Green Township School District 8th Grade Math Curriculum - July 2018

Year Overview by Unit		
Unit 1: Integers & Scientific Notation		***Approximate length: 3 weeks***
NJ Student Learning Standards **8.EE.A.1** **8.EE.A.3** **8.EE.A.4**	***Unit Big Ideas:*** ● Understand exponents as simplified representation of repeated multiplication. ● Exponent Property Laws ● Magnitude & need for scientific notation. ● Operations with numbers written in scientific notation.	***Standards for Mathematical Practice:*** MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning
Unit 2: The Concept of Congruence		***Approximate length: 3 weeks***
NJ Student Learning Standards **8.G.A.1** **8.G.A.2** **8.G.A.5**	***Unit Big Ideas:*** ● Rigid motion transformations: Translation, Rotation & Reflection on two-dimensional figures. ● Angle theorems	***Standards for Mathematical Practice:*** MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.
Unit 3: Similarity & Pythagorean Theorem		***Approximate length: 3 weeks***
NJ Student Learning Standards **8.G.A.3** **8.G.A.4** **8.G.A.5** **8.G.B.6** **8.G.B.7** **8.G.B.8**	***Unit Big Ideas:*** ● Dilations introduced. ● Using sequences of transformations of objects to determine similarity. ● Informal proofs for the Pythagorean Theorem and its converse are explored. ● Use of the Pythagorean Theorem on the	***Standards for Mathematical Practice:*** MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated

		coordinate plane.	reasoning
Unit 4: Linear Equations & Real Numbers			***Approximate length: 10 weeks***
	NJ Student Learning Standards **8.EE.C.7** **8.NS.A.2** **8.G.B.7** **8.EE.A.2** **8.G.B.6** **8.G.B.8** **8.EE.B.5** **8.EE.B.6** **8.EE.C.8**	***Unit Big Ideas:*** ● Foundations of linear and nonlinear equations. ● Rational approximations of irrational numbers. ● Pythagorean theorem and irrational numbers applied as nonlinear equations. ● Evaluating square and cube root equations. ● Proportional relationships and rate of change as slope. ● Systems of equations	***Standards for Mathematical Practice:*** MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning of others. MP.4 Model with Mathematics MP.5 Use appropriate tools strategically. MP.6 Attend to precision. MP.7 Look for and make use of structure. MP.8 Look for and express regularity in repeated reasoning
Unit 5: Examples of Functions from Geometry			***Approximate length: 4 weeks***
	NJ Student Learning Standards **8.F.A.1** **8.F.A.2** **8.F.A.3** **8.F.B.4** **8.G.C.9**	***Unit Big Ideas:*** ● Concepts with functions introduced ● Functions as related to linear equations. ● Functions related to concept of volume.	***Standards for Mathematical Practice:*** MP.1 Make sense of problems and persevere in solving them. MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.5 Use appropriate tools strategically. MP.6 Attend to precision.
Unit 6: Linear Functions & Statistics			***Approximate length: 5 weeks***
	NJ Student Learning Standards **8.F.B.4** **8.F.B.5** **8.SP.A.1** **8.SP.A.2** **8.SP.A.3** **8.SP.A.4**	***Unit Big Ideas:*** ● Concepts with functions as models for linear equations. ● Analyzing qualitative features of functions. ● Association in data (bivariate measurement data)	***Standards for Mathematical Practice:*** MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.6 Attend to precision. MP.7 Look for and make use of structure.

		• Line of best fit and scatter plots • Two-way tables	
Unit 7: Irrational Numbers & Geometry			***Approximate length: 3 weeks***
	NJ Student Learning Standards **8.NS.A.1** **8.NS.A.2** **8.G.C.9** **8.G.B.7**	***Unit Big Ideas:*** • More concepts with rational and irrational numbers • Infinite and finite decimal expansion concepts. • Pythagorean Theorem applied to three dimensional objects.	***Standards for Mathematical Practice:*** MP.2 Reason abstractly and quantitatively. MP.4 Model with mathematics. MP.6 Attend to precision. MP.7 Look for and make use of structure.

References:

NJ Student Learning Standards for 8th Grade Mathematics: Retrieved from: https://www.state.nj.us/education/cccs/2016/math/g08.pdf

Engage NY. (2015). New York Common Core Mathematics Curriculum. Retrieved from https://www.engageny.org/resource/grade-8-mathematics.