



GREAT NECK PUBLIC SCHOOLS

"Where Discovery Leads to Greatness"

#DiscoverGreatness

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Curriculum Profile: Pre-Algebra 8

<u>Department</u>	Mathematics		
<u>Course Name</u>	Pre-Algebra 8		
<u>Course Length</u>	One Year		
<u>High School Credits</u>	N/A		
<u>Description</u>	Pre-Algebra 8 focuses on the following critical domains of mathematical aptitude: (1) using appropriate reasoning about expressions and equations, including modeling an association (correlation) in bivariate data with a linear equation (linear regression), solving linear equations, and solving systems of simultaneous linear equations; (2) developing initial conceptual understanding of a function, using functions to describe quantitative relationships, and describing the behavior of functions; (3) analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem, introducing concepts that will be revisited in their formal Geometry course in high school. This course aligns with the Next Generation New York Learning Standards.		
<u>Target/eligible students</u>	8th graders on the general mathematics track		
<u>State Learning Standards Link(s)</u>	NYS Math Standards		Pgs. 97-104
<u>Primary texts and materials</u>	N-Gen Math 8 (Emathinstruction), Glencoe Math Course 3		
<u>Scope/Sequence</u>	*Standards/ Themes	Description (and location within the state learning standards document)	
<u>Unit 1: Algebra with One Variable</u>	NY-8.EE NY-8.NS	Students will simplify expressions and solve equations in one variable, including solving multi-step equations with variables on both sides.	pgs. 98-100
<u>Unit 2: Geometry</u>	NY-8.G	Students will learn introductory geometric terminology, including how to name sides and angles. They will calculate missing angle measures based on angles' relationships with each other.	pg.102
<u>Unit 3: Transformations</u>	NY-8.G	Students will learn about properties preserved under transformations. From there, they will learn how to identify transformations. Finally, they will translate, reflect, rotate, and dilate figures on the coordinate plane.	pgs. 102- 103
<u>Unit 4: Equations of Lines in Two Variables</u>	NY-8.EE NY-8.SP	Students will recognize that lines in the coordinate plane have a constant rate of change. Students will calculate the rate of change (slope) using a variety of different methods, such as graphically and using a formula. They will do the same with the y-intercept. Students will be able to use one form of representing a linear function (equation, graph, table, coordinates, words, etc.) to derive another form.	pgs. 99,100, 104
<u>Unit 5: Functions</u>	NY-8.F	Students will be introduced to the concept of a function, a concept that will be more fully explored next year in	pg. 101

		Algebra I. Students will be able to determine if a relation is a function, determine minima and maxima of functions, recognize if a function is increasing/decreasing, etc.	
<u>Unit 6: Exponents/Roots/Scientific Notation</u>	NY-8.EE NY-8.NS	Students will simplify expressions involving exponents, using the laws of exponents. They will use the laws of exponents to help them simplify numerical expressions in scientific notation.	pgs.98-100
<u>Unit 7: Volume and Surface Areas</u>	NY-8.G	Students will calculate the volume and surface area of prisms, cylinders, cones, spheres, and composite solids.	pgs. 102-103
<u>Unit 8: Systems of Equations</u>	NY-8.EE	Students will recognize that the solution to a system of two linear equations is an ordered pair that makes both equations true simultaneously. They will solve systems of equations using graphing, substitution, and elimination. They will also model real-world situations using systems of equations.	pgs. 99-100
<u>Unit 9: Statistics</u>	NY-8.SP	Students will create and analyze scatter plots, determine the line of best fit, calculate the equation of the line of best fit, and interpret the parameters of the equation in the context of the situation.	pg. 104
<u>Unit 10: Pythagorean Theorem</u>	NY-8.G	Students will use the Pythagorean Theorem to calculate missing side lengths of right triangles. They will use the converse of the Pythagorean Theorem to prove that a triangle is a right triangle. Finally, they will model real-world situations using the Pythagorean Theorem.	pgs. 102-103
<u>Additional Notes</u>			