

St. Catherine of Siena Catholic School Mathematics

Eighth Grade

Week	Unit	Skills				
Curriculum Overview	Integer Exponents & Scientific Notation (20 days)	Students expand their basic knowledge of positive integer exponents and prove the Laws of Exponents for any integer exponent. Work with radicals and integer exponents, integers multiplied by a power of 10. Scientific notation and continued work performing operations. Know the properties of integer exponents.				
	Linear Equation (40 days)	Use similar triangles to explain why the slope of a line is well-defined, lines, and linear equations as they develop ways to represent a line by different equations. $y=mx+b$, etc.. The equation of a line is introduced. Understand the connections between proportional relationships, lines, and linear equations. Analyze and solve linear equations and pairs of simultaneous linear equations. Solve linear equations in one variable.				
	Examples of Functions from Geometry (15 days)	Introduction to functions in the context of linear equations and area/volume formulas. Define, evaluate, and compare functions using equations of lines as a source of linear functions and area and volume formulas as a source of non-linear functions.				
	Linear Functions (20 days)	Linear functions in the context of statistics and probability as bivariate data provides support in the use of linear functions. Use functions to model relationships between quantities. Investigate patterns of association in vibariate data.				
	The concept of congruence (25 days)	Understand congruence and similarity using physical models, transparencies, or geometry software. Verify experimentally the properties of rotations, reflections, and translations. Understand that a two-dimensional figure can be congruent to another if certain conditions are present.				

<p>Similarity (25 days)</p>	<p>Study congruence through rotations, reflections, and translations of geometrical figures. Pythagorean Theorem is introduced through the square within a square proof of the theorem. The Theorem is practiced in real-world applications and mathematical problems throughout the year.</p>				
<p>Irrational Numbers Using Geometry (35 days)</p>	<p>Learn and explain a proof of a theorem. Use Pythagorean Theorem to motivate a discussion of irrational square roots (irrational cube roots are introduced via volume of a sphere). Understand irrational numbers and ways to represent them on the real number line.</p>				