Diocese of Bridgeport – Math Standards – Grade 7

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

BASE TEN VALUE, OPERATIONS, and THEORY

	STANDARD	SKILLS	VOCABULARY
BVOT 7.1	Extend previous understanding of rational numbers to solve problems involving the four operations	·Identify, order and compare rational numbers ·Graph rational numbers on a number line ·Classify numbers as rational, irrational, whole, natural, or integer ·Describe situations opposite quantities combine to make zero · Understand P +Q as the number located at a distance Q from P ·Interpret sums of negative integers in real world context ·Show that the distance between two rational numbers on a number line is the absolute value of their difference in real word context ·Interpret products of rational numbers in real world context ·Convert between fraction, decimal, and percent format	Rational numbers, irrational numbers, whole numbers, natural numbers, integers, absolute value
BVOT 7.1A	Add and subtract to solve problems with rational numbers	·Add and subtract rational numbers and explain the process ·Represent addition and subtraction on a horizontal or vertical number line ·Understand subtraction of rational numbers as adding the inverse	Add, subtract, regroup, represent, horizontal, vertical, number line, inverse
BVOT 7.1B	Multiply and divide to solve problems with ration numbers	·Multiply and divide rational numbers and explain the process ·Understand how multiplication is extended from fractions to rational numbers ·Use the distributive property ·Understand that integers can be divided, provided that the divisor is not zero ·Understand that every quotient of a integers with non-zero divisors is a rational number ·Convert a rational number to a decimal using long division	Multiply, divide, product, quotient, dividend, divisor, property, rational, integer, value
BVOT 7.2	Solve real life problems using numerical expression and equations	·Solve multistep real world problems posed with positive and negative numbers ·Apply properties of and calculate with numbers in any form ·Convert between forms as needed ·Assess reasonableness with estimation and mental computation ·Identify and combine like terms ·Translate expressions between written and verbal form ·Expand linear expressions with rational coefficients	Positive, negative, calculate, convert, reasonableness, estimation, mental computation, combine, translate, linear expression, coefficients, rational

BVOT 7.2A	Generate equivalent expressions	·Apply properties and strategies to add, subtract, factor, and expand linear expressions with rational coefficients ·Understand the purpose of rewriting expressions in different forms for different contexts ·Understand that rewriting expressions in different forms can help show the relationship between them	Properties, add, subtract, factor, expand, linear expression, rational, coefficient, algebraic expression
BVOT 7.2B	Use variables to represent quantities in real world problems	·Reason about quantities ·Fluently solve word problems leading to equations of the form px + q= r and p(x+q)= r where p,q, and r are specific rational numbers ·Solve problems leading to inequalities in the form of px + q> r or px+q< r where p and q are specific numbers	Equations, rational numbers, formula, inequalities
BVOT 7.2C	Construct simple equations and inequalities to solve problems	·Compare algebraic solutions and arithmetic solutions ·Identify the sequence of operations used ·Graph the solutions of inequalities and interpret it in the context of the problem	Algebra, arithmetic, sequence, operations, inequalities, interpret, context

Diocese of Bridgeport – Math Standards – Grade 7

RATIOS, RELATIONSHIPS, and FUNCTIONS

	STANDARD	SKILLS	VOCABULARY
RRF 7.1	Analyze and represent proportional relationships	·Compute unit rates associated with ratios of fractions ·Recognize proportional relationships between quantities ·Represent proportional relationships between quantities ·Decide whether two quantities are in a proportional relationship ·Identify unit rate in tables, graphs, equations, diagrams, and descriptions ·Represent proportional relationships by equations ·Describe coordinates in context of a situations	Unit rates, compute, fractions, ratios, proportional relationships, quantities, values, table, graph, equation, description, diagram, table, context
RRF 7.1A	Solve real world problems using proportional relationships	·Use proportional relationships to solve multistep problems ·Find perfect square roots and estimate the value of non-perfect squares ·Convert between fractions, decimals, and percent ·Solve multistep problems involving ratio and percent ·Examples: interest, tax, mark ups and mark downs, gratuities, commission, fees, percent increase and decrease, and percent error	Proportional relationships, multistep, perfect square root, fractions, decimal, percent, ratio, percent, tax, interest, mark up, mark down, gratuities, tip, commission, fees, decrease, increase, percent error

Diocese of Bridgeport – Math Standards – Grade 7

GEOMETRY

	STANDARD	SKILLS	VOCABULARY
G 7.1	Solve real world problems involving angle measurement, area, surface area, and volume of two and three dimensional objects	·Use and develop formulas to solve problems involving geometric figures ·Use properties such as dilations, reflections, rotations, and translations to solve problems **Solve problems involving angles** ·Solve multistep problems involving supplementary, complimentary, vertical and adjacent angles ·Write and solve simple equations for an unknown angle in a figure **Solve problems two and three dimensional shapes and objects** ·Know the formula for circumference and area of a circle and apply it ·Solve real world problems involving the area, volume, and surface area of two and three dimensional objects composed of triangles, quadrilaterals, polygons, cubes and right prisms	Formula, measurement, angles, protractor, surface area, volume, two dimensional, three dimensional, dilations, reflections, translations, supplementary, complimentary, vertical, adjacent, equation, circumference, chord, diameter, triangles, quadrilaterals, faces, edges, dimensions, polygon, cube, prism, transformations
G 7.1A	Draw geometric shapes given conditions and solve problems relating to scale	·Use tools to draw geometric shapes with given conditions ·Construct triangles from three given dimensions ·Decide whether given dimensions form a triangle, a unique triangle, or no triangle at all ·Describe the two dimensional figures that result from slicing three-dimensional figures ·Solve problems involving scale drawings of geometric figures ·Compute actual lengths an areas from a scale drawing and recreate at another scale	Straight edge, ruler, compass, protractor, dimensions, slice, partition, scale

Diocese of Bridgeport – Math Standards – Grade 7

PROBABILTY, STATISTICS and DATA

	STANDARD	SKILLS	VOCABULARY
PSD 7.1	Extend understanding of statistics to draw and compare inferences	**Draw inferences about a population** ·Understand that statistics can be used to gain information about a population by examining a sample of the population ·Understand that generalizations about a population from a sample is only valid if the sample is representative of the population ·Understand that random sampling tends to produce representative samples and support valid inferences **Draw informal comparative inferences about two populations** ·Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities ·Measure the difference between the centers by expressing it as a multiple of a measure of variability ·Use measures of center and measures of variability for numerical data from random samples to draw comparative inferences about two populations	Statistics, population, sample, , represent, inference, valid, numerical data, variabilities, visual overlap, center, express,
PSD 7.2	Investigate, represent, use and evaluate probability	·Differentiate between theoretical and experimental probability ·Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring ·Understand that a probability near 0 indicates an unlikely event, a probability, around ½ indicates and event that is neither unlikely nor likely, and a probability near 1 indicates a likely event ·Collect data on the chance process and approximate probability ·Develop a probability model and use it to find probability of events ·Compare probabilities from a model to observe frequencies ·Explain sources of discrepancy ·Find probabilities of compound events using organized lists, tables, tree diagrams, and situations ·Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams ·Design and use a simulation to generate frequencies for compound events	Theoretical probability, experimental probability, chance, likelihood, likely, unlikely, rate, certain, very likely, data, approximate, discrepancy, organized list, table, tree diagram, situation, simulation, frequency