**Summarized Outcomes across Areas of Study**

**for Grades 6-9**



**February 2013**

**Arts Education**

**Mathematics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **K-12 Goals:** logical thinking, number sense, spatial sense, and mathematics as a human endeavour. | **Grade 6** | **Grade 7** | **Grade 8** | **Grade 9** |
| **Number Strand** | * Demonstrate understanding of place value for numbers greater than 1 million and less than one thousandth. * Demonstrate understanding of factors and multiples of numbers less than 100, relating factors and multiples to multiplication and division, and determining and relating to prime and composite numbers. * Demonstrate understanding of the order of operations on whole numbers. * Extend understanding of multiplication and division to decimals. * Demonstrate understanding of percent. * Demonstrate understanding of Integers. * Extend understanding of fractions to improper fractions and to mixed numbers. * Demonstrate an understanding of ratio. * Research and present how First Nations and Métis peoples envision, represent, and use quantity. | * Demonstrate an understanding of division through the development and application of divisibility strategies for 2, 3, 4, 5, 6, 8, 9, and 10, and involving zero. * Expand and demonstrate an understanding of addition, subtraction, multiplication, and division of decimals to greater numbers of places, and the order of operations. * Demonstrate an understanding of the relationships between positive decimals, positive fractions, and whole numbers. * Expand and demonstrate an understanding of percent including fractional percents between 1% and 100%. * Demonstrate an understanding of adding and subtracting positive fractions and mixed numbers, with like and unlike denominators. * Demonstrate an understanding of addition and subtraction of integers. | * Demonstrate an understanding of square and principle square root of whole numbers. * Expand and demonstrate an understanding of percents greater than or equal to 0%. * Demonstrate an understanding of rates, ratios, and proportional reasoning. * Demonstrate an understanding of multiplying and dividing positive fractions and mixed numbers. * Demonstrate an understanding of multiplication and division of integers. | * Demonstrate an understanding of powers with integral bases (excluding base 0) and whole number exponents. * Demonstrate an understanding of rational numbers. * Extend understanding of square roots to include the square root of positive rational numbers. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Patterns and Relations Strand** | * Extend understanding of patterns and relationships in tables of values and graphs. * Extend understanding of preservation of equality. * Extend understanding of patterns and relationships using expressions and equations involving variables. | * Demonstrate an understanding of the relationships between oral and written patterns, graphs, and linear relations. * Demonstrate an understanding of equations and expressions. * Demonstrate an understanding of one-and two-step linear equations. * Demonstrate an understanding of linear equations by modeling problems as a linear equation and solving the problems. | * Demonstrate an understanding of linear relations. * Model and solve problems using linear equations. | * Demonstrate an understanding of linear relations. * Model and solve situational problems using linear equations * Demonstrate an understanding of single variable linear inequalities with rational coefficients. * Demonstrate an understanding of polynomials. |
| **Shape and Space Strand** | * Demonstrate an understanding of angles. * Extend and apply understanding of perimeter of polygons, area of rectangles, and volume of right rectangular prisms. * Demonstrate an understanding of regular and irregular polygons. * Demonstrate an understanding of the first quadrant of the Cartesian plane and ordered pairs with whole number coordinates. * Demonstrate an understanding of single and combinations of transformations of 2-D shapes. | * Demonstrate an understanding of circles including circumference and central angles. * Develop and apply formulas for determining the area of triangles, parallelograms, and circles. * Demonstrate an understanding of 2-D relationships involving lines and angles. * Demonstrate an understanding of Cartesian plane and ordered pairs with integral coordinates. * Expand and demonstrate an understanding of transformations 2-D shapes in all four quadrants of the Cartesian plane. | * Demonstrate an understanding of the Pythagorean Theorem. * Demonstrate an understanding of the surface area of 3-D objects limited to right prisms and cylinders. * Demonstrate an understanding of volume limited to prisms and cylinders. * Demonstrate an understanding of tessellation. | * Demonstrate an understanding of circle properties. * Extend understanding of area to surface area of right rectangular prisms, right cylinders, right triangular prisms, and composite 3-D objects. * Demonstrate an understanding of similarity of 2-D objects. * Demonstrate an understanding of line and rotation symmetry. |
| **Statistics and Probability Strand** | * Extend understanding of data analysis. * Demonstrate an understanding of probability. | * Demonstrate an understanding of the measures of central tendency and range for sets of data. * Demonstrate an understanding of circle graphs. * Demonstrate an understanding of the theoretical and experimental probabilities for two independent events where the combined sample space has 36 or fewer elements. | * Analyze the modes of displaying data and the reasonableness of conclusions. * Demonstrate an understanding of the probability of independent events. | * Demonstrate an understanding of various factors affecting data collection. * Demonstrate an understanding of collection, display, and analysis of data. * Demonstrate an understanding of the role of probability in society * Research and present how First Nations and Métis peoples envision, represent, and make use of probability and statistics. |

Refer to curriculum for complete outcomes and indicators.