

West Deptford Middle School Curriculum Map
Advanced Math - Grade 6

Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 1: Number System Enrichment 6 Weeks	<ul style="list-style-type: none"> • How are decimals and fractions related? • How can fractions be represented and simplified? • How can numbers be broken apart into fractions? • How can we compare and contrast numbers? • How can we decide when to use an exact answer and when to use an estimate? • How can you solve real world division of fraction word problems using 	<ul style="list-style-type: none"> • How to apply the quotient to real world connections • How to calculate the value of exponents • How to use prime factorization to find the GCF and LCM • The definition of absolute value. • The definition of reciprocal • The division algorithm • The rules for adding, subtracting, multiplying, and dividing with integers. 	<ul style="list-style-type: none"> • Differentiate between statistical questions and those that are not. • Divide by whole and decimal number divisors • Examine the distribution of a data set and explain the median, mean, and interquartile range. • Find prime factorization using exponents • Fluently use the standard algorithm to add, subtract, multiply and divide multi-digit decimals. 	<ul style="list-style-type: none"> • classwork practice page • cooperative learning tasks • exit ticket • games • homework • manipulatives • notebook activities • quiz • self assessment • slate practice • teacher observation • unit assessment • Written Questions / Exercises with 	<ul style="list-style-type: none"> • MA.6.CCSS.Math.Content.6.NS.A • MA.6.CCSS.Math.Content.6.NS.A.1 • MA.6.CCSS.Math.Content.6.NS.B • MA.6.CCSS.Math.Content.6.NS.B.2 • MA.6.CCSS.Math.Content.6.NS.B.3 • MA.6.CCSS.Math.Content.6.NS.C.5 • MA.6.CCSS.Math.Content.6.SP.A.1 • MA.6.CCSS.Math.Content.6.SP.A.2 • MA.6.CCSS.Math.Content.6.SP.A.3 • MA.6.CCSS.Math.Content.6.SP.B.5c • MA.6.CCSS.Math.Content.6.SP.B.5d • MA.7.CCSS.Math.Content.7.NS.A.1a • MA.7.CCSS.Math.Content.7.NS.A.1b • MA.7.CCSS.Math.Content.7.NS.A.1c • MA.7.CCSS.Math.Content.7.NS.A.1d • MA.7.CCSS.Math.Content.7.NS.A.2b • MA.7.CCSS.Math.Content.7.NS.A.2d • CRP.K-12.CRP4 • CAEP.9.2.8.B.3 • CRP.K-12.CRP8

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	<p>visual models and equations?</p> <ul style="list-style-type: none"> • How do mathematical ideas interconnect and build on one another to produce a coherent whole? • How do operations affect numbers? • How do we compare and contrast numbers? • How is dividing a whole number by a fraction alike/different from dividing a fraction by a whole number? • How is mathematics used to quantify and compare 		<ul style="list-style-type: none"> • Interpret the quotient with remainders • Represent integers, opposites, and absolute value • Solve multiplication and division of fractions using a visual model. • Understand the meaning of vocabulary terms such as temp. above/below zero, elevation above/below sea level, credits/debits, and positive and negative values as they represent quantities in real-world. • Use appropriate method for sensible 	<p>Short, Extended or Multiple-choice Answers</p>	
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	<p>situations, events, and phenomena?</p> <ul style="list-style-type: none">• How is the value of an integer determined?• What are different ways rational numbers can be represented?• What is number sense?• When do we divide pieces of a whole?• When do you need to utilize multiplication to divide fractions?• Why are negative numbers necessary?		<p>estimation.</p> <ul style="list-style-type: none">• Use strategies to find GCF and LCM.		
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 2: Expressions Enrichment 6 Weeks	<ul style="list-style-type: none"> • How can addition patterns in a sequence help determine its algebraic rules? • How can change be best represented mathematically? • How can patterns, relationships, and functions be used as tools to best describe and help explain real-life situations? • How do we figure out what the letter stands for? • How do we solve equations? • What are equivalent expressions? 	<ul style="list-style-type: none"> • Absolute value • Associative property • Coefficient • Commutative property • Distributive property • Equivalent • Evaluate • Exponent • Expressions • Greatest Common Factor (GCF) • Order of operations • Term 	<ul style="list-style-type: none"> • apply properties to generate equivalent expressions and identify when two expressions are equivalent. • be able to determine when two different expressions are equal • evaluate expressions using the order of operations. • find a rule to extend a pattern. • find the GCF of two numbers less than or equal to 100. • identify parts of an expression (sum, term, product, factor, 	<ul style="list-style-type: none"> • Cooperative learning tasks • Games • Homework • Manipulatives • Notebook Activities • Quiz • Slate Practice • Teacher observation • Unit assessment 	<ul style="list-style-type: none"> • CRP.K-12.CRP2 • MA.6.CCSS.Math.Content.6.NS.B.4 • MA.6.CCSS.Math.Content.6.EE.A.1 • MA.6.CCSS.Math.Content.6.EE.A.2 • MA.6.CCSS.Math.Content.6.EE.A.2a • MA.6.CCSS.Math.Content.6.EE.A.2b • MA.6.CCSS.Math.Content.6.EE.A.2c • MA.6.CCSS.Math.Content.6.EE.A.3 • MA.6.CCSS.Math.Content.6.EE.A.4 • MA.7.CCSS.Math.Content.7.EE.A • MA.7.CCSS.Math.Content.7.EE.A.1 • CRP.K-12.CRP4 • CAEP.9.2.8.B.3 • CRP.K-12.CRP8

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	<ul style="list-style-type: none"> • What do we use formulas for? • What is an exponent? • What is an expression? • What is the distributive property? • What is the greatest common factor (GCF)? • What is the Least Common Multiple? 	<ul style="list-style-type: none"> • Variable 	<p>quotient, coefficient).</p> <ul style="list-style-type: none"> • identify, translate, and write algebraic expressions. • students will use order of operations when using formulas to solve real world problems. • write an algebraic expression for a sequence. • write and evaluate expressions in exponents. • write expressions from verbal descriptions using variables and numbers and understand order matters when writing subtraction and 		
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			division.		
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
<p>Unit 3: Equations and Inequalities Enrichment</p> <p>6 Weeks</p>	<ul style="list-style-type: none"> • How are perimeter, area, and volume related? • How can a number line be used to show an infinite number of possible answers for an equation or inequality? • How can algebraic equations be used to solve real world problems? • How can substitution be used to 	<ul style="list-style-type: none"> • Algebraic expression • Altitude • An inequality represents a range of solutions. • Area • Compose • Cube • Decompose • Dependent variable 	<ul style="list-style-type: none"> • find area of right triangle, other triangles, special quadrilaterals and polygons • find relationship between perimeter and area • find the arc of a square, rectangles, triangles, and parallelogram • find the area of trapezoid • find the missing dimension given 	<ul style="list-style-type: none"> • Classwork practice page • Cooperative Learning Tasks • Games • Homework • Manipulatives • Notebook Activities • Quiz • Slate Practice • Teacher Observations 	<ul style="list-style-type: none"> • MA.6.CCSS.Math.Content.6.EE.B.5 • MA.6.CCSS.Math.Content.6.EE.B.6 • MA.6.CCSS.Math.Content.6.EE.B.7 • MA.6.CCSS.Math.Content.6.EE.B.8 • MA.6.CCSS.Math.Content.6.G.A.1 • MA.6.CCSS.Math.Content.6.G.A.2 • MA.6.CCSS.Math.Content.6.G.A.4 • MA.7.CCSS.Math.Content.7.EE.B.3 • MA.7.CCSS.Math.Content.7.EE.B.4 • CRP.K-12.CRP4 • CRP.K-12.CRP8

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	<p>determine whether a given number makes an equation or inequality true?</p> <ul style="list-style-type: none"> • How is the inverse operation applied to solving equations? • What procedures can be used to solve an equation? • When in your everyday life can an equation help you solve a problem? • Which values from a specified set, if any, make the equation or inequality true? • Why would a person need to find the surface area of an object instead of the 	<ul style="list-style-type: none"> • Equation • Independent variable • Inequality • Inverse • Net • Ordered pair • Parallelogram • Prism • Quadrilaterals • Rectangle • Right rectangular prism • Right triangle • Scalene triangle • Solid figure • Solution • Square based 	<p>the are or volume of a figure</p> <ul style="list-style-type: none"> • find the volume of a right rectangular prism with fractional edge lengths • find the volume of rectangular prisms • represent 3D figures using nets made up of rectangles and triangles • solve problems by writing equations. • solve real-world and mathematical problems by writing and solving equations using $x + p = q$ and $px = q$ • Solve simple two-step equations with rational 	<ul style="list-style-type: none"> • Unit Assessment 	
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	<p>volume?</p>	<p>pyramid</p> <ul style="list-style-type: none"> • Substitution • Sum • Surface area • The procedure for writing equations with two expressions using one variable. • The relationship between input and output and how it can be graphed. • Three-dimensional • Triangular pyramid • Triangular pyramid • Unit cube • Value 	<p>numbers.</p> <ul style="list-style-type: none"> • use variables to represent numbers • use nets to find surface area of figures composed of triangles and rectangles • use substitution to determine if an inequality is true • write an inequality of the form $x > c$ or $x < c$ to represent a condition in a real world or mathematical problem • write and graph simple inequalities with 1 variable. • write and solve one step equations using all 4 operations 		
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		<ul style="list-style-type: none"> • Vertex • Volume 	<ul style="list-style-type: none"> • with positive numbers • write expressions when solving real-world or mathematical problems 		
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 4: Rational Numbers Enrichment 7 Weeks	<ul style="list-style-type: none"> • How can the data representation influence conclusions? • How do the coordinate of an ordered pair determine the point's location on a coordinate plane? • How do we compare and contrast numbers? • How is data used 	<ul style="list-style-type: none"> • Axis • Box plot • Coordinate pair • Coordinate plane • Coordinate system • Data • Dot plot • First quartile • Fourth quartile 	<ul style="list-style-type: none"> • calculate the mean, median, mode and range of a set of data. • display numerical data on various graphs. • extend the number line to represent all rational numbers. • find the area and perimeter of a geometric figure on a coordinate plane by finding 	<ul style="list-style-type: none"> • Assessment • Classwork practice page • Cooperative learning tasks • Games • Homework • Manipulatives • Notebook Activities • Quiz 	<ul style="list-style-type: none"> • MA.6.CCSS.Math.Content.6.NS.C.6 • MA.6.CCSS.Math.Content.6.NS.C.6a • MA.6.CCSS.Math.Content.6.NS.C.6b • MA.6.CCSS.Math.Content.6.NS.C.6c • MA.6.CCSS.Math.Content.6.NS.C.7 • MA.6.CCSS.Math.Content.6.NS.C.7a • MA.6.CCSS.Math.Content.6.NS.C.7c • MA.6.CCSS.Math.Content.6.NS.C.7d • MA.6.CCSS.Math.Content.6.NS.C.8 • MA.6.CCSS.Math.Content.6.G.A.3 • MA.6.CCSS.Math.Content.6.SP.B.4 • MA.6.CCSS.Math.Content.6.SP.B.5a • MA.6.CCSS.Math.Content.6.SP.B.5b

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	<p>in the real world?</p> <ul style="list-style-type: none"> • How is the value of an integer determined? • What are opposite numbers? • What is a reflection? • What is absolute value? • What is an ordered pair? • What is the coordinate grid? • What is the purpose of data display and statistical measures? • When in the real world do you use absolute value? • Why do we need positive and 	<ul style="list-style-type: none"> • graph • histogram • Line plot • Lower extreme • Maximum • Mean absolute deviation • mean, median, mode and range • Measure of variation • Origin • Outlier • Plot • Rational number • tape diagram • Upper extreme • X axis 	<p>the distance between the same x or y coordinate.</p> <ul style="list-style-type: none"> • find the distance between points with the same first or second coordinate through the use of absolute value. • identify and graph integers on a number line • locate and graph points on a coordinate plane (all 4 quadrants) • organize and display data using dot plot, histogram and box plots. • plot an ordered pair and understand how the opposite sign creates its 	<ul style="list-style-type: none"> • Slate practice • Teacher observation 	<ul style="list-style-type: none"> • MA.7.CCSS.Math.Content.7.NS.A.2d • MA.7.CCSS.Math.Content.7.NS.A.3 • CRP.K-12.CRP4 • CAEP.9.2.8.B.3 • CRP.K-12.CRP8
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	negative numbers?	<ul style="list-style-type: none"> • X coordinate • Y axis • Y coordinate 	<p>reflection.</p> <ul style="list-style-type: none"> • recognize that a number and its opposite are equidistance from zero. • select and justify mean, median, or mode as the best representation of the data. • use $<$ or $>$ to compare rational numbers in real world context. 		
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Unit/ Duration	Essential Questions	Content	Skills	Assessment	Standards
Unit 5: Ratio and Proportion Enrichment 7 Weeks	<ul style="list-style-type: none"> • How are ratios and rates related to fractions? • How can I use multiplication and division to solve ratio and rate 	<ul style="list-style-type: none"> • constant speed • equivalent ratio • proportion • quantity 	<ul style="list-style-type: none"> • distinguish between independent and dependent variable. • find a percent of a quantity as a 	<ul style="list-style-type: none"> • Classwork practice page • Cooperative Learning Tasks • Games 	<ul style="list-style-type: none"> • MA.6.CCSS.Math.Content.6.RP.A.1 • MA.6.CCSS.Math.Content.6.RP.A.2 • MA.6.CCSS.Math.Content.6.RP.A.3 • MA.6.CCSS.Math.Content.6.RP.A.3a • MA.6.CCSS.Math.Content.6.RP.A.3b • MA.6.CCSS.Math.Content.6.RP.A.3c

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	<p>problems?</p> <ul style="list-style-type: none"> • How can I use tables of equivalent ratios to compare rates of change? • How can percent be estimated and found? • How does comparing quantities describe the relationship between them? • How is proportional reasoning of geometric figures used to solve problems? • What is the difference between a ratio and a rate? • What is the meaning of 	<ul style="list-style-type: none"> • rate • ratio • table • unit rate 	<p>rate per 100.</p> <ul style="list-style-type: none"> • use a table and graph to analyze the relationship between dependent and independent variables. • use language to describe a ratio relationship between two quantities. • use multiplicative reasoning to solve ratios and rates within a table and graph. • use ratios to convert and compare measures of two different types. 	<ul style="list-style-type: none"> • Homework • Manipulatives • Notebook Activities • Quiz • Slate Practice • Teacher Observations • Unit Assessment 	<ul style="list-style-type: none"> • MA.6.CCSS.Math.Content.6.RP.A.3d • MA.6.CCSS.Math.Content.6.EE.C.9 • MA.7.CCSS.Math.Content.7.RP.A.1 • MA.7.CCSS.Math.Content.7.RP.A.2a • MA.7.CCSS.Math.Content.7.RP.A.2b • CRP.K-12.CRP4 • CAEP.9.2.8.B.3 • CRP.K-12.CRP8
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	<p>percent?</p> <ul style="list-style-type: none">• What is the relationship between ratios and proportions?• What kinds of questions can be answered using proportional reasoning?• When can you apply distance, rate, and time to the real world?				
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