

WNCP B.C. GRADE 4 & 5 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
A1 Represent & describe whole numbers to 10 000 pictorially and symbolically.	A1 Represent and describe whole numbers to 1 000 000.
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 & their corresponding subtractions (limited to 3 & 4-digit numerals) by: <ul style="list-style-type: none"> (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; the property of 1 for division.	
GR. 3: estimate sums and differences (2-digit numerals) estimate quantities less than 1000 using referents	
A5 Describe and apply mental mathematics strategies, such as: <ul style="list-style-type: none"> (a) skip counting from a known fact (b) using doubling or halving (c) using doubling or halving & adding or subtracting one more group (d) using patterns in the 9s facts (e) using repeated doubling to determine basic multiplication facts to 9 x 9 and related division facts. 	A2 Use estimation strategies including: <ul style="list-style-type: none"> (a) front-end rounding (b) compensation (c) compatible numbers in problem-solving contexts.
A6 Demonstrate an understanding of multiplication (2 or 3-digit by 1-digit) to solve problems by: <ul style="list-style-type: none"> (a) using personal strategies for multiplication with & without concrete materials (b) using arrays to represent multiplication (c) connecting concrete representations to symbolic representations (d) estimating products. 	A3 Apply mental mathematics strategies and number properties, such as: <ul style="list-style-type: none"> (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 (<i>recall</i>) answers for basic multiplication facts to 81 and related division facts.
A7 Demonstrate an understanding of division (1-digit divisor and up to 2-digit dividend) to solve problems by: <ul style="list-style-type: none"> (a) using personal strategies for dividing with & without concrete materials (b) estimating quotients (c) relating division to multiplication. 	A4 Apply mental mathematics strategies for multiplication such as: <ul style="list-style-type: none"> (a) annexing then adding zero (b) halving and doubling (c) using distributive property.
A8 Demonstrate an understanding of fractions less than or equal to one by using concrete and pictorial representations to: <ul style="list-style-type: none"> (a) name and 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 of where fractions are used. 	A5 Demonstrate an understanding of multiplication (2-digit by 2-digit) to solve problems (<i>concretely, pictorially and symbolically</i>).
	A6 Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit) and interpret remainders to solve problems (<i>remainders may be expressed as decimals or fractions</i>).
	A7 Demonstrate an understanding of fractions by using concrete and pictorial representations to: <ul style="list-style-type: none"> (a) create sets of equivalent fractions (b) compare fractions with like and unlike denominators.

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STRAND: NUMBER (continued)

Grade 4 Prescribed Learning Outcomes	Grade 5 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 and symbolically.
A10 Relate decimals to fractions (to hundredths) <i>concretely, pictorially & symbolically</i> .	A9 Relate decimals to fractions (to thousandths) <i>concretely, pictorially & symbolically</i> .
May be explored informally but do not assess	A10 Compare and order decimals (to thousandths) by using: (a) benchmarks (b) place value (c) equivalent decimals.
A11 Demonstrate an understanding of addition and subtraction of decimals (limited to 100ths) by: (a) using compatible numbers (b) estimating sums and differences (c) using mental math strategies to solve problems.	A11 Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).

STRAND: STATISTICS & PROBABILITY (DATA ANALYSIS)

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

D1 Demonstrate an understanding of many-to-one correspondence.	May be reviewed but do not assess
May be explored informally but do not assess	D1 Differentiate between first-hand and 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.

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 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

- B1** Identify and describe patterns found in tables and charts, including a multiplication chart.
- B2** Reproduce a pattern shown in a table or chart using concrete materials.
- B3** Represent and describe patterns and relationships using charts and tables to solve problems.

May be explored informally but do not assess

- B4** Identify and explain mathematical relationships using charts and diagrams to solve problems.

Grade 5 Prescribed Learning Outcomes

May be reviewed but do not assess

- B1** Determine the pattern rule to make predictions about subsequent elements (*with and without concrete materials*).

May be reviewed but do not assess

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.

STRAND: SHAPE AND SPACE (MEASUREMENT)

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

- C1** Read & record time using digital and analog clocks, including 24-hour clocks.
- C2** Read and record calendar dates in a variety of formats.

May be reviewed but do not assess

- C3** Demonstrate an understanding of area of regular and irregular 2-D shapes by:
 - (a) recognizing that area is measured in square units
 - (b) selecting and justifying referents for the units 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) in order to demonstrate that many may have the same area.

- C1** Design and construct different rectangles given either perimeter or area, or both (whole numbers) and draw conclusions.

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STRAND: SHAPE AND SPACE (MEASUREMENT) (continued)

Grade 4 Prescribed Learning Outcomes

- GR. 3: cm and m**
- measuring and recording length, width and height
 - perimeter of regular and irregular shapes

May be explored informally but do not assess

Grade 5 Prescribed Learning Outcomes

- 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.
- C3** Demonstrate an understanding of volume by:
 (a) selecting and justifying referents for cm^3 or m^3 units
 (b) estimating volume by using referents for cm^3 or m^3
 (c) measuring and recording volume (cm^3 or m^3)
 (d) constructing rectangular prisms for a given volume.
- C4** Demonstrate an understanding of capacity by:
 (a) describing the relationship between mL and L
 (b) selecting and 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).

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.

- GR. 3: triangle, quadrilateral, pentagon, hexagon, octagon**
- sort regular & irregular polygons according to # of sides

- C6** Identify and sort quadrilaterals, including:
 (a) rectangles (b) squares (c) trapezoids (d) parallelograms (e) rhombuses according to their attributes.

STRAND: SHAPE AND SPACE (TRANSFORMATIONS)

General Outcome: Describe and analyze position and motion.

- C5** Demonstrate an understanding of line symmetry by:
 (a) identifying symmetrical 2-D shapes
 (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.
- C8** Identify a single transformation including a translation, rotation and reflection of 2-D shapes.