We Transform the World!
CATHOLIC SCHOOLS
THE ARCHDIOCESE OF GALVESTON-HOUSTON

Catholic Identity: Integration of Our Faith

7.1A	display a sense of wonder about mathematical relationships *
7.1B	respond to the beauty, harmony, proportion, radiance, and wholeness present in mathematics *
7.1C	show interest in how the mental processes evident within mathematics help us with the development of natural virtues *
7.1D	exhibit appreciation for the process of discovering meanings and truths and not just arriving at an answer *

Mathematical Learning Process Standards

7.2 **Learning Process Standards.** The student uses mathematical processes to acquire and demonstrate mathematical understanding, demonstrating the mental habits of precise, determined, careful, and accurate questioning, inquiry, and reasoning. *

Tools to Know		Ways to Show	
7.2A	apply mathematics to problems arising in everyday life, society, and the workplace	7.2D	create and use representations to organize, record, and communicate mathematical ideas
7.2B	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution	7.2E	analyze mathematical relationships to connect and communicate mathematical ideas
		7.2F	exhibit appreciation for the ongoing nature of mathematical inquiry and develop lines of inquiry to understand why things are true and why they are false*
7.2C	exhibit habits of thinking quantitatively and in an orderly manner, especially through immersion in mathematical observations found within creation *		

Rational Number Representations and Operations

7.4 **Number and operations.** The student adds, subtracts, multiplies, and divides rationale numbers while solving problems and justifying solutions.

Applied Standards		Supporting Standards	
7.4A	Solve problems using addition, subtraction, multiplication, and division of rational numbers	7.4A.1	add, subtract, multiply, and divide rational numbers fluently
		7.4A.2	extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of rational numbers

Proportional Reasoning

7.5 **Proportionality.** The student represents and solves problems involving proportional relationships.

7.5A	represent constant rates of change in mathematical and real-world problems given pictorial, tabular, verbal, numeric, graphical, and algebraic representations, including $d = rt$	7.5A.1	calculate unit rates from rates in mathematical and real-world problems
		7.5A.2	determine the constant of proportionality ($k = y/x$) within mathematical and real-world problems
7.5B	represent linear relationships using verbal descriptions, tables, graphs, and equations that simplify to the form $y = mx + b$		
7.5C	solve problems involving ratios, rates, and percent, including multi-step problems involving percent increase and percent decrease, and financial literacy problems		

Geometry and Measurement

7.6 **Geometry and measurement.** The student solves geometric problems involving proportional relationships and volume.

7.6A	determine the area of composite figures containing combinations of rectangles, squares, parallelograms, trapezoids, triangles, semicircles, and quarter circles	7.6A.1	solve problems involving the lateral and total surface area of a rectangular prism, rectangular pyramid, triangular prism, and triangular pyramid by determining the area of the shape's net

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Geometry and Measurement continued

7.6	**Geometry and measurement.** The student solves geometric problems involving proportional relationships and volume.	
7.6B	solve problems involving the volume of rectangular prisms, triangular prisms, rectangular pyramids, and triangular pyramids	7.6B.1 model the relationship between the volume of a rectangular prism and a rectangular pyramid having both congruent bases and heights and connect that relationship to the formulas 7.6B.2 explain verbally and symbolically the relationship between the volume the of a triangular prism and a triangular pyramid having both congruent bases and heights and connect that relationship to the formulas
7.6C	solve mathematical and real-world problems involving similar shape and scale drawings	7.6C.1 generalize the critical attributes of similarity, including ratios within and between similar shapes
7.6D	write and solve equations using geometry concepts, including the sum of the angles in a triangle, and angle relationships	
7.6E	determine the circumference and area of circles	7.6E.1 describe π as the ratio of the circumference of a circle to its diameter

Data Analysis

7.7	**Data analysis.** The student uses statistical representations to analyze data.	
7.7A	solve problems using data represented in bar graphs, dot plots, and circle graphs, including part-to-whole and part-to-part comparisons and equivalents	7.7A.1 use data from a random sample to make inferences about a population
7.7B	compare two groups of numeric data using comparative dot plots or box plots by comparing their shapes, centers, and spreads	7.7B.1 compare two populations based on data in random samples from these populations, including informal comparative inferences about differences between the two populations

Probability

7.7	**Data analysis.** The student uses probability and statistics to describe or solve problems involving proportional relationships.	
7.7C	determine experimental and theoretical probabilities related to simple and compound events using data and sample spaces	7.7C.1 represent sample spaces for simple and compound events using lists and tree diagrams 7.7C.2 select and use different simulations to represent simple and compound events with and without technology 7.7C.3 find the probabilities of a simple event and its complement and describe the relationship between the two
7.7D	solve problems using qualitative and quantitative predictions and comparisons from simple experiments	7.7D.1 make predictions and determine solutions using experimental data for simple and compound events 7.7D.2 make predictions and determine solutions using theoretical probability for simple and compound events 7.7D.3 use data from a random sample to make inferences about a population

Equations and Inequalities

7.8	**Algebra.** The student solves one-variable equations and inequalities.	
7.8A	model and solve one-variable, two-step equations and inequalities	7.8A.1 write one-variable, two-step equations and inequalities 7.8A.2 represent solutions for one-variable, two-step equations and inequalities on number lines