Diocese of Bridgeport – Math Standards – Grade 8

BASE TEN VALUE, OPERATIONS, and THEORY

	STANDARD	SKILLS	VOCABULARY
BVOT 8.1	Understand that non rational numbers exist and use rational numbers to approximate them	·Understand that every number has a decimal notation ·Define irrational numbers ·Understand that all irrational numbers have a decimal expansion ·Understand that all numbers are real numbers	Fraction, decimal, repeating decimal, terminating decimal, integer, rational, irrational number, integer, decimal expansion, nonterminating decimal, real numbers, value, cube, square, perfect cube, square root, base
BVOT 8.1A	Compare the size of real numbers	·Use approximations and decimal notation to compare the size of irrational numbers ·Locate irrational numbers on a number line based on rational approximations ·Estimate the value of expressions ·Compare and order all real numbers, using estimation and technology as necessary ·Solve one and two step word problems involving the value of integers and rational numbers	Real numbers, approximation, number line, value, greater than, less than, equal to, equivalent,
BVOT 8.2	Solve multistep linear equations	·Solve linear equations with one variable ·Solve pairs of simultaneous linear equations ·Combine like terms to solve addition and subtraction equations ·Combine like terms with negative coefficients to solve problems ·Solve equations with variables on both sides ·Solve multistep world problems with multistep equations	Variable, decimal, linear, nonlinear, equation, simultaneous, root, powers of products property, powers of powers property, quotient of powers property, factor, quotient, sum, difference, dividend, divisor, product, negative exponent property, reciprocal, numerator, denominator, distributive property
BVOT 8.2A	Graph and compare relationships	·Analyze equations to determine relationships ·Interpret unit rate as the slope of the graph ·Compare two different proportional relationships represented in different ways; ex. Compare a distance-time graph to a distance-time equation to determine which object has a higher speed ·Use similar triangles to explain slope relationships ·Write equations to describe relationships ·Graph equations	Slope, slope-intercept form, y- intercept, inverse operations, like terms, proportion, variables, expression

BVOT 8.3	Know and apply the properties of integers and exponents	·Generate equivalent numerical expressions ·Use square root and cube root symbols to represent solutions to equations ·Apply properties of integer exponents to generate equivalent expressions ·Compare and order integers to solve problems ·Express very small or very larger numbers using scientific notation ·Convert between standard and scientific notation and vice versa	Cube, perfect cube, square root, perfect square, imperfect square, zero exponent property, powers of powers property, scientific notation, terminating, repeating, factor, multiple, base, integer, power, scientific notation , standard notation
BVOT 8.3A	Perform operations with numbers expressed in scientific notation	·Use scientific notation to express both very large and very small numbers ·Use numbers expressed in the form of a single digit times an integer power of ten ·Estimate using powers of ten ·Express how many times larger one number is than another using powers of ten ·Choose units appropriate for measurement of very small and very large quantities ·Solve multistep world problems involving numbers expressed in scientific notation	Cube, perfect cube, square root, perfect square, imperfect square, zero exponent property, powers of powers property, scientific notation, terminating, repeating, factor, multiple, base, integer, power, scientific notation , standard notation

Diocese of Bridgeport – Math Standards – Grade 8

DIOCESE OF BRIDGEPORT
CATHOLIC SCHOOLS
FORMING hearts. INFORMING minds. TRANSFORMING lives.

RATIOS, RELATIONSHIPS, and FUNCTIONS

	STANDARD	SKILLS	VOCABULARY
RRF 8.1	Design, interpret and compare functions	·Understand that a function is a rule that assigns to each input, exactly one output ·Understand that the graph of a function is the set of ordered pairs consisting of one input and one output ·Compare the properties of two functions each represented in a different way ·Use an equation of a linear model to solve problems in context ·Interpret slope and intercept ·Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line ·Give examples of functions that are not linear	Function, rule, input, output, ordered pairs, equation, model, intercept, slope, linear function
RRF 8.1A	Use functions to model relationships	·Construct a function to model a linear relationship between two quantities ·Determine the rate of change and initial value of the function from a description of a relationship or two values (including reading them from a table or graph) ·Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or table values ·Qualitatively describe the functional relationship between two quantities by analyzing a graph ·Sketch a graph that exhibits the qualitative features of a function that has been described verbally ·Identify the y intercept of a graph ·Identify whether the y intercept is negative or positive	Function, linear relationship, rate of change, y intercept, negative, positive
RRF 8.2	Analyze and solve systems of linear equations	·Estimate solutions by inspection ·Solve systems of equations by graphing ·Solve systems by substitution ·Solve systems by elimination	Linear equation, system, substitution, elimination

Diocese of Bridgeport – Math Standards – Grade 8

GEOMETRY

	STANDARD	SKILLS	VOCABULARY
G 8.1	Solve real world problems involving surface area and volume of cylinders, cones, and spheres	·Know and apply the formulas for surface area of cones, cylinders, pyramids and spheres and use them to solve real world problems ·Know and apply the formulas for volume of cones, pyramids, cylinders, and spheres and use them to solve real world problems ·Apply formulas to solve world problems	Surface area, volume, cylinder, cone, spheres, pyramid
G 8.1A	Apply the Pythagorean Theorem	·Understand the Pythagorean theorem and its converse ·Apply the Pythagorean theorem to determine an unknown side length in right triangles ·Apply the Pythagorean theorem to find the distance between two points on a coordinate grid ·Solve real world problems involving the Pythagorean theorem	Pythagorean theorem, hypotenuse, legs, proof
G 8.2	Understand congruence and describe the effects of reflections, dilations, rotations and translations	·Experimentally verify the properties of rotation, reflection, and translation ·Describe the effects of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates ·Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations and describe the sequence	Transformation, translation, reflection, rotations, dilations, similarity, congruence
G 8.3	Extended and apply understanding of lines and angles	·Understand the relationship of two lines cut by a transversal ·Solve problems involving lines, angles, and transversals	Vertical angle, corresponding angle, alternate internal angles, alternate external angles, transversal, angles

Diocese of Bridgeport – Math Standards – Grade 8

PROBABILTY, STATISTICS and DATA

	STANDARD	SKILLS	VOCABULARY
PSD 8.1	Extend understanding of statistics to investigate patterns in bivariate data	·Construct and interpret scatter plots for bivariate measurement data in investigate patterns of association between two quantities ·Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association ·Know that straight lines are used to model relationships	Scatter plot, outlier, stem and leaf graph, box and whisker, clustering, bivariate, positive association, negative association, linear association, nonlinear association,