WNCP B.C. GRADE 4, 5 & 6 MATHEMATICS AT A GLANCE

NOTE: Text in ***italics*** is from the suggested achievement indicators.

STRAND: NUMBER

GENERAL OUTCOME: Develop number sense.

Grade 4 Prescribed Learning Outcomes	Grade 5 Prescribed Learning Outcomes	Grade 6 Prescribed Learning Outcomes
A1 Represent and describe whole numbers to 10 000 pictorially and symbolically.	**A1** Represent and describe whole numbers to 1 000 000.	**A1** Demonstrate an understanding of place value numbers: **(a)** greater than one million **(b)** less than one thousandth.
A2 Compare and order numbers to 10 000.	**May be reviewed but do not assess**	.
A3 Demonstrate an understanding of addition of numbers with answers to 10 000 and their corresponding subtractions (limited to 3 and 4-digit numerals) by: **(a)** using personal strategies for adding and subtracting **(b)** estimating sums and differences **(c)** solving problems involving addition and subtraction.		
A4 Explain the properties of 0 and 1 for multiplication, and the properties of 1 for division.		
May be explored informally but do not assess **GR. 3 estimate quantities less than 1000 using referents**	**A2** Use estimation strategies including: **(a)** front-end rounding **(b)** compensation **(c)** compatible numbers in problem-solving contexts.	**A2** Solve problems involving large numbers, using technology
A5 Describe & apply mental mathematics strategies, such as: **(a)** skip counting from a known fact **(b)** using doubling or halving **(c)** using doubling or halving and adding or subtracting one more group **(d)** using patterns in the 9s facts **(e)** using repeated doubling to determine basic multiplication facts up to 9 x 9 and related division facts.	**A3** Apply mental mathematics strategies & number properties, such as: **(a)** skip counting from a known fact **(b)** using doubling or halving **(c)** using patterns in the 9s facts **(d)** using repeated doubling or halving to determine *(recall)* answers for basic multiplication facts to 81 and related division facts.	**A3** Demonstrate an understanding of factors and multiples*(concretely, pictorially and symbolically)* by: **(a)** determining multiples & factors of numbers less than 100 **(b)** identifying prime and composite numbers **(c)** solving problems involving multiples.
A6 Demonstrate an understanding of multiplication (2 or 3-digit by 1- digit) to solve problems by: **(a)** using personal strategies with and without concrete materials **(b)** using arrays to represent multiplication **(c)** connecting concrete to symbolic representations **(d)** estimating products.	**A4** Apply mental mathematics strategies for multiplication, such as: **(a)** annexing then adding zero **(b)** halving and doubling **(c)** using distributive property.	**May be reviewed but do not assess**
	A5 Demonstrate an understanding of 2-digit by 2-digit multiplication *(concretely, pictorially and symbolically)* to solve problems.	
A7 Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by: **(a)** using personal strategies with & without concrete materials **(b)** estimating quotients **(c)** relating division to multiplication. *It is not intended that remainders be expressed as decimals or fractions.*	**A6** Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems.	
A8 Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to: **(a)** name & record fractions for the parts of a whole or a set **(b)** compare and order fractions **(c)** model and explain that for different wholes, two identical fractions may not represent the same quantity **(d)** provide examples where fractions are used.	**A7** Demonstrate an understanding of fractions by using concrete and pictorial representations to: **(a)** create sets of equivalent fractions **(b)** compare fractions with like & unlike denominators.	**A4** Relate improper fractions to mixed numbers *(using models).*

WNCP B.C. GRADE 4, 5 & 6 MATHEMATICS AT A GLANCE

NOTE: Text in ***italics*** is from the suggested achievement indicators.

STRAND: NUMBER (continued)

GENERAL OUTCOME: Develop number sense.

Grade 4 Prescribed Learning Outcomes	Grade 5 Prescribed Learning Outcomes	Grade 6 Prescribed Learning Outcomes
A9 Describe and represent decimals (tenths and hundredths) concretely, pictorially and symbolically.	**A8** Describe and represent decimals (tenths, hundredths and thousandths) concretely, pictorially & symbolically.	**May be reviewed but do not assess**
A10 Relate decimals to fractions (to hundredths).	**A9** Relate decimals to fractions (to thousandths).	
May be explored informally but do not assess	**A10** Compare and order decimals (to 1000s) by using: **(a)** benchmarks **(b)** place value **(c)** equivalent decimals.	
A11 Demonstrate an understanding of addition & subtraction of decimals (limited to 100ths) by: **(a)** using compatible numbers **(b)** estimating sums/differences **(c)** using mental math strategies to solve problems.	**A11** Demonstrate an understanding of addition and subtraction of decimal (limited to thousandths).	**A8** Demonstrate an understanding of multiplication and division of decimals (1-digit whole number multipliers and 1-digit natural number divisors).
	May be explored informally but do not assess	**A5** Demonstrate an understanding of ratio, concretely, pictorially and symbolically.
		A6 Demonstrate an understanding of percent (limited to whole numbers), concretely, pictorially and symbolically.
		A7 Demonstrate an understanding of integers, concretely, pictorially and symbolically.
		A9 Explain & apply the order of operations, excluding exponents, with and without technology (limited to whole numbers).

STRAND: STATISTICS & PROBABILITY (DATA ANALYSIS) Use Unit and Cumulative Reviews Selectively.

General Outcome: Collect, display and analyze data to solve problems.

D1 Demonstrate understanding of many-to-one correspondence.	**D1** Differentiate between first-hand & second-hand data.	
D2 Construct and interpret pictographs and bar graphs involving many-to-one correspondence to draw conclusions.	**D2** Construct and interpret double bar graphs to draw conclusions.	**D1** Construct, label and interpret line graphs to draw conclusions.
	May be explored informally but do not assess	**D2** Select, justify and use appropriate methods of collecting data, including: **(a)** questionnaires **(b)** experiments **(c)** databases **(d)** electronic media.
		D3 Graph collected data & analyze the graph to solve problems.

STRAND: STATISTICS & PROBABILITY (CHANCE AND UNCERTAINTY)

General Outcome: Use experimental or theoretical probabilities to represent & solve problems involving uncertainty.

May be explored informally but do not assess	**D3** Describe the likelihood of a single outcome occurring using words such as: **(a)** impossible **(b)** possible **(c)** certain.	**D4** Demonstrate an understanding of probability *(with and without technology)* by: **(a)** identifying all possible outcomes of a probability experiment **(b)** differentiating between experimental and theoretical probability determining the **(c)** theoretical probability **(d)** experimental probability of outcomes in a probability experiment **(e)** comparing experimental results with the theoretical probability for an experiment.
	D4 Compare the likelihood of two possible outcomes occurring using words such as: **(a)** less likely **(b)** equally likely **(c)** more likely.	

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STRAND: PATTERNS AND RELATIONS (PATTERNS)

General Outcome: Use patterns to describe the world and solve problems.

Grade 4 Prescribed Learning Outcomes	Grade 5 Prescribed Learning Outcomes	Grade 6 Prescribed Learning Outcomes
B1 Identify and describe patterns found in tables and charts, including a multiplication chart.	**B1** Determine the pattern rule to make predictions about subsequent elements *(with & without concrete materials).*	**May be reviewed but do not assess**
B2 Reproduce a pattern shown in a table or chart using concrete materials.	**May be or reviewed / explored but do not assess**	
B3 Represent and describe patterns and relationships using charts and tables to solve problems.		**B2** Represent and describe patterns and relationships using graphs and tables.
B4 Identify and explain mathematical relationships using charts and diagrams to solve problems.		**B1** Demonstrate an understanding of the relationships within tables of values to solve problems *(concretely, pictorially and symbolically).*

STRAND: PATTERNS & RELATIONS (VARIABLES & EQUATIONS)

General Outcome: Represent algebraic expressions in multiple ways.

B5 Express a given problem as an equation in which a symbol is used to represent an unknown number *(concretely, pictorially or symbolically).*	**May be reviewed but do not assess**	
B6 Solve one-step equations involving a symbol to represent an unknown number *(using manipulatives).*	**B2** Solve problems involving single-variable, one-step equations with whole number coefficients and whole number solutions.	**B3** Represent generalizations arising from number relationships using equations with letter variables.
	May be explored informally but do not assess	**B4** Demonstrate and explain the meaning of preservation of equality concretely, pictorially and symbolically.

STRAND: SHAPE AND SPACE (MEASUREMENT)

General Outcome: Use direct or indirect measurement to solve problems.

C1 Read and record time using digital and analog clocks, including 24-hour clocks.	**May be reviewed but do not assess**	
C2 READ AND RECORD CALENDAR DATES IN VARIOUS FORMATS.		
C3 Demonstrate an understanding of area of regular & irregular 2-D shapes by: **(a)** recognizing area is measured in square units **(b)** selecting & justifying referents for cm^2 or m^2 **(c)** estimating area by using referents for cm^2 or m^2 **(d)** determining and recording area (cm^2 or m^2) **(e)** constructing different rectangles for a given area (cm^2 or m^2) to demonstrate that many rectangles may have the same area.	**C1** Design and construct different rectangles given either perimeter or area, or both (whole numbers) and draw conclusions.	**C3** Develop and apply a formula for determining the: **(a)** perimeter of polygons **(b)** area of rectangles **(c)** volume of right rectangular prisms.
GR. 3 perimeter of regular and irregular shapes cm and m measuring / recording length, width, height	**C2** Demonstrate an understanding of measuring length (mm) by: **(a)** selecting and justifying referents for the unit mm **(b)** modelling and describing the relationship between mm and cm units, and between mm and m units.	
May be explored informally but do not assess	**C3** Demonstrate an understanding of volume by: **(a)** selecting & justifying referents for cm^3 or m^3 **(b)** estimating volume using referents cm^3 or m^3 **(c)** measuring and recording volume (cm^3 or m^3) **(d)** constructing rectangular prisms for a given volume.	

WNCP B.C. GRADE 4, 5 & 6 MATHEMATICS AT A GLANCE

NOTE: Text in ***italics*** is from the suggested achievement indicators.

STRAND: SHAPE AND SPACE (MEASUREMENT) (continued)

General Outcome: Use direct or indirect measurement to solve problems.

Grade 4 Prescribed Learning Outcomes	Grade 5 Prescribed Learning Outcomes	Grade 6 Prescribed Learning Outcomes
GR. 3 g and kg **May be explored informally but do not assess**	**C4** Demonstrate an understanding of capacity by: **(a)** describing the relationship between mL and L **(b)** selecting & justifying referents for mL or L units **(c)** estimating capacity by using referents for mL or L **(d)** measuring and recording capacity (mL or L).	**May be reviewed but do not assess**
	May be explored informally but do not assess	**C1** Demonstrate an understanding of angles by: **(a)** identifying examples of angles in the environment **(b)** classifying angles according to their measure **(c)** estimating the measure of angles using 45°, 90° and 180° as reference angles **(d)** determining angle measures in degrees **(e)** drawing and labelling angles when the measure is specified.
		C2 demonstrate the sum of interior angles is: **(a)** 180° in a triangle **(b)** 360° in a quadrilateral.

STRAND: SHAPE AND SPACE (3-D OBJECTS & 2-D SHAPES)

General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.

C4 Describe and construct rectangular and triangular prisms.	**C5** Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are: **(a)** parallel **(b)** intersecting **(c)** perpendicular **(d)** vertical **(e)** horizontal.	**May be reviewed but do not assess**
GR. 3 triangles, quadrilaterals, pentagons, hexagons, octagons	**C6** Identify and sort quadrilaterals, including: **(a)** rectangles **(b)** squares **(c)** trapezoids **(d)** parallelograms **(e)** rhombuses according to their attributes.	**C4** Construct and compare triangles in different orientations including: **(a)** scalene **(b)** isosceles **(c)** equilateral **(d)** right **(e)** obtuse **(f)** acute
GR. 3 sort regular & irregular polygons according to number of sides	**May be explored informally but do not assess**	**C5** Describe and compare the sides and angles of regular and irregular polygons.

STRAND: SHAPE AND SPACE (TRANSFORMATIONS)

General Outcome: Describe and analyze position and motion.

C5 Demonstrate an understanding of line symmetry *(with and without manipulatives)* by: **(a)** identifying **(b)** creating symmetrical 2-D shapes **(c)** drawing one or more lines of symmetry in a 2-D shape.	**May be reviewed but do not assess**	
May be explored informally but do not assess	**C7** Perform a single transformation (translation, rotation or reflection) of a 2-D shape (with and without technology) and draw and describe the image.	**C6** Perform a combination of translation(s), rotation(s) and/or reflection(s) of a single 2-D shape, with and without technology, and draw and describe the image.
	C8 Identify a single transformation including a translation, rotation and reflection of 2-D shapes.	**C7** Perform a combination of successive transformations of 2-D shapes to create a design, and identify and describe the transformations.
	May be explored informally but do not assess	**C8** Identify & plot points in the first quadrant of a cartesian plane (whole number ordered pairs).
		C9 Perform and describe single transformations of a 2-D shape in the first quadrant of a Cartesian plane (limited to whole number vertices).