Sault Area Middle School Math 8 Content Syllabus

Marking Period 1 (Real numbers and linear equations)

1) Rational numbers as decimals
2) Understanding irrational numbers
3) Compare and order real numbers
4) Evaluate square roots and cube roots
5) Solve equations using square roots and cube roots
6) Use properties of integer exponents
7) More properties of exponents
8) Use powers of 10 to estimate quantities
9) Understand scientific notation
10) Operations with numbers in scientific notation
11) Combine like terms to solve equations
12) Solve equations with variables on both sides
13) Solve multi-step equations
14) Equations with no solutions or infinitely many solutions
15) Compare proportional relationships
16) Connect proportional relationships and slope
17) Analyze linear equations $y = mx$
18) Understand the y-intercept of a line
19) Analyze linear equations $y = mx + b$

Key Vocabulary: cube root, irrational number, negative exponent property, perfect cube, perfect square, power of powers property, power of products property, product of powers properties, quotient of powers properties, scientific notation, square root, zero exponent property, slope of a line, slope-intercept form, y-intercept

Marking Period 2 (Functions and Bivariate Data)

1) Understand relations and functions
2) Connect representations of functions
3) Compare linear and non-linear functions
4) Construct functions to model linear relationships
5) Intervals of increase and decrease
6) Sketch functions from verbal descriptions
7) Construct and interpret scatter plots
8) Analyze linear associations
9) Use linear models to make predictions
10) Interpret two-way frequency tables
11) Interpret two-way relative frequency tables

Key Vocabulary: Constant rate of change, function, initial value, interval, linear function, nonlinear function, qualitative graph, relation, categorical data, cluster, gap, measurement data, negative association, outlier, positive association, relative frequency table, scatter plot, trend line

Marking Period 3 (Systems of linear equations, transformations, and similar figures)

1) Estimate solutions by inspection
2) Solve systems by graphing
3) Solve systems by substitution
4) Solve systems by elimination
5) Analyze translations
6) Analyze reflections
7) Analyze rotations
8) Compose transformations
9) Understand congruent figures
10) Describe dilations
11) Understand similar figures
12) Angles, lines, and transversals
13) Interior and exterior angles of triangles
14) Angle-angle triangle similarity

Key Vocabulary: Solution of a system of linear equations, system of linear equations, alternate interior angles, angle of rotation, center of rotation, congruent, corresponding angles, dilation, enlargement, exterior angle of a triangle, image, line of reflection, reduction, reflection, remote interior angles, rotation, same-side interior angles, scale factor, similar, transformation, translation, transversal

Marking Period 4 (Understand and apply the Pythagorean Theorem, surface area, and volume)

1) Understand the Pythagorean Theorem
2) Understand the convers of the Pythagorean Theorem
3) Apply the Pythagorean Theorem to solve problems
4) Find distance in the coordinate plane
5) Find surface area of three-dimensional figures
6) Find volume of cylinders
7) Find volume of cones
8) Find volume of spheres

Key Vocabulary: Pythagorean Theorem, converse of the Pythagorean theorem, hypotenuse, leg, proof, composite figure, cone, cylinder, sphere