

WNCP B.C. MATHEMATICS AT A GLANCE OVERVIEW – GRADE 7

Mathematical Processes

C = Communication

PS = Problem Solving

V = Visualization

R = Reasoning

CN = Connections

T = Technology

ME = Mental Mathematics and Estimation

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

STRAND: NUMBER		Mathematical Processes
General Outcome: Develop number sense		
<i>It is expected that students will:</i>		
A1	Determine and explain why a number is divisible by 2, 3, 4, 5, 6, 8, 9, or 10 and why a number cannot be divided by 0.	C R
A2	Demonstrate an understanding of the addition, subtraction, multiplication and division of decimals (for more than 1-digit divisors or 2-digit multipliers, the use of technology is expected) to solve problems.	ME PS T
A3	Solve problems involving percents from 1% to 100%.	C CN PS R T
A4	Demonstrate an understanding of the relationship between positive repeating decimals and positive fractions, and positive terminating decimals and positive fractions.	C CN R T
A5	Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators, concretely, pictorially and symbolically (limited to positive sums and differences).	C CN ME PS RV
A6	Demonstrate an understanding of addition and subtraction of integers, concretely, pictorially and symbolically.	C CN PS RV
A7	Compare and order positive fractions, positive decimals (to thousandths) and whole numbers by using: (a) benchmarks (b) place value (c) equivalent fractions and/or decimals.	CN RV

STRAND: STATISTICS & PROBABILITY (DATA ANALYSIS)		Mathematical Processes
General Outcome: Collect, display and analyze data to solve problems.		
D1	Demonstrate an understanding of central tendency and range by: (a) determining the measures of central tendency (mean, median, mode) and range (b) determining the most appropriate measures of central tendency to report findings.	C PS R T
D2	Determine the effect on the mean, median and mode when an outlier is included in a data set.	C CN PS R
D3	Construct, label and interpret circle graphs to solve problems.	C CN PS RVT
STRAND: STATISTICS & PROBABILITY (CHANCE & UNCERTAINTY)		Mathematical Processes
General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.		
D4	Express probabilities as ratios, fractions and percents.	C CN RVT
D5	Identify the sample space (where the combined sample space has 36 or fewer elements) for a probability experiment involving two independent events.	C ME PS
D6	Conduct a probability experiment to compare the theoretical probability (determined using a tree diagram, table or another graphic organizer) and experimental probability of two independent events (<i>with & without technology</i>).	C PS R T

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STRAND: PATTERNS AND RELATIONS (PATTERNS)		Mathematical Processes	
General Outcome: Use patterns to describe the world and solve problems.			
B1	Demonstrate an understanding of oral and written patterns and their equivalent linear relations.	C CN	R
B2	Create a table of values from a linear relation, graph the table of values, and analyze the graph to draw conclusions and to solve problems.	C CN	R V
STRAND: PATTERNS & RELATIONS (VARIABLES & EQUATIONS)		Mathematical Processes	
General Outcome: Represent algebraic expressions in multiple ways.			
B3	Demonstrate an understanding of preservation of equality by: (a) modeling preservation of equality concretely, pictorially, & symbolically (b) applying preservation of equality to solve equations.	C CN	PS R V
B4	Explain the difference between an expression and an equation.	C CN	
B5	Evaluate an expression given the value of the variable(s).	CN	R
B6	Model and solve problems that can be represented by one-step linear equations of the form $x + a = b$, concretely, pictorially and symbolically, where a and b are integers.	CN	PS R V
B7	Model and solve problems that can be represented by linear equations of the form: $ax + b = c$ $ax = b$ $\frac{x}{a} = b \quad a \neq 0$ concretely, pictorially and symbolically, where a, b and c are whole numbers.	CN	PS R V

STRAND: SHAPE AND SPACE (MEASUREMENT)		Mathematical Processes	
General Outcome: Use direct or indirect measurement to solve problems.			
C1	Demonstrate an understanding of circles by: (a) describing the relationships among radius, diameter & circumference of circles (b) relating circumference to pi (c) determining the sum of the central angles (d) constructing circles with a given radius or diameter (e) solving problems involving the radii, diameters & circumferences of circles.	C CN	R V
C2	Develop and apply a formula for determining the area of: (a) triangles (b) parallelograms (c) circles.	CN	PS R V
STRAND: SHAPE AND SPACE (3-D OBJECTS & 2-D SHAPES)		Mathematical Processes	
General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.			
C3	Perform geometric constructions including: (a) perpendicular line segments (b) parallel line segments (c) perpendicular bisectors (d) angle bisectors.	CN	R V
STRAND: SHAPE AND SPACE (TRANSFORMATIONS)		Mathematical Processes	
General Outcome: Describe and analyze position and motion.			
C4	Identify and plot points in the four quadrants of a Cartesian plane using integral ordered pairs.	C CN	V
C5	Perform and describe transformations (translations, rotations or reflections) of a 2-D shape in all four quadrants of a Cartesian plane (limited to integral number vertices).	CN	PS V T