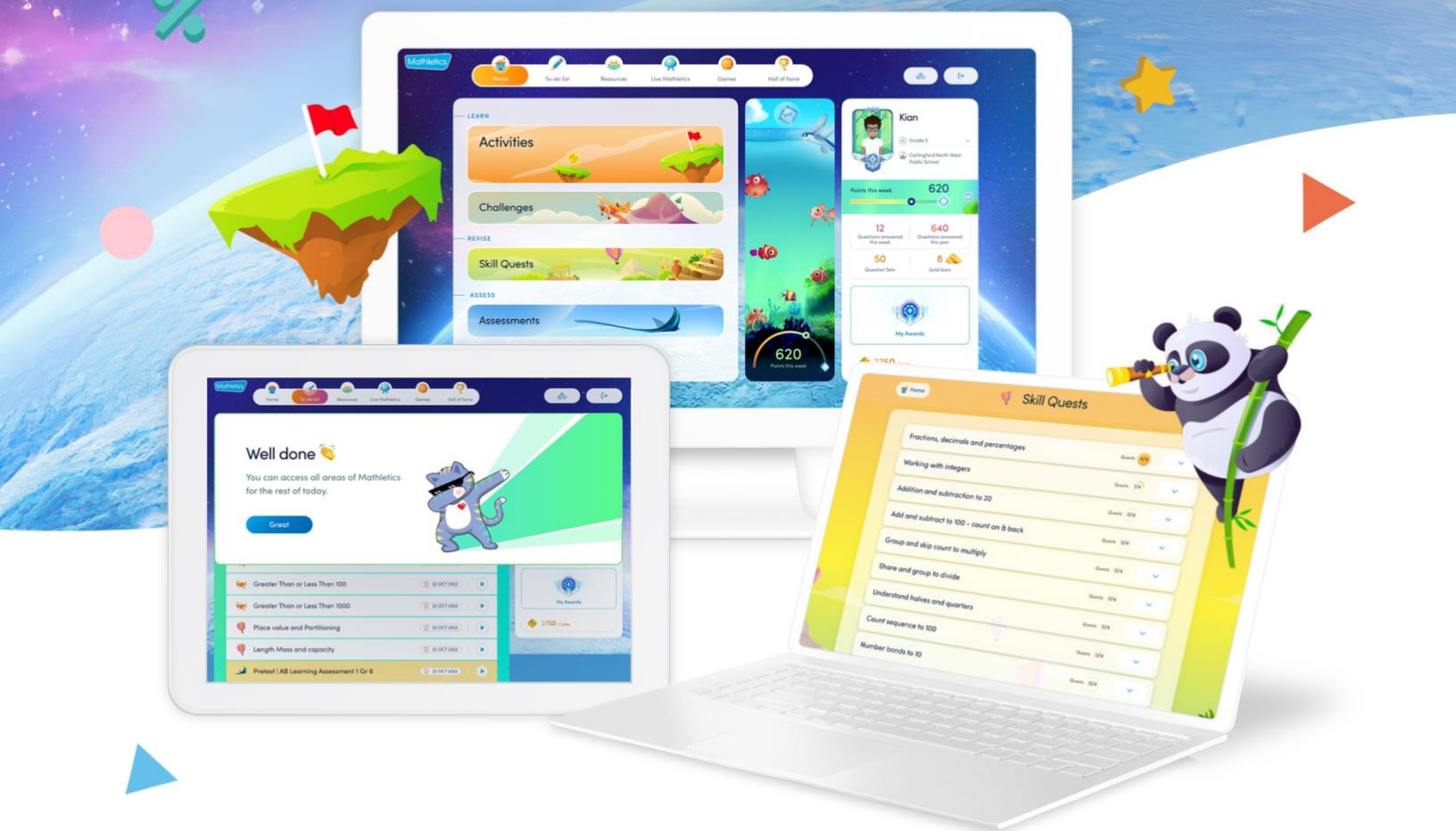
Mathletics

Oklahoma Academic Standards

Activities (Courses) and Skill Quests



Grades 3-6

August, 2025

Mathletics

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Activities (Courses) & Skill Quests

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Grade 3

3.N Numbers and Operations (N)

3.N.1 Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.

3.N.1.1 Read, write, discuss, and represent whole numbers up to 100,000. Representations should include but are not limited to numerals, words, pictures, number lines, and manipulatives (e.g., 350 = 3 hundreds, 5 tens = 35 tens = 3 hundreds, 4 tens, 10 ones).	
Course Topics	**Activities**
N—Place value	Numbers in words
	Place value 3
Topics	**Skill Quests**
Read and write numbers to 100,000	Reading and writing numbers up to 100,000

3.N.1.2 Use place value to describe whole numbers between 1,000 and 100,000 in terms of ten-thousands, thousands, hundreds, tens and ones, including written, standard, and expanded forms.	
Course Topics	**Activities**
N—Place value	Place value to thousands
	Expanding numbers
	Expanded notation
Topics	**Skill Quests**
Represent numbers to 100,000	Representing numbers up to 100,000
Place value up to 100,000	Place value up to 100,000

3.N.1.3 Applying knowledge of place values, use mental strategies (no written computations) to find 100 more or 100 less than a given number, 1,000 more or 1,000 less than a given number, and 10,000 more or 10,000 less than a given number, up to a five-digit number.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
10/100/1,000 more or less	10/100/1,000 more or less

3.N.1.4 Use place value to compare and order whole numbers, up to 100,000, using comparative language, numbers, and symbols.	
Course Topics	**Activities**
N—Place value	Greater than or less than?
Topics	**Skill Quests**
Compare and order numbers up to 100,000	Comparing numbers up to 100,000
	Ordering numbers up to 100,000

3.N.1.5 Use place value understanding to round numbers to the nearest thousand, ten-thousand and hundred-thousand.	
Course Topics	**Activities**
N—Place value	Rounding numbers
Topics	**Skill Quests**
Round numbers	Rounding numbers

3.N.2 Solve real-world and mathematical problems using addition, subtraction, multiplication, and division.

3.N.2.1 Represent multiplication facts by modeling a variety of approaches (e.g., manipulatives, repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line, skip counting).	
Course Topics	**Activities**
N—Multiplication	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
	Model multiplication to 5 x 5
	Frog jump multiplication
	Multiplication arrays
	Arrays 1
Topics	**Skill Quests**
Model multiplication	Modeling multiplication

3.N.2.2 Demonstrate fluency with multiplication facts using factors up to 10.	
Course Topics	**Activities**
N—Multiplication	Times tables
	Multiplication turn-abouts
Topics	**Skill Quests**
Multiplication facts to 10 x10	Multiplication facts up to 5
	Multiplying by 6 up to 60
	Multiplying by 7 up to 70
	Multiplying & dividing by 8 up to 80
	Multiplying & dividing by 9 up to 90
	Multiplication facts up to 10 x 10

3.N.2.3 Use strategies and algorithms based on knowledge of place value and equality to fluently add and subtract up to five-digit numbers (answer not to exceed 100,000).

Course Topics	Activities
N—Addition & subtraction	Strategies for column addition
	Add 3-digit numbers
	Add multi-digit numbers
	3-digit differences
	3-digit differences with zeroes
	3-digit differences: 1 regrouping
	3-digit differences: 2 regroupings
Topics	**Skill Quests**
Add & subtract mental strategies	Add & subtract using a bar model
	Add & subtract using place value partitioning
	Add & subtract using jump strategies
	Add & subtract using split strategies
	Add & subtract using round & compensate strategies
Add & subtract formal algorithms	Add using formal algorithms
	Subtract using formal algorithms

3.N.2.4 Recognize when to round numbers and apply understanding to estimate sums and differences to the nearest ten-thousand, thousand, hundred, and ten.	
Course Topics	**Activities**
N—Place value	Estimate sums
Topics	**Skill Quests**
Estimation & rounding	Rounding to estimate addition & subtraction

3.N.2.5 Use addition and subtraction to solve problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction and the context of the problem to assess the reasonableness of results.	
Course Topics	**Activities**
N—Addition & subtraction	Problems: add and subtract
Topics	**Skill Quests**
Addition & subtraction word problems	Addition & subtraction word problems

3.N.2.6 Represent division facts and divisibility by modeling a variety of approaches (e.g., repeated subtraction, equal sharing, forming equal groups) to show the relationship between multiplication and division.	
Course Topics	**Activities**
N—Division	Divide into equal groups
	Dividing threes
	Dividing fours
	Dividing fives
	Dividing sixes
	Dividing sevens
	Dividing eights
	Dividing nines

	Dividing tens
	Division facts
Topics	**Skill Quests**
Representing division	Dividing using repeated subtraction
	Exploring division facts using models
	Dividing by 2, 5, 10

3.N.2.7 Apply the relationship between multiplication and division to represent and solve problems.	
Course Topics	**Activities**
N—Division	Problems: times and divide
	Related facts 2
	Fact families: multiply and divide
Topics	**Skill Quests**
Multiplication & division problems	Relating multiplication & division
	Interpreting & solving mult/div word problems
	Solve multiplication & division practical problems

3.N.2.8 Use various strategies (e.g., base ten blocks, area models, arrays, repeated addition, algorithms) based on knowledge of place value, equality, and properties of addition and multiplication to multiply a two-digit factor by a one-digit factor.	
Course Topics	**Activities**
N—Multiplication	Multiply: 1-digit number, regroup
	Multiply: 2-Digit by 1-Digit
Topics	**Skill Quests**
Multiplication strategies	Using repeated addition to multiply
	Multiplying using place value
	Multiplying using related facts

3.N.3 Use and justify fractional representations in real-world and mathematical problems.

3.N.3.1 Read and write fractions with words and symbols using appropriate terminology (i.e., numerator and denominator).	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Fraction symbols	Exploring the meaning of fraction symbols

3.N.3.2 Model fractions using length, set, and area for halves, thirds, fourths, sixths, and eighths.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**

Model fractions - denominators 2,3,4,6,8	Modeling fractions - denominators 2, 3, 4, 6, 8
Fractions on a number line	Locating fractions on a number line

3.N.3.3 Apply understanding of unit fractions and use this understanding to compose and decompose fractions related to the same whole.	
Course Topics	**Activities**
N—Fractions & money	Fractions
	Model fractions
	What fraction is shaded?
Topics	**Skill Quests**
Composition with unit fractions	Adding unit fractions up to 1 whole

3.N.3.4 Use models and number lines to order and compare fractions that are related to the same whole.	
Course Topics	**Activities**
N—Fractions & money	Halves and fourths
	Comparing fractions 1
Topics	**Skill Quests**
Order & compare fractions	Ordering & comparing fractions

3.N.4 Determine the value of a set of coins and determine the value of a set of bills in monetary transactions.

3.N.4.1 Use addition and subtraction to determine the value of a collection of coins up to one dollar using the cent symbol and in monetary transactions.	
Course Topics	**Activities**
N—Fractions & money	Who's got the money?
	Count money
Topics	**Skill Quests**
Value of coins to one dollar	Determining the value of coins up to one dollar

3.N.4.2 Add and subtract a collection of bills up to twenty dollars using whole dollars in monetary transactions.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

3.A Algebraic Reasoning and Algebra (A)

3.A.1 Describe and create representations of numerical and geometric patterns.

3.A.1.1

Create, describe, and extend patterns involving addition, subtraction, or multiplication to solve problems in a variety of contexts.	
Course Topics	**Activities**
A—Patterns & properties	Increasing patterns
	Decreasing patterns
Topics	**Skill Quests**
Create, describe & extend patterns	Creating & describing patterns (1, 2, 5, 10, 25)
	Creating & describing patterns (3, 4, 6, 7, 8, 9)
	Exploring number patterns in tables & charts

3.A.1.2 Describe the rule (limited to a single operation) for a pattern from an input/output table or function machine involving addition, subtraction, or multiplication.	
Course Topics	**Activities**
A—Patterns & properties	Find the function rule
Topics	**Skill Quests**
Describe the rule for a pattern	Describing the rule for a pattern

3.A.1.3 Explore and develop visual representations of increasing and decreasing geometric patterns and construct the next steps.	
Course Topics	**Activities**
A—Patterns & properties	Simple patterns
	Pattern error
Topics	**Skill Quests**
Explore geometric patterns	Exploring geometric patterns

3.A.2 Use number sentences involving multiplication and unknowns to represent and solve real-world and mathematical problems.

3.A.2.1 Use number sense with the properties of addition, subtraction, and multiplication, to find unknowns (represented by symbols) in one-step equations. Generate real-world situations to represent number sentences.	
Course Topics	**Activities**
A—Patterns & properties	Word problems with letters
Topics	**Skill Quests**
Find unknowns in one-step equations	Finding unknown numbers in addition & subtraction
	Finding unknown numbers in multiplication
Represent number sentences	Representing number sentences

3.A.2.2 Identify, represent, and apply the number properties (commutative, identity, and associative properties of addition and multiplication) using models and manipulatives to solve problems.	
Course Topics	**Activities**
A—Patterns & properties	Commutative property of addition

	Multiplication properties
Topics	**Skill Quests**
Use number properties to solve problems	Using number properties to solve problems

3.G Geometry and Measurement (GM)

3.GM.1 Analyze and use geometric attributes to describe and create polygons and three-dimensional figures in various contexts.

3.GM.1.1 Sort three-dimensional shapes based on attributes.	
Course Topics	**Activities**
GM—Shapes & angles	Match the object
	Collect the objects 2
Topics	**Skill Quests**
Explore prisms & pyramids	Exploring prisms & pyramids
Sort 3D shapes based on attributes	Identifying faces, edges & vertices on 3D shapes
	Sorting 3D shapes based on attributes
	Identifying 2D shapes in 3D shapes

3.GM.1.2 Build a three-dimensional figure using unit cubes when shown a picture of a three-dimensional shape.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

3.GM.1.3 Classify angles within a polygon as acute, right, obtuse, and straight.	
Course Topics	**Activities**
GM—Shapes & angles	What type of angle 2?
	Classifying angles
Topics	**Skill Quests**
Classify angles	Classifying angles

3.GM.2 Understand measurable attributes of real-world and mathematical objects using various tools.

3.GM.2.1 Find the perimeter of a polygon, given whole number lengths of the sides, using a variety of models.	
Course Topics	**Activities**
GM—Area & perimeter	Perimeter
	Perimeter: squares and rectangles
	Perimeter detectives 1
	Perimeter of shapes
Topics	**Skill Quests**

Find perimeter of a polygon	Finding the perimeter of a polygon

3.GM.2.2 Analyze why length and width are multiplied to find the area of a rectangle by decomposing the rectangle into one unit by one unit squares and viewing these as rows and columns to determine the area.	
Course Topics	**Activities**
GM—Area & perimeter	Area: squares and rectangles
Topics	**Skill Quests**
Teacher directed	

3.GM.2.3 Count cubes systematically to identify the number of cubes needed to pack the whole or half of a three-dimensional structure.	
Course Topics	**Activities**
GM—Measurement units	How many blocks?
Topics	**Skill Quests**
Identify cubes needed for 3D structure	Identifying cubes needed for 3D structure

3.GM.2.4 Find the area of two-dimensional figures by counting the total number of same-size unit squares that fill the shape without gaps or overlaps.	
Course Topics	**Activities**
GM—Measurement units	Area of shapes
Topics	**Skill Quests**
Find area of 2D figures	Finding area of a rectangle using a square unit
	Introducing formal units for area (metric)
	Introducing formal units for area (customary)
	Estimating & measuring area of rectangles

3.GM.2.5 Choose an appropriate measurement instrument and measure the length of objects to the nearest whole centimeter or whole meter.	
Course Topics	**Activities**
GM—Measurement units	How long is that?
	Measuring length
Topics	**Skill Quests**
Measure length of objects in cm or m	Introducing centimeters
	Introducing meters
	Selecting appropriate units to measure length

3.GM.2.6 Choose an appropriate measurement instrument and measure the length of objects to the nearest whole yard, whole foot, or half inch.	
Course Topics	**Activities**
GM—Measurement units	How long is that? (Customary)

	Measure to the nearest half inch
Topics	**Skill Quests**
Teacher directed	

3.GM.2.7 Use an analog thermometer to determine temperature to the nearest degree in Fahrenheit and Celsius.	
Course Topics	**Activities**
GM—Measurement units	Temperature (Fahrenheit)
Topics	**Skill Quests**
Determine temperature in Celsius	Determining temperature in Celsius

3.GM.3 Solve problems by telling time to the nearest five-minute interval.

3.GM.3.1 Read and write time to the nearest five-minute interval (analog and digital).	
Course Topics	**Activities**
GM—Measurement units	What is the time?
Topics	**Skill Quests**
Time to 5 mins (analog & digital)	Telling time to 5 minutes, analog & digital

3.GM.3.2 Determine the solutions to problems involving addition and subtraction of time in intervals of five minutes, up to one hour, using pictorial models, number line diagrams, or other tools.	
Course Topics	**Activities**
GM—Measurement units	Five minute times
	Time mentals
	Elapsed time
Topics	**Skill Quests**
Teacher directed	

3.D Data and Probability (D)

3.D.1 Collect, organize, and analyze data.

3.D.1.1 Collect and organize a data set with multiple categories using a frequency table, line plot, pictograph, or bar graph with scaled intervals.	
Course Topics	**Activities**
D—Analyze data	Making graphs
	Bar graphs 1
	Bar graphs 2
Topics	**Skill Quests**
Represent data - picture & bar graphs	Representing data - scaled picture graph
	Representing data - scaled bar graph
Represent data - line plots	Representing data - line plots

Represent data - tables	Representing data - frequency table

3.D.1.2 Solve one- and two-step problems using categorical data represented with a frequency table, pictograph, or bar graph with scaled intervals.	
Course Topics	**Activities**
D—Analyze data	Pictographs
	Pictograms
Topics	**Skill Quests**
Solve problems using categorical data	Solving problems using categorical data

Grade 4

4.N Numbers and Operations (N)

4.N.1 Compare and represent whole numbers up to 1,000,000 with an emphasis on place value and equality.

4.N.1.1 Read, write, discuss, and represent whole numbers up to 1,000,000. Representations may include numerals, words, pictures, number lines, and manipulatives.	
Course Topics	**Activities**
N—Place value	Numbers from words to digits
	Place value to millions
Topics	**Skill Quests**
Numbers to 1 000 000	Reading & representing numbers to 6 digits

4.N.1.2 Use place value to describe whole numbers between 1,000 and 1,000,000 in terms of millions, hundred-thousands, ten thousands, thousands, hundreds, tens, and ones with written, standard, and expanded forms.	
Course Topics	**Activities**
N—Place value	Expanded form
	Expanding numbers
Topics	**Skill Quests**
Place value to 1 000 000	Place value to 6 digits

4.N.1.3 Applying knowledge of place value, use mental strategies (no written computations) to multiply or divide a number by 10, 100 and 1,000.	
Course Topics	**Activities**
N—Place value	Multiply multiples of 10
	Place value 1 (× 10 and ÷ 10)
	Place value 2 (× 10 and ÷ 10)
Topics	**Skill Quests**
Multiply & divide by 10, 100, 1000	Multiply whole numbers by 10, 100 & 1000
	Divide whole numbers by 10, 100

4.N.1.4 Use place value to compare and order whole numbers up to 1,000,000, using comparative language, numbers, and symbols.	
Course Topics	**Activities**
N—Place value	Comparing numbers
Topics	**Skill Quests**
Compare & order numbers to 1 000 000	Comparing & ordering numbers to 6 digits

4.N.2 Solve real-world and mathematical problems using multiplication and division.

4.N.2.1 Demonstrate fluency with multiplication and division facts with factors up to 12.	
Course Topics	**Activities**
N—Multiplication & division	Times tables
	Multiplication turn-abouts
	Multiplication facts
Topics	**Skill Quests**
Multiplication & division facts, 0-12	Multiplication facts for 2, 5 & 10
	Multiplication facts for 3, 6 & 9
	Multiplication facts for 4 & 8
	Multiplication facts for 7
	Multiplication facts for 11 & 12
	Division facts for 2, 5 & 10
	Division facts for 3, 6 & 9
	Division facts for 4 & 8
	Division facts for 7
	Division facts for 11 & 12
	Recalling multiplication facts up to 12 x 12

4.N.2.2 Multiply 3-digit by 1-digit and 2-digit by 2-digit whole numbers, using various strategies, including but not limited to standard algorithms.	
Course Topics	**Activities**
	Problems: multiply and divide
	Multiply 2 digits area model
	Double and halve to multiply
	Multiplying by 10, 100, and 1000
	Dividing by 10, 100, and 1000
Topics	**Skill Quests**
Multiply using mental strategies	Multiplying using known facts
	Multiplying using the split method
	Multiplying using an area model
Multiply using vertical algorithms	Multiplying using an expanded algorithm
	Multiplying using a contracted algorithm

4.N.2.3 Estimate products of 3-digit by 1-digit and 2-digit by 2-digit whole number factors using a variety of strategies (e.g., rounding, front end estimation, adjusting, compatible numbers) to assess the reasonableness of results. Explore larger numbers using technology to investigate patterns.	
Course Topics	**Activities**
N—Multiplication & division	Estimate products
Topics	**Skill Quests**
Estimate products	Using estimation/rounding to check answers

4.N.2.4 Apply and analyze models to solve multi-step problems requiring the use of addition, subtraction, and multiplication of multi- digit whole numbers. Use various strategies, including the relationship between operations, the use of appropriate technology, and the context of the problem to assess the reasonableness of results.	
Course Topics	**Activities**
N—Multiplication & division	Order of operations 1
	Order of operations 2
Topics	**Skill Quests**
Solve problems - 4 operations	Solving addition & subtraction word problems
	Solving multiplication & division word problems

4.N.2.5 Use strategies and algorithms (e.g., mental strategies, standard algorithms, partial quotients, repeated subtraction, the commutative, associative, and distributive properties) based on knowledge of place value, equality, and properties of operations to divide a 3-digit dividend by a 1-digit whole number divisor, with and without remainders.	
Course Topics	**Activities**
N—Multiplication & division	Divide: 1-digit divisor 2
Topics	**Skill Quests**
Divide using mental strategies	Dividing using partitioning
	Dividing using repeated halving
	Dividing using split factors
	Dividing using algorithms

4.N.3 Represent and compare fractions and decimals in real-world and mathematical situations; use place value to understand decimal quantities.

4.N.3.1 Represent and rename equivalent fractions using fraction models (e.g., parts of a set, area models, fraction strips, number lines).	
Course Topics	**Activities**
N—Fractions	Fraction wall labelling 1
Topics	**Skill Quests**
Equivalent fractions	Finding equivalent fractions using an area model
	Finding equivalent fractions using a number line

4.N.3.2 Use benchmark fractions (0, 1/4, 1/3, 1/2, 2/3, 3/4, 1) to locate additional fractions with denominators up to twelfths on a number line.	
Course Topics	**Activities**
N—Fractions	Counting with fractions on a number line
	Identifying fractions beyond 1
Topics	**Skill Quests**
Benchmark fractions	Using benchmark fractions

4.N.3.3 Use models to order and compare whole numbers and fractions less than and greater than one, using comparative language and symbols.	
Course Topics	**Activities**
N—Fractions	Comparing fractions 1
	Comparing fractions 2
Topics	**Skill Quests**
Compare & order fractions with models	Comparing & ordering fractions with models
	Comparing fractions, same numerator or denominator

4.N.3.4 Decompose a fraction into a sum of fractions with the same denominator in more than one way, using concrete and pictorial models and recording results with numerical representations (e.g., 3/4 = 1/4 + 1/4 + 1/4 and 3/4 = 2/4 + 1/4).	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Decompose fractions	Decomposing fractions into sums

4.N.3.5 Use models to add and subtract fractions with like denominators.	
Course Topics	**Activities**
N—Fractions	Add subtract fractions 1
Topics	**Skill Quests**
Add & subtract like fractions - models	Adding & subtracting fractions, same denominator

4.N.3.6 Represent tenths and hundredths with concrete and pictorial models, making connections between fractions and decimals.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Decimal tenths	Introducing decimal tenths
	Connecting decimal tenths to common fractions
	Introducing decimal hundredths
	Connecting decimals & fractions

4.N.3.7 Read and write decimals in standard, word, and expanded form up to at least the hundredths place in a variety of contexts, including money.	
Course Topics	**Activities**
N—Fractions	Decimals from words to digits 1
	Decimals from words to digits 2
Topics	**Skill Quests**
Place value up to hundredths	Place value up to hundredths

4.N.3.8 Compare and order decimals and whole numbers using place value and various models including but not limited to grids, number lines, and base 10 blocks.	
Course Topics	**Activities**
N—Fractions	Decimal order
	Decimal order 1
Topics	**Skill Quests**
Compare & order decimals	Comparing & ordering up to hundredths

4.N.3.9 Compare and order benchmark fractions (0, 1/4, 1/3, 1/2, 2/3, 3/4, 1) and decimals (0, 0.25, 0.50, 0.75, 1.00) in a variety of representations.	
Course Topics	**Activities**
N—Fractions	Comparing decimals 2
Topics	**Skill Quests**
Teacher directed	

4.N.4 Determine the value of bills and coins in order to solve monetary transactions.

4.N.4.1 Select the fewest number of coins for a given amount of money up to one dollar.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Represent money amounts	Representing money amounts in coins

4.N.4.2 Given a total cost (dollars and coins up to twenty dollars) and amount paid (dollars and coins up to twenty dollars), find the change required in a variety of ways.	
Course Topics	**Activities**
N—Fractions	Making change
Topics	**Skill Quests**
Calculate change up to $20	Calculating cost & change

4.A Algebraic Reasoning and Algebra (A)

4.A.1 Describe, create, and analyze multiple representations of patterns to solve real-world and mathematical problems.

4.A.1.1 Create an input/output chart or table to represent or extend a numerical pattern.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Represent numerical patterns	Read & represent patterns in tables & charts

4.A.1.2 Describe the single operation rule for a pattern from an input/output table or function machine involving any operation of a whole number.	
Course Topics	**Activities**
A—Patterns & number sentences	Find the function rule
	Table of values
Topics	**Skill Quests**
Pattern rules & function machines	Identifying & using pattern rules

4.A.1.3 Construct models to show growth patterns involving geometric shapes and define the single operation rule of the pattern.	
Course Topics	**Activities**
A—Patterns & number sentences	Simple patterns
	Pattern error
Topics	**Skill Quests**
Modeling shape patterns	Represent shape patterns

4.A.2 Use multiplication and division with variables to create number sentences representing a given mathematical situation.

4.A.2.1 Use the relationships between multiplication and division with the properties of multiplication to solve problems and find values for variables that make number sentences true.	
Course Topics	**Activities**
A—Patterns & number sentences	Word problems with letters
Topics	**Skill Quests**
Missing numbers in mult/div problems	Find missing numbers in mult/div problems

4.A.2.2 Solve for a variable in an equation involving addition, subtraction, multiplication, or division with whole numbers. Analyze models to represent number sentences and vice versa.	
Course Topics	**Activities**
A—Patterns & number sentences	Multiplication problems
Topics	**Skill Quests**
Use models to solve simple equations	Solving simple equations - 4 operations

4.A.2.3 Determine the unknown addend or factor in equivalent and non-equivalent expressions (e.g., 5 + 6 = 4 + [ ], 3 · 8 < 3 · [ ]).	
Course Topics	**Activities**
	Solving simple equations

A—Patterns & number sentences	Solve two-step equations
Topics	**Skill Quests**
Equivalent expressions	Using equivalent relationships

4.G Geometry and Measurement (GM)

4.GM.1 Name, describe, classify, and construct polygons and three-dimensional figures based on their attributes; recognize polygons and three-dimensional figures in real-life and mathematical situations.

4.GM.1.1 Identify points, lines, line segments, rays, angles, endpoints, and parallel and perpendicular lines in various models.	
Course Topics	**Activities**
GM—Polygons, lines & angles	What line am I?
	Labelling angles
Topics	**Skill Quests**
Spatial features in 2-D figures	Classifying angles
	Labeling points & lines
	Identifying spatial features in 2-D shapes

4.GM.1.2 Describe, classify, and construct quadrilaterals, including squares, rectangles, trapezoids, rhombuses, parallelograms, and kites. Recognize quadrilaterals in various models.	
Course Topics	**Activities**
GM—Polygons, lines & angles	Sides, angles and diagonals
	Collect the shapes 2
	Shapes
Topics	**Skill Quests**
Quadrilaterals	Classifying quadrilaterals

4.GM.1.3 Given two three-dimensional shapes, identify each shape. Compare and contrast their similarities and differences based on their attributes.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
3-D shapes	Introducing pyramids
	Comparing, sorting, and naming prisms and pyramids
	Faces, edges, and vertices
	Comparing & sorting 3-D objects

4.GM.2 Recognize and measure attributes in real-world and mathematical situations using various tools.

4.GM.2.1

Measure angles in geometric figures and real-world objects with a protractor or angle ruler.	
Course Topics	**Activities**
GM—Polygons, lines & angles	Right angle relation
Topics	**Skill Quests**
Angle measurements	Measuring angles

4.GM.2.2 Find the area of polygons by determining if they can be decomposed into rectangles.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Area of rectangles, formula	Finding the area of rectangles, formula

4.GM.2.3 Develop the concept that the volume of rectangular prisms with whole-number edge lengths can be found by counting the total number of same-sized unit cubes that fill a shape without gaps or overlaps. Use a variety of tools and create models to determine the volume using appropriate measurements (e.g., cm^3).	
Course Topics	**Activities**
GM—Measurement	How many blocks?
Topics	**Skill Quests**
Volume of rectangular prisms	Finding volume using cube units

4.GM.2.4 Choose an appropriate instrument to measure the length of an object to the nearest whole centimeter or quarter inch.	
Course Topics	**Activities**
GM—Measurement	Measure to the nearest half inch
	How long is that? (customary)
Topics	**Skill Quests**
Measure length	Measuring to the nearest centimeter

4.GM.2.5 Recognize and use the relationship between inches, feet, and yards to measure and compare objects.	
Course Topics	**Activities**
GM—Measurement	Inches, Feet, Yards
Topics	**Skill Quests**
Teacher directed	

4.GM.2.6 Recognize and use the relationship between millimeters, centimeters, and meters to measure and compare objects.	
Course Topics	**Activities**
GM—Measurement	Centimeters and millimeters
Topics	**Skill Quests**

Appropriate units of measurement	Selecting mm, cm, m

4.GM.2.7 Determine and justify the best use of customary and metric measurements in a variety of situations (liquid volumes, mass vs. weight, temperatures above 0 (zero) degrees, and length).	
Course Topics	**Activities**
GM—Measurement	Customary units of capacity
	Customary units of weight 1
	Customary units of weight 2
Topics	**Skill Quests**
Customary & metric units	Solving length problems
	Solving mass problems
	Solving volume problems
	Measuring temperature

4.GM.3 Determine elapsed time and convert between units of time.

4.GM.3.1 Determine elapsed time.	
Course Topics	**Activities**
GM—Time	Elapsed time
Topics	**Skill Quests**
Elapsed time	Determining elapsed time

4.GM.3.2 Convert one measure of time to another including seconds to minutes, minutes to hours, hours to days, and vice versa, using various models.	
Course Topics	**Activities**
GM—Time	Whole number time conversion
	Time conversions with simple fractions
Topics	**Skill Quests**
Convert units of time	Converting units of time

4.D Data and Probability (D)

4.D.1 Summarize, construct, and analyze data.

4.D.1.1 Create and organize data on a frequency table or line plot marked with whole numbers and fractions using appropriate titles, labels, and units.	
Course Topics	**Activities**
D—Analyze data	Line graphs: interpretation
Topics	**Skill Quests**
Frequency tables & line plots	Read & represent data in tables & line plots

4.D.1.2 Organize data sets to create tables, bar graphs, timelines, and Venn diagrams. The data may include benchmark fractions or decimals (1/4, 1/3, 1/2, 2/3, 3/4, 0.25, 0.50, 0.75).	
Course Topics	**Activities**
D—Analyze data	Bar graphs 1
	Reading from a column graph
	Circle graphs
Topics	**Skill Quests**
Organize data	Organizing data

4.D.1.3 Solve one- and two-step problems by analyzing data in whole number, decimal, or fraction form in a frequency table and line plot.	
Course Topics	**Activities**
D—Analyze data	Line plots
Topics	**Skill Quests**
Interpret data	Solve problems using data displays

Grade 5

5.N Numbers and Operations (N)

5.N.1 Read, write, represent, and compare fractions and decimals; recognize and write equivalent fractions; convert between fractions and decimals; use fractions and decimals in real-world and mathematical situations.

5.N.1.1 Represent decimal fractions (e.g., 1/10, 1/100) using a variety of models (e.g., 10 by 10 grids, base-ten blocks, meter stick) and show the rational number relationships among fractions, decimals, and whole numbers.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Represent decimal fractions	Introducing decimal thousandths

5.N.1.2 Read, write, and represent decimals using place value to describe decimal numbers including fractional numbers as small as thousandths and whole numbers up to seven digits.	
Course Topics	**Activities**
N—Decimals	Decimals from words to digits 1
	Decimals from words to digits 2
Topics	**Skill Quests**
Decimal place value	Partitioning decimals of any size

5.N.1.3 Compare and order decimals and fractions, including mixed numbers and fractions less than one, and locate on a number line.	
Course Topics	**Activities**
N—Decimals	Decimal order
	Decimal order 1
	Decimal order 2
	Comparing decimals 2
Topics	**Skill Quests**
Compare & order decimals & fractions	Comparing & ordering fractions
	Comparing & ordering decimals
	Interpreting zeros at end of decimals

5.N.1.4 Recognize and generate equivalent terminating decimals, fractions, mixed numbers, and fractions in various models.	
Course Topics	**Activities**
N—Fractions	Equivalent fraction wall 1
	Equivalent fractions 1
	Ordering fractions 1

	Ordering fractions
Topics	**Skill Quests**
Equivalent fractions	Finding equivalent fractions using an area model
	Finding equivalent fractions using a number line
	Finding equivalent fractions using multiplication
	Using common factors to simplify proper fractions
	Converting mixed numbers & improper fractions
Equivalent fractions & decimals	Connecting decimals & fractions

5.N.2 Divide multi-digit numbers and solve real-world and mathematical problems using arithmetic.

5.N.2.1 Estimate solutions to division problems to assess the reasonableness of results.	
Course Topics	**Activities**
N—Division	Estimate quotients
Topics	**Skill Quests**
Round to estimate	Rounding to estimate division problems

5.N.2.2 Divide multi-digit numbers, by one- and two-digit divisors, based on knowledge of place value, including but not limited to standard algorithms.	
Course Topics	**Activities**
N—Division	Divide: 1-digit divisor
	Divide: 1-digit divisor 2
Topics	**Skill Quests**
Dividing multi-digit numbers	Dividing by a 1-digit number using partitioning
	Dividing by a 2-digit number using partitioning
	Dividing by a 1-digit number using factoring
	Dividing by a 2-digit number using factoring
	Extended division - no remainders or zeros
	Extended division with remainders
	Contracted division - no remainders or zeros
	Contracted division- no remainders
	Contracted division - with & without remainders

5.N.2.3 Recognize that remainders can be represented in a variety of ways, including a whole number, fraction, or decimal. Determine the most meaningful form of a remainder based on the context of the problem.	
Course Topics	**Activities**
N—Division	Divide: 1-digit divisor, remainder
Topics	**Skill Quests**
Fractional remainders	Finding fractional remainders

5.N.2.4 Construct models to solve multi-digit whole number problems requiring addition, subtraction, multiplication, and division using various representations, including the inverse relationships between operations, the use of technology, and the context of the problem to assess the reasonableness of results.	
Course Topics	**Activities**
N—Division	Order of operations 1
Topics	**Skill Quests**
Add & subtract practical problems	Addition & subtraction word problems
Multiply & divide practical problems	Multiplication & division word problems

5.N.3 Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals to solve real world and mathematical problems.

5.N.3.1 Estimate sums and differences of fractions with like and unlike denominators, mixed numbers, and decimals to assess the reasonableness of the results.	
Course Topics	**Activities**
N—Decimals	Estimate decimal differences
	Estimate decimal sums 1
	Estimate decimal differences 2
	Estimate decimal sums 2
Topics	**Skill Quests**
Add/sub decimals - estimating	Estimating sums & differences of decimals

5.N.3.2 Illustrate addition and subtraction of fractions with like and unlike denominators, mixed numbers, and decimals using a variety of mathematical models (e.g., fraction strips, area models, number lines, fraction rods).	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Add/sub fractions, same denominator	Adding & subtracting fractions, same denominator
	Adding mixed numbers, same denominator
	Subtracting mixed numbers, same denominator
Add & subtract proper fractions	Adding fractions with related denominators
	Subtracting fractions with related denominators
	Add & subtract fractions - related denominators
Add & subtract mixed numerals	Adding fractions & mixed numerals
	Subtracting fractions & mixed numerals
Add & subtract to 2 decimal places	Adding decimals to 2 decimal places
	Subtracting decimals to 2 decimal places
	Adding decimals using mental strategies
	Subtracting decimals using mental strategies
Add/sub decimals - digital technologies	Adding & subtracting decimals using digital technologies

Add/sub decimals - written method	Adding & subtracting decimals using written method

5.N.3.3 Add and subtract fractions with like and unlike denominators, mixed numbers, and decimals, involving money, measurement, geometry, and data. Use various models and efficient strategies, including but not limited to standard algorithms.	
Course Topics	**Activities**
N—Fractions	Add unlike fractions
	Add unlike mixed numbers
	Add: no common denominator
Topics	**Skill Quests**
Fraction & decimal problems in context	Solving fraction & decimal problems

5.N.3.4 Apply mental math and knowledge of place value (no written computations) to find 0.1 more or 0.1 less than a number, 0.01 more or 0.01 less than a number, and 0.001 more or 0.001 less than a number.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

5.A Algebraic Reasoning and Algebra (A)

5.A.1 Describe and graph patterns of change created through numerical patterns.

5.A.1.1 Use tables and rules with up to two operations to describe patterns of change and make predictions and generalizations about various mathematical situations.	
Course Topics	**Activities**
A—Patterns & expressions	Find the function rule
	Function rules and tables
Topics	**Skill Quests**
Pattern rules	Creating tables of values for linear relations
	Interpreting & creating a number pattern table

5.A.1.2 Use a rule or table to represent ordered pairs of whole numbers and graph these ordered pairs on a coordinate plane, identifying the origin and axes in relation to the coordinates.	
Course Topics	**Activities**
A—Patterns & expressions	Coordinate graphs
	Graphing from a table of values 2
Topics	**Skill Quests**
Ordered pairs	Representing linear growing patterns

5.A.2 Understand and interpret expressions, equations, and inequalities involving variables and whole numbers, and use them to represent and evaluate real-world and mathematical problems.

5.A.2.1 Generate equivalent numerical expressions and solve problems using number sense involving whole numbers by applying the commutative property, associative property, distributive property, and order of operations (excluding exponents).	
Course Topics	**Activities**
A—Patterns & expressions	Multiplication properties
	Order of operations 2
Topics	**Skill Quests**
Understand order of operations	Order of operations with no grouping symbols
	Order of operations using grouping symbols
	Order of operations practical situations

5.A.2.2 Determine whether an equation or inequality involving a variable is true or false for a given value of the variable.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

5.A.2.3 Evaluate expressions involving variables when values for the variables are given.	
Course Topics	**Activities**
A—Patterns & expressions	Missing numbers: variables
	Write an equation: word problems
	Word problems with letters
Topics	**Skill Quests**
Expressions with variables	Evaluating expressions with variables

5.G Geometry and Measurement (GM)

5.GM.1 Describe, identify, classify, and construct two- and three dimensional figures using their geometric attributes.

5.GM.1.1 Describe, identify, classify, and construct triangles (equilateral, right, scalene, isosceles) by their attributes using various mathematical models.	
Course Topics	**Activities**
GM—Shapes	Triangle tasters
	Triangles: acute, right, obtuse
Topics	**Skill Quests**
Classify triangles	Classifying triangles

5.GM.1.2 Describe, identify, and classify three-dimensional figures (cubes, rectangular prisms, and pyramids) and their attributes (number of edges, faces, vertices, shapes of faces), given various mathematical models.	
Course Topics	**Activities**
GM—Shapes	How many faces?
	How many edges?
	How many corners?
	Faces, edges and vertices
Topics	**Skill Quests**
Connect 3D with 2D representations	Naming prisms & pyramids

5.GM.1.3 Recognize and draw a net for a three-dimensional figure (cube, rectangular prism, pyramid).	
Course Topics	**Activities**
GM—Shapes	Nets
Topics	**Skill Quests**
Connect objects to nets	Connecting prisms & pyramids with their nets
	Connecting 3D objects with their nets

5.GM.2 Determine volume using the object's dimensions. Compare and analyze rectangular prisms with equivalent volume to recognize their different dimensions.

5.GM.2.1 Determine the volume of rectangular prisms by the number of unit cubes (*n*) used to construct the shape and by the product of the dimensions of the prism a · b · c = n. Understand rectangular prisms of different dimensions (p, q, and r) can have the same volume if a · b · c = p · q · r = n.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Investigate volume using blocks	Investigating volume using blocks
	Calculating volume rectangular prisms (cm^3 & m^3)

5.GM.2.2 Estimate the perimeter of polygons and create arguments for reasonable perimeter values of shapes that may include curves.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

5.GM.3 Understand angle, length, weight, and capacity as measurable attributes of real-world and mathematical objects, using various tools to measure them. Solve real-world problems of length.

5.GM.3.1 Measure and compare angles according to size using various tools.	
Course Topics	**Activities**
GM—Angles & length	Right angle relation
	Equal angles
	Measuring angles
	Comparing angles
Topics	**Skill Quests**
Classify & measure angles	Classifying angles
	Measuring & estimating angles

5.GM.3.2 Measure the length of an object to the nearest whole centimeter or up to 1/16 inch using an appropriate instrument.	
Course Topics	**Activities**
GM—Angles & length	Measuring length
Topics	**Skill Quests**
Measure perimeter lengths	Measuring perimeter using a ruler

5.GM.3.3 Apply the relationship between inches, feet, and yards to measure, convert, and compare objects to solve problems.	
Course Topics	**Activities**
GM—Angles & length	Inches, feet, yards
Topics	**Skill Quests**
Convert inches, feet, yards	Converting between customary units of length

5.GM.3.4 Apply the relationship between millimeters, centimeters, and meters to measure, convert, and compare objects to solve problems.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Convert measurement units	Converting between standard metric units of length

5.GM.3.5 Estimate lengths and geometric measurements to the nearest whole unit, using benchmarks in customary and metric measurement systems.	
Course Topics	**Activities**
GM—Angles & length	Measuring length with blocks
Topics	**Skill Quests**
Teacher directed	

5.D Data and Probability (D)

5.D.1 Create and analyze data to find the range and measures of central tendency (mean, median, mode).

5.D.1.1 Find the measures of central tendency (i.e., mean, median, mode) and range of a set of data. Understand that the mean is a "leveling out" or central balance point of the data.	
Course Topics	**Activities**
D—Analyze data	Data terms
	Mean
	Mean from frequency table
	Median
	Median from frequency table
	Median and cumulative frequency
	Mode
	Mode from frequency table
Topics	**Skill Quests**
Understand data distributions	Understanding & calculating the mode
	Understanding the median
	Understanding the mean
	Calculating & comparing mean, median & mode
	Range

5.D.1.2 Create and analyze line and double-bar graphs with increments of whole numbers, fractions, and decimals.	
Course Topics	**Activities**
D—Analyze data	Divided bar graphs
Topics	**Skill Quests**
Interpret line & bar graphs	Side-by-side column graphs
	Represent & interpret measurements: line plots

Grade 6

6.N Numbers and Operations (N)

6.N.1 Read, write, and represent rational numbers expressed as integers, fractions, decimals, percents, and ratios; use these representations in real-world and mathematical situations.

6.N.1.1 Use manipulatives and models (e.g., number lines) to determine positive and negative numbers and their contexts, identify opposites, and explain the meaning of 0 (zero) in a variety of situations.	
Course Topics	**Activities**
N-Integers	Integers on a Number Line
	Ordering Integers (Number Line)
Topics	**Skill Quests**
Understand integers	Recognizing situations that use integers
	Locating & representing integers on a number line
	Direction & magnitude

6.N.1.2 Compare and order positive rational numbers, represented in various forms, or integers using the symbols "<", ">", and "=".	
Course Topics	**Activities**
N-Integers	Comparing Integers
Topics	**Skill Quests**
Compare & order integers	Comparing & ordering integers

6.N.1.3 Explain that a percent represents parts “out of 100” and ratios “to 100.”	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Percent	Introducing percentages

6.N.1.4 Determine equivalencies among fractions, mixed numbers, decimals, and percents.	
Course Topics	**Activities**
N-Fractions, decimals & percents equivalence	Fractions to Decimals
	Fraction to Terminating Decimal
	Decimals to Fractions 1
	Percents and Decimals
	Match Decimals and Percentages
Topics	**Skill Quests**
Fractions, decimals, percents	Connecting percentages & decimals
	Connecting percentages & fractions
	Relationship - percentages, decimals & fractions

6.N.2 Read, write, and model whole-number and integer operations to solve problems.

6.N.2.1 Estimate solutions for integer addition and subtraction of problems in order to assess the reasonableness of results.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Teacher directed	

6.N.2.2 Illustrate addition and subtraction of integers using a variety of representations.	
Course Topics	**Activities**
N-Integers	Negative or Positive?
Topics	**Skill Quests**
Add & subtract integers with models	Adding & subtracting integers using models

6.N.2.3 Add and subtract integers in a variety of situations; use efficient and generalizable procedures including but not limited to standard algorithms.	
Course Topics	**Activities**
N-Integers	Add Integers
	Subtract Integers
	Integers: Add and Subtract
	More with Integers
Topics	**Skill Quests**
Add & subtract integers	Adding & subtracting integers
	Solving addition & subtraction integer problems

6.N.2.4 Identify and represent patterns with whole-number exponents and perfect squares. Evaluate powers with whole-number bases and exponents.	
Course Topics	**Activities**
N-Prime & composite numbers	Exponents
Topics	**Skill Quests**
Patterns with exponents	Introducing square numbers
	Writing numerical expressions with exponents
	Finding squares and cubes
	Evaluating powers of 10

6.N.2.5 Factor whole numbers and express prime and composite numbers as a product of prime factors with exponents.	
Course Topics	**Activities**
N-Prime & composite numbers	Prime or Composite?
	Product of Prime Factors

	Prime Factoring
	Prime Factorization with Exponent
Topics	**Skill Quests**
Prime, composite & square numbers	Introducing prime & composite numbers
	Using prime factors

6.N.2.6 Determine the greatest common factors and least common multiples. Use common factors and multiples to calculate with fractions, find equivalent fractions, and express the sum of two-digit numbers with a common factor using the distributive property.	
Course Topics	**Activities**
N-Factors & multiples	Factors
	Find the Factor
	Greatest Common Factor
	Multiples
	Least Common Multiple
N-Adding & subtracting fractions	Equivalent Fractions
	Simplify Fractions
	Add Unlike Fractions
	Subtract Unlike Fractions
	Add Unlike Mixed Numbers
	Subtract Unlike Mixed Numbers
Topics	**Skill Quests**
Factors and multiples	Greatest common factor & least common multiple
Equivalent fractions	Finding equivalent fractions
	Simplifying fractions
	Adding fractions with related denominators
	Subtracting fractions with related denominators
	Adding fractions & mixed numerals
	Subtracting fractions & mixed numerals

6.N.3 Explain and use the concept of ratio and its relationship to other rational numbers and to the multiplication and division of whole numbers. Use ratios to solve problems.

6.N.3.1 Identify and use ratios to compare and relate quantities in multiple ways. Recognize that multiplicative comparison and additive comparison are different.	
Course Topics	**Activities**
N-Ratios & rates	Ratios
	Equivalent Ratios
Topics	**Skill Quests**
Introduction to ratios	Defining, understanding & writing ratios

6.N.3.2 Determine the unit rate for ratios.	
Course Topics	**Activities**
N-Ratios & rates	Rates

Topics	Skill Quests
Solve problems involving ratios	Solving problems with unit rates
	Solving ratio problems

6.N.3.3 Apply the relationship between ratios, equivalent fractions, unit rates, and percents to solve problems in various contexts.	
Course Topics	**Activities**
N-Ratios & rates	Rate Word Problems
	Ratio Word Problems
	Percentage Word Problems
Topics	**Skill Quests**
Proportional relationships	Expressing simple ratios as percents
	Simplifying ratios

6.N.4 Multiply and divide decimals, fractions, and mixed numbers; solve real world and mathematical problems with rational numbers.

6.N.4.1 Estimate solutions to problems with whole numbers, decimals, fractions, and mixed numbers, and use the estimates to assess the reasonableness of results in the context of the problem.	
Course Topics	**Activities**
N-Estimation	Estimate Sums
	Estimate Differences
	Estimate Products
	Estimate Quotients
	Estimate Decimal Sums 1
	Estimate Decimal Differences 1
Topics	**Skill Quests**
Teacher directed	

6.N.4.2 Illustrate multiplication and division of fractions and decimals to show connections to fractions, whole number multiplication, and inverse relationships.	
Course Topics	**Activities**
N-Multiplying & dividing fractions	Model Fractions to Multiply
	Multiply Fraction by Whole Number
	Multiply Fraction by Fraction
	Divide Fractions Visual Model
N-Multiplying & dividing decimals	Multiply Decimals 1
	Multiply Decimals: Area Model
Topics	**Skill Quests**
Model mult/div of fractions & decimals	Multiplying whole numbers & proper fractions
	Dividing whole numbers by fractions using models
	Dividing fractions by whole numbers using models
	Multiplying decimals using models
	Dividing whole numbers by decimals using models

	Dividing decimals by whole numbers using models

6.N.4.3 Multiply and divide fractions and decimals using efficient and generalizable procedures.	
Course Topics	**Activities**
N-Multiplying & dividing fractions	Multiply: Whole Number and Fraction
	Multiply Two Fractions 1
	Multiply Mixed Numbers
	Divide Whole Number by Fraction
	Divide by a Unit Fraction
	Divide Mixed Numbers
N-Multiplying & dividing decimals	Multiply Decimals: 10, 100, 1000
	Decimal by Whole Number
	Multiply Decimal by Decimal
	Divide Decimals: 10, 100, 1000
	Divide Decimals
	Divide Decimal by Whole Number
	Divide Decimal by Decimal
Topics	**Skill Quests**
Multiply & divide fractions & decimals	Multiplying fractions
	Dividing fractions & whole numbers
	Dividing fractions
	Dividing mixed numbers & improper fractions
	Multiplying decimals
	Dividing with decimals

6.N.4.4 Use mathematical modeling to solve and interpret problems including money, measurement, geometry, and data requiring arithmetic with decimals, fractions, and mixed numbers.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Problems with rational numbers	Solving real-world problems

6.A Algebraic Reasoning and Algebra (A)

6.A.1 Recognize and represent relationships between varying quantities; translate from one representation to another; use patterns, tables, graphs, and rules to model and solve mathematical problems.

6.A.1.1 Plot integer- and rational-valued (limited to halves and fourths) ordered-pairs as coordinates in all four quadrants and recognize the reflective relationships among coordinates that differ only by their signs.	
Course Topics	**Activities**
A-Coordinate plane	Number Plane
	Ordered Pairs

	Graphing from a Table of Values
Topics	**Skill Quests**
Integers on the coordinate plane	Plot & identify integers on the coordinate plane

6.A.1.2 Represent relationships between two varying positive quantities involving no more than two operations with rules, graphs, and tables; translate between any two of these representations.	
Course Topics	**Activities**
A-Patterns	Increasing Patterns
	Decreasing Patterns
	Describing Patterns
	Table of Values
Topics	**Skill Quests**
Linear relationships	Continuing & creating number sequences
	Representing linear growing patterns
	Creating tables of values for linear relations
	Matching graphs & linear relations
	Linear pattern rules

6.A.1.3 Use and evaluate variables in expressions, equations, and inequalities that arise from various contexts, including determining when or if, for a given value of the variable, an equation or inequality involving a variable is true or false.	
Course Topics	**Activities**
A-Expressions & equations	Simple Substitution
Topics	**Skill Quests**
Evaluate algebraic expressions	Evaluating algebraic expressions

6.A.2 Use properties of arithmetic to generate equivalent numerical expressions and evaluate expressions involving positive rational numbers.

6.A.2.1 Generate equivalent numerical expressions and solve problems using number sense involving whole numbers by applying the commutative property, associative property, distributive property, and order of operations (excluding exponents).	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Equivalent expressions	Order of operations
	Properties of operations

6.A.3 Use equations and inequalities to model and solve mathematical problems and use the idea of maintaining equality to solve equations. Interpret solutions in the original context.

6.A.3.1

Model mathematical situations using expressions, equations and inequalities involving variables and rational numbers.	
Course Topics	**Activities**
A-Expressions & equations	I am Thinking of a Number!
	Write an Equation: Word Problems
Topics	**Skill Quests**
Model expressions & equations	Writing expressions with numbers & variables
	Writing equations with numbers & variables

6.A.3.2 Use number sense and properties of operations and equality to model and solve mathematical problems involving equations in the form x + p = q and px = q, where p and q are nonnegative rational numbers. Graph the solution on a number line, interpret the solution in the original context, and assess the reasonableness of the solution.	
Course Topics	**Activities**
A-Expressions & equations	Missing Numbers: Variables
	Solve Equations: Multiply, Divide 1
	Missing Values: Decimals
Topics	**Skill Quests**
Solve linear equations	Solving 1-step linear equations
Represent linear equations	Table of values
	Graphing linear equations

6.G Geometry and Measurement (GM)

6.GM.1 Use translations, reflections, and rotations to establish congruence and understand symmetry (not on a coordinate plane).

6.GM.1.1 Predict, describe, and apply translations (slides), reflections (flips), and rotations (turns) to a two-dimensional figure.	
Course Topics	**Activities**
GM-Transformations & symmetry	Transformations
Topics	**Skill Quests**
Transformations	Identifying & describing transformations

6.GM.1.2 Recognize that translations, reflections, and rotations preserve congruence and use them to show that two figures are congruent.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Congruence	Identifying congruence

6.GM.1.3 Identify and describe the line(s) of symmetry in two-dimensional shapes.

Course Topics	Activities
GM-Transformations & symmetry	Symmetry
	Lines of Symmetry
Topics	**Skill Quests**
Line symmetry	Identifying line symmetry

6.GM.2 Use mathematical modeling to calculate the area of squares, parallelograms, and triangles to solve problems.

6.GM.2.1 Develop and use formulas for the area of squares and parallelograms using a variety of methods including but not limited to the standard algorithms and finding unknown measures.	
Course Topics	**Activities**
GM-Area	Area of Squares and Rectangles
	Area: Parallelograms
Topics	**Skill Quests**
Area of rectangles & parallelograms	Finding areas of rectangles & parallelograms

6.GM.2.2 Develop and use formulas to determine the area of triangles and find unknown measures.	
Course Topics	**Activities**
GM-Area	Area of Triangles
Topics	**Skill Quests**
Investigate area of triangles	Investigate area of triangles

6.GM.2.3 Find the area of right triangles, other triangles, special quadrilaterals, and polygons that can be decomposed into triangles and other shapes.	
Course Topics	**Activities**
GM-Area	Area: Compound Figures
	Area: Composite Shapes
Topics	**Skill Quests**
Find area of triangles	Finding the area of a triangle

6.GM.3 Understand and use relationships between angles in geometric figures.

6.GM.3.1 Solve problems using the relationships between the angles (vertical, complementary, and supplementary) formed by intersecting lines.	
Course Topics	**Activities**
GM-Angles	Equal, Complement, or Supplement?
	Vertically Opposite: Value of x
Topics	**Skill Quests**
Understand angle properties	Understanding adjacent angles
	Exploring vertically opposite angles

	Calculating angles that total 360°
	Investigating supplementary & complementary angles

6.GM.3.2 Develop and use the fact that the sum of the interior angles of a triangle is 180° to determine missing angle measures in a triangle.	
Course Topics	**Activities**
GM-Angles	Angle Sum of a Triangle
Topics	**Skill Quests**
Interior angles of triangles	Working with angles within triangles

6.GM.4 Choose appropriate units of measurement and use ratios to convert within measurement systems to model and solve real-world and mathematical problems.

6.GM.4.1 Estimate weights and capacities using benchmarks in customary and metric measurement systems with appropriate units.	
Course Topics	**Activities**
GM-Measurement	Ounces and Pounds
	Cups, Pints, Quarts, Gallons
Topics	**Skill Quests**
Teacher directed	

6.GM.4.2 Solve problems that require the conversion of lengths within the same measurement systems using appropriate units.	
Course Topics	**Activities**
GM-Measurement	Centimeters and Millimeters
	Meters and Kilometers
	Converting Units of Length
	Operations with Length
	Customary Units of Length
Topics	**Skill Quests**
Problems in different length units	Solving problems involving unit conversions

6.D Data and Probability (D)

6.D.1 Interpret and analyze data.

6.D.1.1 Interpret the mean, median, and mode for a set of data.	
Course Topics	**Activities**
Teacher directed	
Topics	**Skill Quests**
Mean, median, mode	Calculating & comparing mean, median & mode

6.D.1.2 Explain and justify which measure of center (mean, median, or mode) would provide the most descriptive information for a given set of data.	
Course Topics	**Activities**
D-Data & probability	Which Measure of Central Tendency?
Topics	**Skill Quests**
Applying measures of center	Recognising appropriate statistical measures

6.D.2 Use probability to model and solve mathematical problems; represent probabilities using fractions and decimals.

6.D.2.1 Represent possible outcomes using a probability continuum from impossible to certain.	
Course Topics	**Activities**
D-Data & probability	Chance Dial
Topics	**Skill Quests**
Represent possible outcomes	Probability as a fraction, decimal or percent
	Probabilities from 0 to 1

6.D.2.2 Determine the sample space for a given experiment and determine which members of the sample space are related to certain events. Sample space may be determined by the use of tree diagrams, tables, or pictorial representations.	
Course Topics	**Activities**
D-Data & probability	Possible Outcomes
	Counting Techniques 1
Topics	**Skill Quests**
Sample space	Investigating equally likely outcomes

6.D.2.3 Demonstrate simple experiments in which the probabilities are known and compare the resulting relative frequencies with the known probabilities, recognizing that there may be differences between the two results.	
Course Topics	**Activities**
D-Data & probability	Introductory probability
	Find the Probability
	Fair Games
Topics	**Skill Quests**
Chance experiments	Conducting chance experiments

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