

**COVINGTON INDEPENDENT PUBLIC SCHOOLS
MATHEMATICS CURRICULUM - GIFTED/TALENTED**

Number and Computation Strand – Grade 6

Big Ideas	End-Of-Year Test Question	Resources/ Investigations	On-line Resources/Other	Notes/Comments
<p>NC6.1-G Extend number sense and place value concepts to include billions, hundred thousandths, Pi, percents, (including percents greater than 100%) and improper fractions.</p> <ul style="list-style-type: none"> • M-6-NC-1 & 5 • M-7-NC-1 		<p>NCTM Developing Number Sense 5-8. Activities 6, 19, 37, 38</p> <p>NCTM <i>Understanding Rational Numbers and Proportion</i>. Activity 2 Page 7</p> <p>Grade 6 Prime Time Bits and Pieces I Bits and Pieces II Covering and Surrounding Grade 7 Data Around Us Filling and Wrapping</p>	<p>Online Base 10 Blocks http://illuminations.nctm.org/swr/review.asp?SWR=487</p>	
<p>NC6.2-G Explore and develop meaning of ratio and proportion.</p> <ul style="list-style-type: none"> • M-6-NC-3 	<p>2675 C MC F:4A Q: 1 Sect:A Content:30 Matrix Artid:</p> <p>At Lake View Middle School, there are 900 boys. The ratio of boys to girls is 5 to 4. How many girls are there in the school? A. 400 B. 550 C. 720 D. 975</p>	<p>NCTM <i>Understanding Rational Numbers and Proportion</i>. Investigations 4, 5, and 6</p> <p>Grade 6 How Likely is It? Grade 7 Comparing and Scaling Stretching and Shrinking Moving Straight Ahead Data Around Us</p>		

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	http://timss.bc.edu/timss1995i/TIMSSPDF/BMIitems.pdf Page 31; Item k-7			
NC6.3- G Develop and analyze algorithms for computing decimals, fractions (simplifying results as necessary). and proportions M-6-NC-2	TIMSS Released Items Page 33; Item k-9	http://standards.nctm.org/document/eexamples/chap6/6.1/index.htm Grade 6 Bits and Pieces II		
NC 6.4-G Compare, order and covert between whole numbers, decimals, fractions and percents using concrete materials, drawings, symbols, etc. <ul style="list-style-type: none"> • N-C-NC-12 	http://timss.bc.edu/timss1995i/TIMSSPDF/BMIitems.pdf Page 48; Item M-4	Grade 6 Bits and Pieces I Bits and Pieces II Grade 7 Comparing and Scaling Data Around Us		

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<p>NC6.5-G Exponential notation, (Positive whole number exponents) and Square roots of perfect squares.</p> <ul style="list-style-type: none"> M-7-NC-5 	<p>Which expression represents the greatest value? A. 20 to the first power B. the product of 20 and 1 C. 20 divided by 1 D. the sum of 20 and 1</p>	<p>Grade 6 Prime Time Grade 7 Data Around Us Grade 8 Looking for Pythagoras Growing, Growing, Growing</p>		
<p>NC 6.6-G Select appropriate methods and tools for computing with large numbers, fractions, mixed numbers, decimals, and percents and use the selected method.</p> <ul style="list-style-type: none"> M-6-NC-9 & 10 	<p>http://timss.bc.edu/timss1995i/TIMSSPDF/BMIItems.pdf Page 14; Item j-12 Page 18; Item j-14 Page 30; Item k-6 Page 44; Item L-17</p>	<p>Embedded in all units. Play “Beat the Calculator” students decide whether they want to use the calculator, paper and pencil or mental math for computing in a fast paced, competitive game.</p>		
<p>NC 6.7-G Use prime numbers, composite numbers, prime factorization, factors, multiples, and divisibility to solve problems.</p> <ul style="list-style-type: none"> M-6-NC-11 	<p>5628 OR F:4A Q:10 Sect:A Content:30 Matrix Artid: Martin’s Three-Digit Number Martin said, “I am thinking of a whole number between 100 and 300. • The number is divisible by 3 but not by 9. • The ones digit is the sum of the hundreds digit and the tens digit.” a. Show why 153 cannot be Martin’s number. b. Find all the numbers that match Martin’s clues. Show</p>	<p>Grade 6 Prime Time I Prime Time II Grade 7 Comparing and Scaling Data Around Us Grade 8 Growing, Growing, Growing.</p>		

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	all your work. c. Write one more clue that would limit the answer in part b to one and only one correct number.			
NC6.8-G Explore order of operations and relationships among numbers using field properties and operations (commutative, associative, distributive, identities, inverses and closure) M-6-NC-13	Mary correctly used the order of operations to answer the following problem: $20 - 8 \cdot 4 \div 2 + 6$ What is Mary's answer? A. 0 B. 6 C. 10 D. 30			
NC6.9-G Add and Subtract Integers Both concretely and symbolically (mental, paper and pencil, calculators) <ul style="list-style-type: none"> • NC 6.10-G □ M-7-NC-6 		Grade 7 Accentuate the Negative		

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Geometry and Measurement – Grade 6 – Gifted/Talented

Big Ideas	End-Of-Year Test Question	Resources/Investigations	On-line Resources/Other	Notes/Comments
<p>GM 6.1-G Measurement: <i>Extend understanding of measurement to:</i></p> <ul style="list-style-type: none"> ➤ Understand and use both metric and customary systems of measurement ➤ Select and apply techniques and tools to accurately find length, area, volume, and angle measures to given levels of precision. ➤ Use common benchmarks to select appropriate methods of estimating measurements. 	<p>http://timss.bc.edu/timss1995/i/TIMSSPDF/BMItems.pdf</p> <p>Page 12; j-10</p>	<p>Grade 6 Covering and Surrounding Shapes and Designs Ruins of Montarek Grade 7 Stretching and Shrinking Variables and Patterns Filling and Wrapping Grade 8 Say It with Symbols Looking for Pythagoras Frogs, Fleas, and Painted Cubes Geometry Sketchpad Lesson on Area and Perimeter</p>		
<p>GM 6.2-G Estimate, compare, and convert units of measurement for length, weight/mass, and volume/capacity within the U.S. customary and metric systems.</p>		<p>Grade 7 Accentuate the Negative Filling and Wrapping Data Around Us Moving Straight Ahead</p>		

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<p>GM 6.3-G Area/Perimeter/Surface Area/Volume</p> <ul style="list-style-type: none"> ➤ Extend understanding of area and perimeter (or circumference) to circles and trapezoids. ➤ Develop strategies to determine the surface area and volume of cylinders and selected prisms (not requiring the use of the Pythagorean theorem). 		<p>Use geoboards to discover and explore Pick's Theorem.</p> <p>Use POLYDRONS, paper, or other manipulatives to create nets of 3 dimensional objects. Use those nets to calculate surface area.</p> <p>Grade 6 Covering and Surrounding Shapes and Designs Ruins of Montarek Grade 7 Stretching and Shrinking Variables and Patterns Filling and Wrapping Grade 8 Say It with Symbols Looking for Pythagoras Frogs, Fleas, and Painted Cubes</p>		
<p>GM 6.4-G Formulate the rule that the sum of measurements is 180 degrees in a triangle and 360 in a quadrilateral AND begin developing rules for other polygons.</p>	<p>http://timss.bc.edu/timss1995/i/TIMSSPDF/BMItems.pdf Page 41; Item L-15</p>	<p>Construct or trace several different triangles. Tear off the corners of the triangles (one triangle at a time). Line up the vertices of the torn pieces to discover the sum of any triangle will always be 180 degrees.</p> <p>Create a spreadsheet with columns for the measures of the angles in the vertices for</p>		

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		<p>polygons. Look for patterns in the sums of the angles. Grade 6 Shapes and Designs</p>		
<p>GM 6.5-G Draw geometric objects with specified properties, such as side lengths and/or angle measures.</p>		<p>Grade 6 Shapes and Designs Ruins of Montarek Grade 7 Stretching and Shrinking</p>	<p>LOGO</p>	
<p>GM 6.6-G Two- and Three-Dimensional Shapes <i>Extend understanding of two- and three-dimensional shapes by:</i></p> <ul style="list-style-type: none"> ➤ Analyzing characteristics and properties of two- and three- dimensional shapes ➤ Develop mathematical arguments about geometric relationships. 	<p>http://timss.bc.edu/timss1995j/TIMSSPDF/BMItems.pdf Page 13; Item j-11</p>	<p>Grade 6 Shapes and Designs Ruins of Montarek Grade 7 Stretching and Shrinking Filling and Wrapping</p>		

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GM 6.7-G Symmetry and Congruence Examine the congruence, similarity, and line or rotational symmetry of objects using transformations.	http://timss.bc.edu/timss1995i/TIMSSPDF/BMIitems.pdf Page 19; J-15 Page 32; K-8	Grade 6 Shapes and Designs Ruins of Montarek Grade 7 Stretching and Shrinking		
GM 6.8-G Construct 3-D objects from 2-D pictures.		Grade 6 Ruins of Montarek		
GM 6.9-G Use geometric models to represent and explain numerical and algebraic relationships.		Creative Publications http://www.wrightgroup.com/cgi-bin/catalog/productinfo.cgi?project_number=14036		

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Probability and Statistics – Grade 6 – Gifted/Talented

Big Ideas	End-Of-Year Test Question	Resources/Investigations	On-line Resources/Other	Notes/Comments
PS 6.1-G Collect, organize, analyze and interpret data in a variety of graphical methods including Venn diagrams, circle graphs, and histograms.				
PS 6.2-G Select an appropriate graph to represent data and justify its use.				
PS 6.3- G Compare data from various types of graphs and or two different versions of the same type of graphs.				
PS 6.4-G Make predictions, draw conclusions, and verify results from statistical data and probability experiments				

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<p>PS 6.5-G</p> <p>Determine and apply the most appropriate measures of central tendency.</p>				
<p>PS 6.6-G</p> <p>Investigate solutions to probability experiments using counting techniques, tree diagrams, charts, and tables to find theoretical probability.</p>	<p>Pizza Parlor A pizza parlor offers four toppings on its pizzas: pepperoni, sausage, mushrooms, and olives. a. How many different two-topping pizzas can be made? Show your work and explain your reasoning. b. How many different pizzas can be made with at least one topping? Show your work and explain your reasoning.</p>			
<p>PS 6.7-G</p> <p>Understand and explain the relationship of fractions to probability</p> <p>m-mg.1.3.1</p>				
<p>PS 6.8-G</p> <p>Explore the concept of</p>				

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chance.				
PS 6.9-G Find compliments of events.				
PS 6.10-G Recognize the role of probability in decision-making.				

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Algebra – Grade 6 – Gifted/Talented

Big Ideas	End-Of-Year Test Question	Resources/Investigations	On-line Resources/Other	Notes/Comments
A 6.1-G Recognize, analyze, extend, and find rules for a variety of patterns.	http://timss.bc.edu/timss1995i/TIMSSPDF/BMIitems.pdf Page 22; Item j-18			
A 6.2-G Represent, interpret and describe function relationships through use of tables, ordered pairs, plots on a coordinate graph, and verbal rules.				
A 6.3-G Compare/contrast, give examples of variables, expressions, equations, and inequalities.				

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<p>A 6.4-G Write and solve 1-step equations with one variable, using concrete and/or informal methods that model everyday situations</p>				
<p>A 6.5-G Use order of operations</p>				
<p>A 6.6-G Write and solve simple inequalities.</p>				
<p>A 6.7-G Use formulas in geometry applications (area and perimeter.)</p>	<p>http://timss.bc.edu/timss1995/TIMSSPDF/BMIItems.pdf Page 28; Item k-5</p>			
<p>A 6.8-G</p>	<p>http://timss.bc.edu/timss1995/TIMSSPDF/BMIItems.pdf</p>			

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Use coordinate system to plot ordered pairs in the first quadrant.	Page 10; l-8 Page 20; j-16			
A 6.9-G Locate and plot integers on a number line				
A 6.10-G Use graphs to make predictions and/or analyze change.				

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