

Mathletics Saskatchewan Program of Studies

Understanding Practice and Fluency (UPF)



Grades 3 – 6

November, 2021

Mathletics

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Grade 3

1 Number

Outcome	Quests	Content
1. Demonstrate understanding of whole numbers to 1000 (concretely, pictorially, physically, orally, in writing, and symbolically) including: representing (including place value), describing, estimating with referents, comparing two numbers, ordering three or more numbers.	Read & write numbers to 1000	Reading & writing numbers up to 1000
		Connecting multiples of 10 & 100 to number words
		Identifying numbers before & after within 1000
	Compare & order numbers to 1000	Comparing & ordering numbers up to 1000
	Place value up to 1000	Identifying place value of numbers to 1000
		Using place value to partition 3-digit numbers
		Non-standard partitioning, 3-digit numbers
		Solving place value number problems
	Count to 1000	Counting by 10s to 1000, forward & backward
		Counting by 2s to 1000, forward and backward
		Counting by 5s to 1000, forward and backward
		Counting by 3s to 1000, forward and backward
		Counting by 4s to 1000, forward and backward
		Counting by 25s to 1000, forward and backward
		Counting by 100s to 1000, forward and backward
		Counting by 10s & 1s to 1000
		Counting by 10s, off the decade
	Estimating to 1000	Estimating quantities up to 1000 using referents
2. Demonstrate understanding of addition of whole numbers with answers to 1000 and their corresponding subtractions (limited to 1, 2, and 3-digit numerals) including: representing strategies	Addition & subtraction to 1000	Adding up to 1000 using a number line
		Adding up to 1000 using bridging to ten
		Adding up to 1000 using a jump strategy

for adding and subtracting concretely, pictorially, and symbolically, solving situational questions involving addition and subtraction, estimating using personal strategies for adding and subtracting.		Adding up to 1000 using a split strategy
		Adding up to 1000 using rounding & compensating
		Subtracting up to 100 using a number line
		Subtracting up to 1000 using a split strategy
		Subtracting up to 1000 using a jump strategy
		Subtracting up to 1000 using bridging to ten
		Subtract up to 1000 using rounding & compensating
		Add/subtract up to 1000 using a number line
		Add/subtract up to 1000 using bridging to ten
		Add/subtract up to 1000 using a jump strategy
		Add/subtract up to 1000 using a split strategy
		Add/subtract to 1000 using rounding & compensating
		Represent add/subtract problems using a bar model
		Estimating sums & differences to 1000
		Estimating sums & differences in problem solving
		Solving addition & subtraction word problems
	Mental strategies: add/sub facts to 18	Using the commutative property of addition
		Adding 3 single-digit numbers
		Finding the difference between 2 numbers
		Using doubles & near doubles to add & subtract
		Mental strategies for addition & subtraction facts
		Adding & subtracting zero
3. Demonstrate understanding of multiplication to 5×5 and the corresponding division statements including: representing and explaining using repeated addition or subtraction, equal grouping, and arrays, creating and solving situational questions, modelling	Multiplication concepts to 5×5	Using repeated addition to multiply
		Exploring multiplication by 2
		Exploring multiplication by 3

processes using concrete, physical, and visual representations, and recording the process symbolically, relating multiplication and division.		Exploring multiplication by 4
		Exploring multiplication by 5
		Multiplication facts to 5 x 5
	Division concepts (up to 5 x 5 facts)	Using repeated subtraction to divide
		Dividing by 2
		Dividing by 3
		Dividing by 4
		Dividing by 5
	Multiplication & division (to 5 x 5)	Relationship between multiplication & division
		Solving problems using arrays
		Multiplication & division word problems
4. Demonstrate understanding of fractions concretely, pictorially, physically, and orally including: representing, observing and describing situations, comparing, relating to quantity.	Fraction concepts	Finding halves
		Finding fourths
		Working with halves & fourths
		Working with thirds
		Working with sixths
		Working with thirds & sixths
		Working with fifths
		Working with eighths
		Working with halves, fourths & eighths
		Representing simple fractions
		Equivalent fractions

2 Patterns and Relations

Outcome	Quests	Content
1. Demonstrate understanding of increasing and decreasing patterns including: observing and describing, extending, comparing, creating patterns using manipulatives, pictures, sounds, and actions.	Increasing & decreasing patterns	Identifying & describing number patterns
		Identifying & creating number patterns
		Increasing & decreasing visual patterns
2. Demonstrate understanding of equality by solving one-step addition and subtraction equations involving symbols representing an unknown quantity.	Add & subtract: One-step equations	One-step add/subtract problems with unknowns
	Equivalent relationships to 100	Equivalent addition & subtraction number sentences

3 Shape and Space

Outcome	Quests	Content
1. Demonstrate understanding of the passage of time including: relating common activities to standard and nonstandard units, describing relationships between units, solving situational questions.	Time concepts	Using calendars
		Introducing time in hours, minutes & seconds
		Recalling relationships between units of time
		Identifying activities completed in units of time
2. Demonstrate understanding of measuring mass in g and kg by: selecting and justifying referents for g and kg, modelling and describing the relationship between g and kg, estimating mass using referents, measuring and recording mass.	Measure mass	Measuring mass: kilograms & grams
		Selecting units of measure: mass
		Relationship between grams & kilograms
3. Demonstrate understanding of linear measurement (cm and m) including: selecting and justifying referents, generalizing the relationship between cm and m, estimating length and perimeter using referents, measuring and recording length, width, height, and perimeter.	Measure length	Measuring and converting cm & m
		Ordering & comparing lengths in m & cm
		Measuring perimeter: regular & irregular shapes
		Measuring lengths of 3D objects
4. Demonstrate understanding of 3-D objects by analyzing characteristics including faces, edges, and vertices.	3D objects	Introducing the attributes of 3D objects
		Introducing cubes
		Introducing cylinders
		Introducing spheres
		Introducing cones
		Introducing prisms & pyramids
		Describing the attributes of 3D objects
		Comparing & sorting 3D objects
		Making basic models of 3D objects
5. Demonstrate understanding of 2-D shapes (regular and irregular) including triangles, quadrilaterals, pentagons, hexagons, and octagons including: describing, comparing, sorting.	Sort & identify 2D shapes	Comparing 2D shapes
		Identifying & naming 2D shapes
		Sorting 2D shapes
	Regular & irregular polygons	Understanding regular & irregular polygons

4 Statistics and Probability

Outcome	Quests	Content
1. Demonstrate understanding of first-hand data using tally marks, charts, lists, bar graphs, and line plots (abstract pictographs), through: collecting, organizing, and representing, solving situational questions.	Understand first-hand data	Understanding & using line plots
		Understanding & using bar graphs
		Understanding & using data in lists & tables
		Understanding the statistical process

Grade 4

1 Number

Outcome	Quests	Content
1. Demonstrate an understanding of whole numbers to 10 000 (pictorially, physically, orally, in writing, and symbolically) by: representing, describing, comparing two numbers, ordering three or more numbers.	Number concepts to 10 000	Reading & writing numbers to 10 000
		Identifying numbers before & after to 10 000
		Identifying missing numbers to 10 000
		Comparing & ordering numbers to 10 000
		Understanding place value, 4-digit numbers
		Partitioning 4-digit numbers
2. Demonstrate an understanding of addition of whole numbers with answers to 10 000 and their corresponding subtractions (limited to 3 and 4- digit numerals) by: using personal strategies for adding and subtracting, estimating sums and differences, solving problems involving addition and subtraction.	Addition to 10 000	Adding up to 10 000 using a number line
		Adding up to 10 000 using place value
		Adding up to 10 000 using a split strategy
		Adding up to 10 000 using rounding & compensating
		Adding up to 10 000 using algorithms
		Choosing mixed addition strategies
	Subtraction to 10 000	Subtracting up to 10 000 using a number line
		Subtracting up to 10 000 using place value
		Subtracting up to 10 000 using a split strategy
		Subtracting up to 10 000 using round & compensate
		Subtracting up to 10 000 using algorithms
		Choosing mixed subtraction strategies
	Add & subtract word problems to 10 000	Solving addition & subtraction word problems
3. Demonstrate an understanding of multiplication of whole numbers (limited to numbers less than or equal to 10) by: applying mental	Multiplication facts to 100	Exploring multiplication by 2
		Exploring multiplication by 3
		Exploring multiplication by 4
		Exploring multiplication by 5
		Exploring multiplication by 6

mathematics strategies, explaining the results of multiplying by 0 and 1		Exploring multiplication by 7
		Exploring multiplication by 8
		Exploring multiplication by 9
		Exploring multiplication by 10
		Multiplying by 1 or 0
		Recalling multiplication facts for 2, 5 & 10
		Recalling multiplication facts for 3 & 6
		Recalling multiplication facts for 7
		Recalling multiplication facts for 4 & 8
		Recalling multiplication facts for 9
		Recalling multiplication facts to 10 x 10
	Division facts to 100	Recalling the division facts for 2, 5 & 10
		Recalling division facts for 3
		Recalling division facts for 4
		Recalling division facts for 6
		Recalling division facts for 7
		Recalling division facts for 8
		Recalling division facts for 9
	Multiplication & division facts to 100	Multiplying & dividing by 2s, 5s & 10s
4. Demonstrate an understanding of multiplication (2- or 3-digit by 1-digit) by: using personal strategies for multiplication, with and without concrete materials, using arrays to represent multiplication, connecting concrete representations to symbolic representations, estimating products, solving problems.	Multiplication, 2- or 3-digit by 1-digit	Multiplying 2- or 3-digits by 1-digit, place value
		Multiplying 2- or 3-digits by 1-digit, doubling
		Multiplying 2- or 3-digits by 1-digit, area model
		Multiplying 2- or 3-digits by 1-digit, factoring
		Multiply 2- or 3-digits x 1-digit round & estimate
		Multiplying by multiples of 10 & 100
5. Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by: using personal strategies for dividing with and without concrete materials, estimating quotients, explaining the results of dividing by 1, solving problems involving division of whole numbers, relating division to multiplication.	Division, 2-digit by 1-digit	Dividing 2-digits by 1-digit, models
		Dividing 2-digits by 1-digit, halving
		Dividing 2-digits by 1-digit, related facts
		Dividing 2-digits by 1-digit, inverse relationship
		Dividing 2-digit by 1-digit, round to estimate
		Dividing by 1 using bar models

6. Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to: name and record fractions for the parts of a whole or a set, compare and order fractions, model and explain that for different wholes, two identical fractions may not represent the same quantity, provide examples of where fractions are used.	Represent fractions less or equal to 1	Introducing the terms numerator & denominator
		Understanding fractions
		Representing halves, fourths & eighths
		Representing thirds & sixths
		Representing fifths
		Representing tenths
		Representing eighths
	Compare & order fractions with models	Comparing & ordering unit fractions with models
		Comparing & ordering common fractions with models
7. Demonstrate an understanding of decimal numbers in tenths and hundredths (pictorially, orally, in writing, and symbolically) by: describing, representing, relating to fractions.	Decimals to hundredths	Introducing decimal notation
		Introducing decimal tenths
		Introducing decimal hundredths
		Connecting fractions & decimals to hundredths
		Comparing & ordering decimals to hundredths
8. Demonstrate an understanding of addition and subtraction of decimals limited to hundredths (concretely, pictorially, and symbolically) by: using compatible numbers, estimating sums and differences, using mental math strategies, solving problems.	Add & subtract decimals to hundredths	Adding decimals to tenths
		Subtracting decimals to tenths
		Adding decimals to hundredths
		Subtracting decimals to hundredths
		Estimating decimal sums & differences
		Adding & subtracting decimal word problems
	Add & subtract decimals, money problems	Estimating & calculating change
		Using decimals in money
		Solving word problems involving money

2 Patterns and Relations

Outcome	Quests	Content
1. Demonstrate an understanding of patterns and relations by: identifying and describing patterns and relations in a chart, table or diagram, reproducing patterns and relations in a chart, table, or diagram using manipulatives, creating charts, tables, or diagrams to represent patterns and relations, solving problems involving patterns and relations	Understand patterns & relations	Identifying & creating additive number patterns
		Identifying & creating subtractive number patterns
		Exploring number patterns in tables & charts
		Creating addition patterns from a given rule
		Creating subtraction patterns from a given rule
		Understanding number patterns using multiplication
		Creating multiplication patterns from a given rule
		Understanding repeating patterns
		Exploring visual patterns
		Understanding shape patterns & rules
		Using patterns to solve problems
	Use Venn & Carroll diagrams	Introducing Venn diagrams
		Introducing Carroll diagrams
		Relating Carroll & Venn diagrams
2. Demonstrate an understanding of equations involving symbols to represent an unknown value by: writing an equation to represent a problem, solving one step equations.	One-step equations using all operations	Finding unknown values in add/subtract equations
		One-step equations: addition & subtraction
		One-step equations: multiplication & division
		One-step equations: balancing number sentences
	Write equations to represent problems	Writing equations to represent problems

3 Shape and Space

Outcome	Quests	Content
1. Demonstrate an understanding of time by: reading and recording time using digital and analog clocks (including 24-hour clocks), reading and recording calendar dates in a variety of formats.	Read & record time	Telling time to the hour & half hour
		Telling time to the quarter hour
		Telling time to five minutes
		Telling time to the minute
		Using am & pm notation
		Using 24-hour time
	Read & record calendar dates	Reading & writing calendar dates
2. Demonstrate an understanding of area of regular and irregular 2-D shapes by: recognizing that area is measured in square units, selecting and justifying referents for the units cm ² or m ² , estimating area by using referents for cm ² or m ² , determining and recording area (cm ² or m ²), constructing different rectangles for a given area (cm ² or m ²) in order to demonstrate that many different rectangles may have the same area.	Understand area	Measuring area using non-standard units
		Introducing formal units for area: cm ²
		Introducing formal units for area: m ²
	Measure the area of rectangles	Estimating & measuring areas of rectangles
		Comparing & ordering rectangular areas
		Finding the area of a rectangle, arrays
		Finding the area of a rectangle, area model
		Finding the area of rectangles, formula
	Approximate area, non-rectilinear shapes	Approximating areas, non-rectilinear shapes
3. Demonstrate an understanding of rectangular and triangular prisms by: identifying common attributes, comparing, constructing models.	Understand prisms	Identifying prisms in the environment
		Introducing rectangular & triangular prisms
		Comparing & describing prisms
		Connecting nets to rectangular & triangular prisms
4. Demonstrate an understanding of line symmetry by: identifying symmetrical 2-D shapes, creating symmetrical 2-D shapes, drawing one or more lines of symmetry in a 2-D shape.	Line symmetry	Recognizing line symmetry
		Identifying & drawing lines of symmetry

4 Statistics and Probability

Outcome	Quests	Content
1. Demonstrate an understanding of many-to-one correspondence by: comparing correspondences on graphs, justifying the use of many-to-one correspondences, interpreting data shown using a many-to-one correspondence, creating bar graphs and pictographs using many-to one correspondence.	Understand many-to-one correspondence	Using pictographs with many-to-one correspondence
		Compare pictographs with different correspondence
		Using bar graphs with many-to-one correspondence

Grade 5

1 Number

Outcome	Quests	Content
1. Represent, compare, and describe whole numbers to 1 000 000 within the contexts of place value and the base ten system, and quantity.	Number concepts to 1 000 000	Reading & writing numbers up to 6 digits
		Comparing & ordering numbers up to 6 digits
		Identifying place value of 6-digit numbers
		Using place value to partition 6-digit numbers
		Skip counting by 100s, 1000s, 10 000 & 100 000
2. Analyze models of, develop strategies for, and carry out multiplication of whole numbers.	Multiplication facts to 9×9	Multiplication facts for 2
		Multiplication facts for 3
		Multiplication facts for 4
		Multiplication facts for 5
		Multiplication facts for 6
		Multiplication facts for 7
		Multiplication facts for 8
		Multiplication facts for 9
		Multiplying by 1 or 0
		Recalling multiplication facts to 9×9
		Relationship between multiplication & division
	Multiply 2-digits by up to 2-digits	Multiplying 2-digits by 2-digits, area model
		Multiplying 2-digits by 2-digits, factoring
		Multiplying 2-digits by 2-digits, use known facts
	Mental strategies to multiply	Multiplying by multiples of 10, 100 & 1000
		Multiplying using doubling
		Multiplying using doubling & halving
		Multiplying using distributive property
3. Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.	Divide up to 3-digits by 1-digit	Dividing up to 3-digit by 1-digit, no remainders
		Dividing by partitioning, no remainders
		Dividing 3-digits by 1-digit, factoring

		Finding the remainder, 2 digits by 1 digit
		Dividing by partitioning with remainders
	Division facts to $81 \div 9$	Dividing by 2 & 5
		Dividing by 3 & 6
		Dividing by 4 & 8
		Dividing by 9
		Recall multiplication & division facts to 9×9
4. Develop and apply personal strategies for estimation and computation including: front-end rounding, compensation, compatible numbers.	Strategies for estimation & computation	Rounding numbers up to 6-digits
		Round numbers to estimate - addition & subtraction
		Using compensation to add & subtract
		Checking calculations when adding & subtracting
		Round numbers to estimate - multiply & divide
		Checking calculations when multiplying & dividing
5. Demonstrate an understanding of fractions by using concrete and pictorial representations to: create sets of equivalent fractions, compare fractions with like and unlike denominators.	Equivalent fractions	Finding equivalent fractions with models
		Finding equivalent fractions using multiplication
		Finding equivalent fractions using a number line
	Compare & order fractions	Comparing unit fractions, different denominators
		Comparing & ordering proper fractions
6. Demonstrate understanding of decimals to thousandths by: describing and representing, relating to fractions, comparing and ordering.	Decimals to thousandths	Understanding decimals to thousandths
		Comparing & ordering decimals to thousandths
		Partitioning decimal numbers to thousandths
		Relating fractions & decimals up to thousandths
7. Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).	Add & subtract decimals to thousandths	Adding decimals to thousandths
		Subtracting decimals to thousandths
		Adding & subtracting decimal word problems
		Estimating sums & differences to thousandths

2 Patterns and Relations

Outcome	Quests	Content
1. Represent, analyze, and apply patterns using mathematical language and notation.	Represent, analyze & apply patterns	Additive & subtractive number patterns
		Generating add/subtract patterns from a given rule
		Working with repeating number & shape patterns
		Multiplication & division number patterns
		Modelling number patterns from a table of values
		Writing pattern rules as algebraic expressions
		Working with shape patterns & rules
		Solving one-step equations using a bar model
2. Write, solve, and verify solutions of single-variable, one-step equations with whole number coefficients and whole number solutions.	One-step equations with variables	Writing one-step equations using variables
		Solving one-step equations & word problems

3 Shape and Space

Outcome	Quests	Content
1. Design and construct different rectangles given either perimeter or area, or both (whole numbers), and draw conclusions.	Perimeter of rectangles	Introducing perimeter
	Area of rectangles, formula	Finding the area of rectangles, formula
	Relationship between area & perimeter	Solving perimeter & area problems
2. Demonstrate understanding of measuring length (mm) by: selecting and justifying referents for the unit mm, modelling and describing the relationship between mm, cm, and m units.	Measure length in millimetres	Introducing millimetres
		Recording length in decimal notation
	Relationship between mm, cm & m	Comparing & ordering lengths in mm & cm
		Converting between mm & cm
		Converting between m & cm
3. Demonstrate an understanding of volume by: selecting and justifying referents for cm^3 or m^3 units, estimating volume by using referents for cm^3 or m^3 , measuring and recording volume (cm^3 or m^3), constructing rectangular prisms for a given volume.	Measure volume in cubic units	Introducing volume
		Using cubic cm & m to measure volume
		Estimating volume using cubic cm & m
4. Demonstrate understanding of capacity by: describing the relationship between mL and L, selecting and justifying referents for mL or L units, estimating capacity by using referents for mL or L, measuring and recording capacity (mL or L).	Measure capacity in L & mL	Introducing litres & millilitres
		Using millilitres & litres as references
		Measuring capacity in mL
		Estimating capacity using mL & L
		Selecting units to measure capacity (mL, L)
5. Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are: parallel, intersecting, perpendicular, vertical, horizontal.	Features of 2-D shapes & 3-D objects	Identifying features on 3-D objects
		Identifying features on 2-D objects
6. Identify and sort quadrilaterals, including: rectangles, squares, trapezoids, parallelograms, rhombuses according to their attributes.	Identify & sort quadrilaterals	Sorting & naming quadrilaterals
		Classifying quadrilaterals
7. Identify, create, and analyze single transformations of 2-D shapes (with and without the use of technology).	Single transformations of 2-D shapes	Introducing slides/translations
		Introducing flips/reflections
		Introducing turns/rotations
		One-step translations, reflections & rotations

4 Statistics and Probability

Outcome	Quests	Content
2. Construct and interpret double bar graphs to draw conclusions.	Double bar graphs	Interpreting data, double bar graphs
		Representing data, double bar graphs
3. Describe, compare, predict, and test the likelihood of outcomes in probability situations.	Probability	Exploring the language of probability
		Describing chances of everyday events
		Understanding chance experiments, equal outcomes
		Understanding chance experiments, unequal outcomes
		Understand chance experiments, independent events

Grade 6

1 Number

Outcome	Quests	Content
1. Demonstrate understanding of place value including: greater than one million, less than one thousandth with and without technology	Place value to billions	Reading & writing numbers up to billions
		Identifying place value up to billions
	Place value smaller than thousandths	Understanding place value smaller than thousandths
	Situational questions	Situational questions, larger than one million
		Situational questions, smaller than one thousandth
2. Demonstrate understanding of factors and multiples (concretely, pictorially, and symbolically) including: determining factors and multiples of numbers less than 100, relating factors and multiples to multiplication and division, determining and relating prime and composite numbers.	Prime & composite numbers	Introducing prime & composite numbers
	Prime factors	Using prime factors
	Factors & multiples	Finding multiples up to 100, including LCM
		Finding factors up to 100, including GCF
		Situational questions, factors & multiples
3. Demonstrate understanding of the order of operations on whole numbers (excluding exponents) with and without technology.	Order of operations with whole numbers	Order of operations, addition & subtraction
		Order of operations, multiplication & division
		Order of operations, 4 operations
		Order of operations, grouping symbols
		Situational questions, order of operations
4. Extend understanding of multiplication and division to decimals (1-digit whole number multipliers and 1-digit natural number divisors).	Multiply decimals to thousandths	Multiplying decimals & whole numbers
		Multiplying decimals, base 10 blocks
		Situational questions, multiplying decimals
	Divide decimals to thousandths	Dividing decimals, base 10 blocks
		Dividing whole numbers & decimals
		Situational questions, dividing decimals

5. Demonstrate understanding of percent (limited to whole numbers to 100) concretely, pictorially, and symbolically.	Whole number percentages	Introducing percentages
	Percentage equivalents	Representing percentage & fraction equivalents
		Representing percentage & decimal equivalents
		Fraction, decimal & percentage equivalents
	Calculate percentage discounts	Calculating percentage discounts
6. Demonstrate understanding of integers concretely, pictorially, and symbolically.	Read & represent integers	Calculating simple percentages
		Investigating integers
		Understanding integers in real-life contexts
		Comparing & ordering integers
7. Extend understanding of fractions to improper fractions and mixed numbers.	Improper fractions & mixed numbers	Comparing & ordering mixed numbers
		Comparing & ordering improper fractions
		Comparing & ordering fractions & mixed numbers
		Converting improper fractions to mixed numbers
		Converting mixed numbers to improper fractions
8. Demonstrate an understanding of ratio concretely, pictorially, and symbolically.	Introduction to ratios	Introducing ratios
		Simplifying ratios
		Dividing a quantity into a given ratio
		Identifying equivalent ratios

2 Patterns and Relationships

Outcome	Quests	Content
1. Extend understanding of patterns and relationships in tables of values and graphs.	Patterns in tables of values & graphs	Creating a table of values, visual pattern
		Determining missing values in a table of values
		Representing linear patterns, tables & graphs
2. Extend understanding of preservation of equality concretely, pictorially, physically, and symbolically.	Preservation of equality	Solving 1-step equations
		Solving 1-step equations using a balance
		Solving 1-step equations using algebra tiles
		Understanding the preservation of equality
		Creating equivalent forms of an equation
3. Extend understanding of patterns and relationships by using expressions and equations involving variables.	Patterns, expressions & equations	Writing an equation to represent a table of values
		Writing expressions, rule for a pattern

3 Shape and Space

Outcome	Quests	Content
1. Demonstrate understanding of angles including: identifying examples, classifying angles, estimating the measure, determining angle measures in degrees, drawing angles, applying angle relationships in triangles and quadrilaterals.	Angle measurement & classification	Classifying angles
		Finding the missing angle of a triangle
	Angles up to 360°	Finding the missing angle of a quadrilateral
2. Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms (concretely, pictorially, and symbolically) including: relating area to volume, comparing perimeter and area, comparing area and volume, generalizing strategies and formulae, analyzing the effect of orientation, solving situational questions.	Relationships between area & perimeter	Measuring angles with a circular protractor
	Volume of rectangular prisms	Solving perimeter & area problems
		Finding the volume of rectangular prisms
	Area of rectangles	Finding the missing dimension, rectangular prisms
3. Demonstrate understanding of regular and irregular polygons including: classifying types of triangles, comparing side lengths, comparing angle measures, differentiating between regular and irregular polygons, analyzing for congruence.	Perimeter of polygons	Finding the area of rectangles
	Regular & irregular polygons	Determining the perimeter of polygons
	Triangles	Understanding regular & irregular polygons
4. Demonstrate understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates.	The Cartesian plane, 1st quadrant	Classifying triangles by their sides & angles
		Plotting points in the first quadrant
5. Demonstrate understanding of single, and combinations of, transformations of 2-D shapes (with and without the use of technology) including: identifying, describing, performing.	Transformations	Plotting points that create a shape
		Translations in the first quadrant
		Reflections in the first quadrant
		Rotations in the first quadrant
		Identifying combinations of transformations

4 Statistics and Probability

Outcome	Quests	Content
1. Extend understanding of data analysis to include: line graphs, graphs of discrete data, data collection through questionnaires, experiments, databases, and electronic media, interpolation and extrapolation.	Line graphs	Constructing a line graph
		Interpreting data in a line graph
		Continuous vs discrete data
	Data collection	Data collection: questionnaires Selecting data displays
2. Demonstrate understanding of probability by: determining sample space, differentiating between experimental and theoretical probability, determining the theoretical probability, determining the experimental probability, comparing experimental and theoretical probabilities.	Theoretical & experimental probability	Comparing observed & expected frequencies
		Probability of 0 and 1
		Predicting the probability of a specific outcome
		Listing the sample space for an event



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