

# WNCP B.C. MATHEMATICS AT A GLANCE OVERVIEW – GRADE 8

## Mathematical Processes

C = Communication  
R = Reasoning

PS = Problem Solving  
CN = Connections

V = Visualization  
T = Technology

ME = Mental Mathematics and Estimation

<b>STRAND: NUMBER</b>		<b>Mathematical Processes</b>
<b>General Outcome: Develop number sense</b> <i>It is expected that students will:</i>		
<b>A1</b>	Demonstrate an understanding of perfect squares and square roots, concretely, pictorially and symbolically (limited to whole numbers)	C CN RV
<b>A2</b>	Determine the approximate square root of numbers that are not perfect squares (limited to whole numbers).	C CN ME RT
<b>A3</b>	Demonstrate an understanding of percents greater than or equal to 0%.	CN PS RV
<b>A4</b>	Demonstrate an understanding of ratio and rate.	C CN V
<b>A5</b>	Solve problems that involve rates, ratios and proportional reasoning	C CN PS R
<b>A6</b>	Demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially and symbolically.	C CN ME PS
<b>A7</b>	Demonstrate an understanding of multiplication and division of integers, concretely, pictorially and symbolically.	C CN PS RV

<b>STRAND: STATISTICS &amp; PROBABILITY (DATA ANALYSIS)</b>		<b>Mathematical Processes</b>
<b>General Outcome: Collect, display and analyze data to solve problems.</b>		
<b>D1</b>	Critique ways in which data is presented.	C RVT
<b>STRAND: STATISTICS &amp; PROBABILITY (CHANCE &amp; UNCERTAINTY)</b>		<b>Mathematical Processes</b>
<b>General Outcome: Use experimental or theoretical probabilities to represent and solve problems involving uncertainty.</b>		
<b>D2</b>	Solve problems involving the probability of independent events.	C CN PS T

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<b>STRAND: PATTERNS AND RELATIONS (PATTERNS)</b> <b>General Outcome: Use patterns to describe the world and solve problems.</b>		Mathematical Processes
B1	Graph and analyze two-variable linear relations.	C ME PS R V T
<b>STRAND: PATTERNS &amp; RELATIONS (VARIABLES &amp; EQUATIONS)</b> <b>General Outcome: Represent algebraic expressions in multiple ways.</b>		Mathematical Processes
B2	Model and solve problems using linear equations of the form: (a) $ax = b$ (b) $\frac{x}{a} = b, a \neq 0$ (c) $ax + b = c$ (d) $\frac{x}{a} + b = c, a \neq 0$ (e) $a(x + b) = c$ concretely, pictorially and symbolically, where $a, b,$ and $c$ are integers.	C CN PS V

<b>STRAND: SHAPE AND SPACE (MEASUREMENT)</b> <b>General Outcome: Use direct or indirect measurement to solve problems.</b>		Mathematical Processes
C1	Develop and apply the Pythagorean theorem to solve problems.	CN PS R V T
C2	Draw and construct nets for 3-D object.	C CN PS V
C3	Determine the surface area of: (a) right rectangular prisms (b) right triangular prisms (c) right cylinders to solve problems.	C CN PS R V
C4	Develop and apply formulas for determining the volume of right prisms and right cylinders.	C CN PS R V
<b>STRAND: SHAPE AND SPACE (3-D OBJECTS &amp; 2-D SHAPES)</b> <b>General Outcome: Describe the characteristics of 3-D objects and 2-D shapes, and analyze the relationships among them.</b>		Mathematical Processes
C5	Draw and interpret top, front, and side views of 3-D objects composed of right rectangular prisms.	C CN R V T
<b>STRAND: SHAPE AND SPACE (TRANSFORMATIONS)</b> <b>General Outcome: Describe and analyze position and motion.</b>		Mathematical Processes
C6	Demonstrate an understanding of tessellations by: (a) explaining the properties of shapes that make tessellating possible (b) creating tessellations (c) identifying tessellations in the environment	C CN PS V T