



7 <sup>th</sup> GRADE MATHEMATICS	
Cardinal Newman Standards: Catholic Identity Integration	
<ul style="list-style-type: none"> <li>• <b>CS.M.712.GS2:</b> Develop lines of inquiry to understand why things are true and why they are false. <i>(CCSSM.7.RP.2; RP.3; NS.3; EE.2; EE.3; EE.4; G.1; G.6; SP.2; SP.3; SP.6; SP.7; SP.8)</i></li> <li>• <b>CS.M.712.IS2:</b> Demonstrate how sound logical arguments and other processes of mathematics are foundational to its discipline. <i>(CCSSM.7.RP.1; NS.1; NS.2; NS.3; EE.1; EE.3; G.1; G.4; G.5; G.6; SP.2; SP.3; SP.4; SP.7; SP.8)</i></li> <li>• <b>CS.M.712.IS5:</b> Recognize personal bias in inquiry and articulate why inquiry should be undertaken in a fair and independent manner. <i>(CCSSM.7.NS.3; EE.3; EE.4; G.6; SP.1; SP.2; SP.3; SP.4; SP.5; SP.6; SP.7; SP.8)</i></li> <li>• <b>CS.M.712.DS7:</b> Exhibit appreciation for the process of discovering meanings and truths existing within the solution of the problem and not just arriving at an answer. <i>(CCSSM.7.RP.3; NS.1; NS.2; NS.3; EE.1; EE.3; G.1; G.2; G.6; SP.1; SP.2; SP.6; SP.7)</i></li> </ul>	
Priority Skills	Supporting Skills
<ul style="list-style-type: none"> <li>• Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</li> <li>• Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically.</li> <li>• Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies</li> <li>• Use variables to represent quantities in a real-world or mathematical problem and construct simple equations and inequalities to solve problems by reasoning about the quantities.</li> <li>• Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.</li> <li>• Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</li> </ul>	<ul style="list-style-type: none"> <li>• Recognize and represent proportional relationships between quantities.</li> <li>• Apply properties of operations as strategies to multiply and divide rational numbers.</li> <li>• Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</li> <li>• Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions</li> <li>• Know the formulas for the area and circumference of a circle and use them to solve problems</li> <li>• Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure.</li> <li>• Solve real-world and mathematical problems involving the four operations with rational numbers</li> <li>• Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.</li> </ul>



Priority Skills	Supporting Skills
<ul style="list-style-type: none"> <li>Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.</li> <li>Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.</li> <li>Develop a probability model and use it to find probabilities of events.</li> </ul>	<ul style="list-style-type: none"> <li>Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations</li> </ul>
<b>Essential Questions</b>	
<ul style="list-style-type: none"> <li>How can we transfer the process of Mathematical reasoning to other disciplines?</li> <li>How can we consistently and efficiently determine which data points are relevant and which are not?</li> <li>How can we use facts about complex shapes to solve real-world problems?</li> <li>What best practices can I utilize to determine similarities and differences between two or more known or imagined quantities?</li> </ul>	
<b>Vital Vocabulary</b>	
<ul style="list-style-type: none"> <li>Coefficient, Complementary, Constant, Construct, Cube, Derivation, Equivalent, Inference, Logical, Percent Change, Polygon, Prism, Probability, Properties of Operations, Proportional, Pyramid, Quadrilateral, Rate, Ratio, Rational, Reasonable, Sample, Solution (Set), Supplementary, Valid, Variability</li> </ul>	

*Additional Resources:* [Cardinal Newman Mathematics Resources, Appendix F](#)