Skill	Grade 8	Grade 9	W & A 10	W & A 20	W & A 30
Comparing & Ordering Numbers		**N9.2:** Demonstrate understanding of rational numbers including: comparing and ordering; relating to other types of numbers; solving situational questions.			
Order of Operations		**N9.2:** Demonstrate understanding of rational numbers including: comparing and ordering; relating to other types of numbers; solving situational questions.			
Fractions ↔ Decimals ↔ Percents	**N8.2:** Expand and demonstrate understanding of percents greater than or equal to 0% (including fractional and decimal percents) concretely, pictorially, and symbolically. **N8.4:** Demonstrate understanding of multiplying and dividing positive fractions and mixed numbers, concretely, pictorially, and symbolically.				
Exponents & Radicals	**N8.1:** Demonstrate understanding of the square and principle square root of whole numbers concretely or pictorially and symbolically. **SS8.1:** Demonstrate understanding of the Pythagorean Theorem concretely or pictorially and symbolically and by solving problems.	**N9.1:** Demonstrate (concretely, pictorially, and symbolically) understanding of powers with integral bases (excluding base 0) and whole number exponents including: representing using powers; evaluating powers; powers with an exponent of zero; solving situational questions. **N9.3:** Extend understanding of square roots to include the square root of positive rational numbers.			
Preservation of Equality (integrated within course)			**WA10.1:** applying formulas for perimeter, area, Pythagorean Theorem, income & primary trig ratios	**WA20.1:** Expand and apply understanding of the preservation of equality including solving problems that involve the manipulation and application of formulae for volume and capacity, surface area, slope and rate of change, simple interest, and finance charges.	
Financial Math			**WA10.10:** proportional reasoning involving currency and unit pricing and currency exchange **WA10.11:** Demonstrate understanding of income including: wages; salary; contracts; commissions; piecework; self-employment; gross pay; net pay	**WA20.6:** Demonstrate understanding of personal budgets and their importance for financial planning. **WA20.7:** Demonstrate understanding of compound interest **WA20.8:** Demonstrate understanding of financial institution services used to access and manage personal finances, including credit options	**WA30.6:** Demonstrate understanding of options for acquiring a vehicle including: purchasing without credit; purchasing with credit; leasing; leasing to purchase. **WA30.7:** Explore and critique the viability of small business options with respect to: expenses; sales; profit or loss.
Polynomials		**P9.4:** Demonstrate understanding of polynomials (limited to polynomials of degree less than or equal to 2) including: modeling; generalizing strategies for addition, subtraction, multiplication, and division; analyzing; relating to context; comparing for equivalency			
Linear Relations, Equations & Functions	**P8.1:** Demonstrate understanding of linear relations concretely, pictorially (including graphs), physically, and symbolically. **P8.2:** Model and solve problems using linear	**P9.1:** Demonstrate understanding of linear relations including: graphing; analyzing; interpolating and extrapolating; solving situational questions		**WA20.9:** Demonstrate concretely, pictorially, and symbolically (with and without the use of technology) an understanding of slope with	**WA30.8:** Extend and apply understanding of linear relations including: patterns and trends; graphs; tables of values; equations; interpolation and extrapolation;

	equations of the form: ax = b; x/a = b, a ≠ 0; ax + b = c; x/a + b = c, a ≠ 0; a(x + b) = c concretely, pictorially, and symbolically, where a, b, and c are integers.	**P9.2:** Model and solve situational questions using linear equations of the form:ax = b; x/a = b, a ≠ 0; ax + b = c; x/a + b = c, a ≠ 0; ax = b + cx; a(x + b) = c; ax + b = cx + d; a(bx + c) = d(ex + f); a/x = b, x ≠ 0 where a, b, c, d, e, and f are rational numbers **P9.3:** Demonstrate understanding of single variable linear inequalities with rational coefficients including: solving inequalities; verifying; comparing; graphing.		respect to: rise over run; rate of change; solving problems.	problem solving.
Polynomial Equations & Functions, Inequalities					
Systems of Equations & Inequalities					
Radical Equations & Expressions					
Rational Equations & Expressions					
Exponential & Logarithmic Equations & Functions					
Measurement			**WA10.3:** Demonstrate using concrete, and pictorial models, and symbolic representations, understanding of measurement systems including: The Système International (SI); The British Imperial system; The US customary system. **WA10.4:** Demonstrate, using concrete and pictorial models, and symbolic representations, understanding of linear measurement, including units in the SI and Imperial systems of measurement.		**WA30.2:** Demonstrate concretely, pictorially, and symbolically an understanding of limitations of measuring instruments including: precision; accuracy; uncertainty; tolerance.
Angles			**WA10.9:** Demonstrate understanding of angles including: drawing and sketching; replicating and constructing; bisecting; relating to parallel, perpendicular, and transversal lines; solving problems		
Solving Triangles & Trigonometric Functions	**SS8.1:** Demonstrate understanding of the Pythagorean Theorem concretely or pictorially and symbolically and by solving problems.		**WA10.6:** Apply understanding of the Pythagorean Theorem to solve problems. **WA10.8:** Demonstrate an understanding of primary trigonometric ratios (sine, cosine, and tangent).	**WA20.4:** Solve problems that involve at least two right triangles.	**WA30.3:** Solve problems that involve the sine law and cosine law, excluding the ambiguous case.
Shapes/Objects		**SS9.1:** Demonstrate understanding of circle properties including: perpendicular line segments from the centre of a circle to a chord bisect the chord; inscribed angles subtended by the same arc have the same measure; the measure of a central angle is twice the measure of an inscribed angle subtending the same arc; tangents to a circle are perpendicular to the radius ending at the point of tangency **SS9.2:** Extend understanding of area to surface area of right rectangular prisms, right cylinders, right triangular prisms, to composite 3-D objects	**WA10.5:** Demonstrate using concrete and pictorial models, and symbolic representations, understanding of area of 2-D shapes and surface area of 3-D objects including units in SI and Imperial systems of measurement.	**WA20.3:** Extend and apply understanding of surface area, volume, and capacity using concrete and pictorial models and symbolic representations (SI or imperial units of measurement). **WA20.5:** Extend and apply understanding of 3-D objects including: top, bottom, and side views; exploded views; component parts; scale diagrams.	**WA30.4:** Extend and apply understanding of the properties of triangles, quadrilaterals, and regular polygons to solve problems.

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Similarity	**N8.3:** Demonstrate understanding of rates, ratios, and proportional reasoning concretely, pictorially, and symbolically	**SS9.3**: Demonstrate understanding of similarity of 2-D shapes	**WA10.7:** Demonstrate understanding of similarity of convex polygons, including regular and irregular polygons	**WA20.10:** Extend and apply proportional thinking to solve problems that involve unit analysis and scale.	
Translations		**SS9.4:** Demonstrate understanding of line and rotation symmetry			**WA30.5:** Extend and apply understanding of transformations on 2-D shapes and 3-D objects including: translations; rotations; reflections; dilations.
Sequences and Series					
Data Analysis		**SP9.1:** Demonstrate understanding of the effect of: bias; use of language • ethics; cost; time and timing; privacy; cultural sensitivity; population or sample on data collection. **SP9.2:** Demonstrate an understanding of the collection, display, and analysis of data through a project.		**WA20.11:** Extend and apply understanding of representing data using graphs including: bar graphs; histograms; line graphs; circle graphs	**WA30.9:** Extend and apply understanding of measures of central tendency to solve problems including: mean; median; mode; weighted mean; trimmed mean. **WA30.10:** Demonstrate understanding of percentiles.
Permutations & Combinations					
Probability		**SP9.3:** Demonstrate an understanding of the role of probability in society. **SP9.4:** Research and present how First Nations and Métis peoples, past and present, envision, represent, and make use of probability and statistics.			**WA30.11:** Extend and apply understanding of probability.
Reasoning			**WA10.2:** Analyze puzzles and games that involve spatial reasoning using problem solving strategies.	**WA20.2:** Demonstrate the ability to analyze puzzles and games that involve numerical reasoning and problem solving strategies.	**WA30.1:** Analyze puzzles and games that involve logical reasoning using problem solving strategies.
Limit & Continuity					
Differentiation					
Integration					
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