Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Range of Assessment Requirements

Quarter I	Quarter II
Tests - Chapter 1 & 2 Quizzes - Chapter 0, 1, 2 Homework / Classwork / Misc - Using Big Ideas and IXL, students will complete independent practice on specific lessons taught.	Tests - Chapter 3, 4, 5 Quizzes - Chapter 3, 4, 5 Homework / Classwork / Misc - Using Big Ideas and IXL, students will complete independent practice on specific lessons taught.
Quarter III	**Quarter IV**
Tests - Chapter 6, 7, 8 Quizzes - Chapter 6, 7, 8 Homework / Classwork / Misc - Using Big Ideas and IXL, students will complete independent practice on specific lessons taught.	Tests - Chapter 9 & 10 Quizzes - Chapter 9 & 10 Homework / Classwork / Misc - Using Big Ideas and IXL, students will complete independent practice on specific lessons taught.

Deptford Township School District Grading Scale

Test **(consistent in number and quality)**	**50%**
Quiz	**30%**
Homework / Classwork / Misc.	**20%**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	Unit I
Overarching Theme	Functions, Equations, and Solutions
Power/Anchor Standards and Evidence of Learning **Non-negotiable** **Suggested**	**Section 1 - Equations** **8.EE.C.7 -** Solve linear equations in one variable. **8EE.C.7a -** Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). **8.EE.C.7b** - Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. **Math Practices** MP.5 Use appropriate tools strategically. MP.6 Attend to precision. **Section 5 - Systems of Linear Equations** **8.EE.C.8** - Analyze and solve pairs of simultaneous linear equations. **8.EE.C.8a** - Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. **8.EE.C.8b** - Solve systems of two linear equations in two variables using the substitution method, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example:by inspection, conclude that, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6 . Solve using the substitution method. Unpacked: 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.EE.C.8c - Solve real-world and mathematical problems leading to two linear equations in two variables.
Unpacked: given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.

MP.1 Make sense of problems and persevere in solving them.
MP.2 Reason abstractly and quantitatively.
MP.6 Attend to precision.
MP.7 Look for and make use of structure.

Section 6 - Functions
8.F.A.1 - Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
(Clarification: Function notation is not required in Grade 8)

MP.2 Reason abstractly and quantitatively.
MP.5 Use appropriate tools strategically.

8.F.A.2 - Compare properties (e.g. rate of change, intercepts, domain and range) of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
Unpacked: given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.

MP.5 Use appropriate tools strategically.
MP.8 Look for and express regularity in repeated reasoning

8.F.A.3 - Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.
Unpacked: the function A = s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

MP.2 Reason abstractly and quantitatively.
MP.3 Construct viable arguments and critique the reasoning of others.
MP.5 Use appropriate tools strategically.

8.F.B.4 - Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

MP.6 Attend to precision.
MP.2 Reason abstractly and quantitatively.
MP.7 Look for and make use of structure.

8.F.B.5 - Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

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.

Acquisition **(knowledge, skills needed to understand)**	**Meaning** **(Why are the students learning this)**	**Transfer** **(Evidence of Learning and Performance Tasks)**
Section 1 8.EE.7 (a - b) • Linear Equations • Inverse	**Section 1** 8.EE.7 (a - b) • Give examples of linear equations in one variable	**Section 1** 8.EE.7 (a - b) • Solve real-life problem • Create equations to solve

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Variable
	• Like Terms
	• Constant
	• Coefficient
	• Distributive Property
	• Commutative Property of Addition
	• Integer
	
	*** Equivalent Equation**
	*** Solution**
	*** Checking a Solution**
	*** Order of Operations**
	*** Reciprocal**
	*** Two-step Equations**
	*** Formulas**
	*** Integers**
	*** Fractions**
	*** Decimals**
	*** Absolute Value**
	*** Expression**
	*** Simplest form**
	*** Opposite**
	*** Inductive Reasoning**
	
	Section 5
	8.EE.C.8 (a-c)
	• Linear Equations
	  ○ Simultaneous
	  ○ Pairs
		with one solution (x = a), infinitely many solutions (a = a), or no solutions (a = b.)
		• Transform a given equation, using the properties of equality, into simpler forms.
		• Transform a given equation until an equivalent equation of the form x = a, a = a, or **a** = b results (a and b are different numbers)
		• Solve linear equations that have fractional coefficients; include equations requiring use of the distributive property and collecting like terms.
		
		*** Simplify expressions**
		***Distribute coefficients**
		
		Section 5
		8.EE.C.8 (a-c)
		• Solve systems of two linear equations in two variables
			word problems
			• Explain the process to solve
			
			• 8.EE.C.7 - The Sign of Solutions
			• 8.EE.C.7 - Coupon versus discount
			
			Section 5
			8.EE.C.8 (a-c)
			• Solve real-world and mathematical problems leading to two linear

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	○ Points on a graph • Variables • Solutions ○ No solution ○ Infinite **Section 6** **8.F.A.1** • Functions • Input/Output • Ordered pairs **8.F.A.2** • Properties of functions	algebraically. • Estimate solutions of a linear system of two equations by graphing. • Solve simple cases of a linear system of two equations by inspection. **Section 6** **8.F.A.1** • Use function language. • Describe a function as providing a single output for each input. • Determine whether non-numerical relationships are functions. • Describe a function as a set of ordered pairs. • Read inputs and outputs from a graph. • Describe the ordered pairs as containing an input, and the corresponding output **8.F.A.2** • Analyze functions represented algebraically, as a table of values, and as a	equations in two variables. • 8.EE.C.8a - Intersection of Two Lines • 8.EE.C.8 - How Many Solutions **Section 6** **8.F.A.1** • 8.F.A.1 - Function Rules **8.F.A.2** • 8.F.A.2 - Battery Charging

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

graph. • Interpret functions represented by a verbal description. • Given two functions, each represented in a different way, compare their properties		
8.F.A.3 • Equation y = mx + b • Graph of straight line	**8.F.A.3** • Analyze tables of values, graphs, and equations in order to classify a function as linear or non-linear. • Determine if equations presented in forms other than y = mx + b (for example 3y − 2x = 7) define a linear function. • Give examples of equations that are non-linear functions. • Show that a function is not linear using pairs of points.	**8.F.A.3** • 8.F.A.3 - Introduction to Linear Functions
8.F.B.4 • (x,y) values • Rate of change	**8.F.B.4** • Determine the rate of change and initial value of a function from a description of a relationship. • Determine the rate of change	**8.F.B.4** • 8.F.B.4 - Chicken and Steak, Variation 1 • 8.F.B.4 - Baseball Cards

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.F.B.5 • Functional relationship between two quantities by analyzing a graph	and initial value of a function from two (x, y) values by reading from a table of values. • Determine the rate of change and initial value of a function from two (x, y) values by reading these from a graph. • Construct a function in order to model a linear relationship. • Interpret the rate of change and initial value of a linear function in context. **8.F.B.5** • Analyze a graph. • Provide qualitative descriptions of graphs (e.g. where increasing or decreasing, linear or non-linear). • Given a verbal description, sketch a graph of a function based on the qualitative features described.	**8.F.B.5**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Standards	**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 & 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. **Technology Standards** **8.1 Educational Technology** - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. **8.2 Technology Education, Engineering, Design, and Computational Thinking / Programming** - All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment. **21st Century Life and Career Standards** **9.1 Personal Financial Literacy** - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers. **9.2 Career Awareness, Exploration, and Preparation** - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements. **9.3 Career and Technical Education** - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.
Enduring	**Unit**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Understanding	• Define, evaluate, and compare functions • Use functions to model relationships between quantities • Analyze and solve linear equations and simultaneous linear equations
Essential Questions **(3-5 per unit)**	**Unit** • How can you use inductive reasoning to discover rules in mathematics? How can you test a rule? • How can you solve one-step equations? • How can you solve two-step equations? • How can you solve equations with variables on both sides? • How can you use a formula for one measurement to write a formula for a different measurement?
Differentiation and Support for Learners Non-negotiable **Suggested** **(additions made after consensus at district PLC meetings)**	**Enrichment** • **Enrichment sheets** • **Menu** • **Game closet from Big Ideas Website** • **Guest speaker - real world application of skills in careers** **Interventions** • **Basic Skills Handbook** • **Skills Review Handbook** • **Menu** • **Small Group Instruction** • **Follow provisions of IEP and 504 plans** **Student Grouping Strategies** • **Pairs** • **Triads** • **Homogeneous** • **Heterogeneous** • **Data-driven**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Resources Non-negotiable Suggested (additions made after consensus at district PLC meetings)	Technology • SMARTboard • Big Ideas Website • Dynamic Classroom • Canvas • Chromebooks • Lesson Videos ex. Edpuzzle.com, ExplainEverything • ELMO • IXL • Quizizz.com, Edulastic.com Readings • Notice & Notes • Record & Practice Journal Activities Manipulatives/Lab Activity Resources • Record & Practice Journal Activities • Balance • Sum of 4 Corners • Interactive mazes/puzzles
Assessment Non-negotiable Suggested	Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.) • Ticket out the door as needed • Menu • Student classwork & homework • Mid-chapter quiz • End of chapter quiz

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Teacher observation of students • Mini-assessments • Type 1,2,3 Writing **Summative (Assessment used as a summary measure of what all students should know at the end of a unit. Goes in gradebook for a grade.)** • Chapter 1 Test A **Benchmark (Assessment used by the teacher for diagnostic purposes to gather data on student readiness and progress toward grade level standards.)** • Linkit! Test

	Unit II
Overarching Theme	Exponents, Expressions, and Equations
Power/Anchor Standards and Evidence of Learning **Non-negotiable** **Suggested**	**Section 4 - Graphing and Writing Linear Equations** **8.EE.B.5** - Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. Unpacked: Compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. MP.2 Reason abstractly and quantitatively. 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.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

MP.8 Look for and express regularity in repeated reasoning

8.EE.B.6 - Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.

MP.2 Reason abstractly and quantitatively.
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.

Section 10 - Exponents and Scientific Notation

8.EE.A.1 - Know and apply the properties of integer exponents to generate equivalent numerical expressions.
Unpacked: $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.

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.
MP.7 Look for and make use of structure.
MP.8 Look for and express regularity in repeated reasoning

8.EE.A.2.a- Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.

8.EE.A.3 - Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other.
Unpacked: Estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9 , and

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

determine that the world population is more than 20 times larger.

MP.2 Reason abstractly and quantitatively.
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.

8.EE.A.4 - Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.

MP. 2 Reason abstractly and quantitatively.
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

Acquisition (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
Section 4 8.EE.B.5 • Quantitative relationships	Section 4 8.EE.B.5 • Graph proportional relationships.	Section 4 8.EE.B.5 • 8.EE.B.5 - Who Has the Best Job?

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Interpret unit rate as the slope of a graph. • Compare two different proportional relationships that are represented in different ways (table of values, equation, graph, verbal description).	
8.EE.B.6 • similar triangles • slope (m) • y = mx • y = mx + b	**8.EE.B.6** • Show, using similar triangles, and explain why the slope, m, is the same between any two distinct points on a non-vertical line. • Derive, from two points, the equation y = mx for a line through the origin. • Derive, from two points, the equation y = mx + b for a line intercepting the vertical axis at b.	**8.EE.B.6** • 8.EE.B.6 - Slopes Between Points on a Line
8.EE.A.1 • Exponents	**8.EE.A.1** • Apply properties of exponents to numerical expressions. • Generate equivalent numerical expressions using positive and negative integer	**8.EE.A.1** • 8.EE.A.1 - Extending the Definitions of Exponents

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.EE.A.3 • Integers • Power of 10 • Scientific notation **8.EE.A.4** • Operations of numbers in scientific notation • Units of measurement	exponents. • Find volume of cones, cylinders and spheres using to solve real world problems. **8.EE.A.3** • Estimate very large and very small quantities with numbers expressed in the form of a single digit times an integer power of 10. • Compare numbers written in the form of a single digit times an integer power of 10 and express how many times as much one is than the other. **8.EE.A.4** • Multiply and divide numbers expressed in scientific notation, including problems in which one number is in decimal form and one is in scientific notation. • Add and subtract numbers expressed in scientific notation, including problems in which one number is in decimal form and one is in	**8.EE.A.3** • 8.EE.A.3 - Ant and Elephant **8.EE.A.4** • 8.EE.A.4 - Giantburgers

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

		scientific notation. • Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities. • Interpret scientific notation that has been generated by technology (e.g. recognize 4.1E-2 and 4.1e-2 as 4.1×10^{-2}).	

Standards	**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 & 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. **Technology Standards** **8.1 Educational Technology** - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. **8.2 Technology Education, Engineering, Design, and Computational Thinking / Programming** - All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	thinking and the designed world as they relate to the individual, global society, and the environment. **21st Century Life and Career Standards** **9.1 Personal Financial Literacy** - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers. **9.2 Career Awareness, Exploration, and Preparation** - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements. **9.3 Career and Technical Education** - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.
Enduring Understanding	**Unit** • Work with integer exponents • Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres • Know that there are numbers that are not rational, and approximate them by rational numbers • Understand the connections between proportional relationships, lines, and linear equations
Essential Questions **(3-5 per unit)**	**Unit** • How can you solve one-, two-, multi-step equations? • How can you use exponents and their rules to write numbers? • How are exponents used in Scientific Notation? • How can you use the slope of a line to describe the line?
Differentiation and Support for Learners **Non-negotiable** **Suggested**	**Enrichment** • **Enrichment sheets** • **Menu** • **Game closet from Big Ideas Website**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

(additions made after consensus at district PLC meetings)	• Guest speaker - real world application of skills in careers Interventions • Basic Skills Handbook • Skills Review Handbook • Menu • Small Group Instruction • Follow provisions of IEP and 504 plans Student Grouping Strategies • Pairs • Triads • Homogeneous • Heterogeneous • Data-driven
<u>Resources</u> Non-negotiable Suggested (additions made after consensus at district PLC meetings)	Technology • SMARTboard • Big Ideas Website • Dynamic Classroom • Canvas • Chromebooks • Lesson Videos ex. Edpuzzle.com, ExplainEverything • ELMO • IXL • Quizizz.com, Edulastic.com Readings • Notice & Notes

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Record & Practice Journal Activities Manipulatives/Lab Activity Resources • Record & Practice Journal Activities • Balance • Sum of 4 Corners • Interactive mazes/puzzles
<u>Assessment</u> Non-negotiable Suggested	Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.) • Ticket out the door as needed • Menu • Student classwork & homework • Mid-chapter quiz • End of chapter quiz • Teacher observation of students • Mini-assessments • Type 1,2,3 Writing Summative (Assessment used as a summary measure of what all students should know at the end of a unit. Goes in gradebook for a grade.) • Chapter 1 Test A Benchmark (Assessment used by the teacher for diagnostic purposes to gather data on student readiness and progress toward grade level standards.) • Linkit! Test

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	Unit III
Overarching Theme	Geometry: Pythagorean Theorem, Congruence and Similarity Transformations
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Section 2 - Transformations** **8.G.A.1** - Verify experimentally the properties of rotations, reflections, and translations: **8.G.A.1a**. - Lines are transformed to lines, and line segments to line segments of the same length. **8.G.A.1b**. - Angles are transformed to angles of the same measure. **8.G.A.1c**. - Parallel lines are transformed to parallel lines. MP.3 Construct viable arguments and critique the reasoning of others. MP.5 Use appropriate tools strategically. MP.8 Look for and express regularity in repeated reasoning **8.G.A.2** - Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. MP.2 Reason abstractly and quantitatively. MP.7 Look for and make use of structure **8.G.A.3** - Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. MP.2 Reason abstractly and quantitatively. MP.3 Construct viable arguments and critique the reasoning. of others. MP.5 Use appropriate tools strategically

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.G.A.4. - Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
MP.2 Reason abstractly and quantitatively.
MP.7 Look for and make use of structure.

Section 3 - Angles and Triangles

8.G.A.5 - Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles.
Unpacked: Arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.

Section 7 - Real Numbers and the Pythagorean Theorem

8.EE.A.2 - Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number.

- 8.EE.A.2.a - Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.
- 8.EE.A.2.b - Simplify numerical radicals, limiting to square roots (i.e. nonperfect squares). For example, simplify $\sqrt{8}$ to $2\sqrt{2}$.

MP.2 Reason abstractly and quantitatively.
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.

8.G.B.6 - Explain a proof of the Pythagorean Theorem and its converse.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

MP.2 Reason abstractly and quantitatively.

8.G.B.7 - Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.

MP.2 Reason abstractly and quantitatively.
MP.7 Look for and make use of structure.

8.G.B.8 - Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

MP.2 Reason abstractly and quantitatively.
MP.7 Look for and make use of structure.

8.NS.A.1 - Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

MP. 2 Reason abstractly and quantitatively.

8.NS.A.2 - Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., $\pi 2$). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.

MP.1 Make sense of problems and persevere in solving them.
MP.4 Model with mathematics.
MP.5 Use appropriate tools strategically.

8.NA.A.3 Understand that the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Section 8 - Volume and Similar Solids

8.G.C.9 - Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real world and mathematical problems. **Students may solve real-world mathematical problems involving the physical properties of the principle gasses that cause climate change molecules.**

Statistics and Probability
8.SP
A. Investigate patterns of association in bivariate data.

- Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. Students may investigate patterns of association in bivariate data involving the amount of greenhouse gas in the atmosphere and its effect on temperature.
- Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit (e.g. line of best fit) by judging the closeness of the data points to the line.
- Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. Students may use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept involving the physical properties of the principle gasses that cause climate change.
- Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Acquisition (knowledge, skills needed to understand)	Meaning (Why are the students learning this)	Transfer (Evidence of Learning and Performance Tasks)

Section 2
 	
8.G.A.1 (a - c)
• Transformations
  ○ Reflections
  ○ Rotations
  ○ Translations
	Section 2
	
	8.G.A.1 (a - c)
	• Show and explain that performing rotations, reflections, and translations on lines results in a line.
	• Show and explain that performing rotations, reflections, and translations on line segments results in a line segment and does not alter the length of the line segment.
	• Show and explain that performing rotations, reflections, and translations on angles results in an angle and does not alter the measure of the angle.
	• Show and explain that performing rotations, reflections, and translations on parallel lines results in parallel lines.
	• Explain that a property of
		Section 2
		
		8.G.A.1 (a - c)
		• 8.G.A.1 - Reflections, Rotations, and Translations

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

		rigid motion transformations (rotation, reflection, and translation) is that the measure of a two-dimensional object under the transformation remains unchanged.	
	8.G.A.2 • Congruence • Transformations	**8.G.A.2** • Given two congruent figures, describe a transformation or sequence of transformations that shows the congruence between them.	**8.G.A.2** • 8.G.A.2 - Congruent Triangles
	8.G.A.3 • Transformations • two-dimensional figures • Coordinates.	**8.G.A.3** • Describe, using coordinates, the resulting two-dimensional figure after applying dilations with scale factor greater than, less than, and equal to 1. • Describe, using coordinates, the resulting two-dimensional figure after applying translation, rotation, and reflection.	**8.G.A.3** • 8.G.A.3 - Effects of Dilations on Length, Area, and Angles
		8.G.A.4 • Describe a transformation or	**8.G.A.4**

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.G.A.4 • Similar figures (2-D) • Congruent Figures • Transformations **Section 3** **8.G.A.5** • Triangles • Exterior Angles • Angles • Parallel Lines • Transversal **Section 7** **8.EE.A.2** • Square root • Cube root	sequence of transformations that show the similarity between them given two similar two-dimensional figures. **Section 3** **8.G.A.5** • Give informal arguments to establish facts about the angle sum of triangles. • Give informal arguments to establish facts about exterior angles of triangles. • Give informal arguments to establish facts about the angles created when parallel lines are cut by a transversal. • Give informal arguments to establish the angle-angle criterion for similarity of triangles. **Section 7** **8.EE.A.2** • Give the value of square roots of small perfect squares. • Solve equations of the form $x^2 = p$, where p is a positive rational number.	• 8.G.A.4 - Are They Similar? **Section 3** **8.G.A.5** • 8.G.A.5 - Street Intersections • 8.G.A.5 - Similar Triangles II • 8.G.A.5 - Triangle's Interior Angles **Section 7** **8.EE.A.2** •

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Perfect Squares • Perfect Cubes • Inverse relationship • Irrational numbers **8.G.B.6** • Pythagorean Theorem • Side lengths of right triangle	• Use the square root symbol to represent solutions to equations of the form $x^2 = p$. • Give the value of cube roots of small perfect cubes. • solve equations of the form $x^3 = p$, where p is a positive rational number. • use the cube root symbol to represent solutions to equations of the form $x^3 = p$. • Show or explain that $\sqrt{2}$ is an irrational number. • Use volume formulas to find a single unknown dimension of cones, cylinders and spheres when solving real world problems. **8.G.B.6** • Given a proof of the Pythagorean theorem, explain the proof. • Given a proof of the converse of the Pythagorean theorem, explain the proof. **8.G.B.7** • Determine side lengths of right triangles by applying	**8.G.B.6** • 8.G.B.6 - Converse of the Pythagorean Theorem

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.G.B.7 • Pythagorean Theorem • Side lengths of right triangle	the Pythagorean Theorem to solve real world and mathematical problems involving two dimensional spaces. • Determine side lengths of right triangles by applying the Pythagorean Theorem to solve real world and mathematical problems involving three dimensional spaces.	**8.G.B.7** • 8.G.B.7 - Running on the Football Field
8.G.B.8 • Pythagorean Theorem • Distance between two points in coordinate plane	**8.G.B.8** • Determine the distance between two points in a coordinate plane by drawing a right triangle and applying the Pythagorean Theorem.	**8.G.B.8** • 8.G.B.8 - Finding isosceles triangles • 8.G.B.8 - Finding the distance between points
8.NS.A.1 • Numbers that are not rational are irrational. • Every number has a decimal expansion.	**8.NS.A.1** • Compare decimal expansions of rational and irrational numbers. • Represent a rational number with its decimal expansion, showing that it repeats eventually. • Convert a decimal expansion (which repeats eventually)	**8.NS.A.1** (could be taught in unit I) • 8.NS.A.1 - Converting Decimal Representations of Rational Numbers to Fraction Representations

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

8.NS.A.2
• Rational approximation of irrational numbers
 	
Section 8
8.G.C.9
• Volume
  ○ Cones
  ○ Cylinders
  ○ Spheres
	into a rational number.
	
	8.NS.A.2
	• Compare irrational numbers by replacing each with its rational approximation.
	• Locate rational approximations on a number line.
	• Estimate the value of expressions containing irrational numbers
	
	Section 8
	8.G.C.9
	• Solve equations of the form $x^3 = p$, where p is a positive rational number.
	• Use the cube root symbol to represent solutions to equations of the form $x^3 = p$.
	• Show or explain that $\sqrt{2}$ is an irrational number.
	• Use volume formulas to find a single unknown dimension of cones, cylinders and spheres when solving real world problems.
		8.NS.A.2 (could be taught in unit I)
		• 8.NS.A.2 - Irrational Numbers on the Number Line
		
		Section 8
		8.G.C.9

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Standards	**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 & 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. **Technology Standards** **8.1 Educational Technology** - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. **8.2 Technology Education, Engineering, Design, and Computational Thinking / Programming** - All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment. **21st Century Life and Career Standards** **9.1 Personal Financial Literacy** - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers. **9.2 Career Awareness, Exploration, and Preparation** - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements. **9.3 Career and Technical Education** - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

Enduring Understanding	• Work with radicals and integer exponents • Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres • Understand and apply the Pythagorean Theorem • Understand congruence and similarity using physical models, transparencies, or geometry software
Essential Questions (3-5 per unit)	• How can you determine if figures are congruent? • Can you explain the difference between each transformation? • How can you describe angles formed by parallel lines and transversals? • How are the lengths of the sides of a right triangle related?
Differentiation and Support for Learners Non-negotiable Suggested (additions made after consensus at district PLC meetings)	**Enrichment** • Enrichment sheets • Menu • Game closet from Big Ideas Website • Guest speaker - real world application of skills in careers **Interventions** • Basic Skills Handbook • Skills Review Handbook • Menu • Small Group Instruction • Follow provisions of IEP and 504 plans **Student Grouping Strategies** • Pairs • Triads

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Homogeneous • Heterogeneous • Data-driven
Resources Non-negotiable Suggested (additions made after consensus at district PLC meetings)	Technology • SMARTboard • Big Ideas Website • Dynamic Classroom • Canvas • Chromebooks • Lesson Videos ex. Edpuzzle.com, ExplainEverything • ELMO • IXL • Quizizz.com, Edulastic.com Readings • Notice & Notes • Record & Practice Journal Activities Manipulatives/Lab Activity Resources • Record & Practice Journal Activities • Balance • Sum of 4 Corners • Interactive mazes/puzzles
Assessment Non-negotiable Suggested	Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.) • Ticket out the door as needed

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• Menu • Student classwork & homework • Mid-chapter quiz • End of chapter quiz • Teacher observation of students • Mini-assessments • Type 1,2,3 Writing **Summative (Assessment used as a summary measure of what all students should know at the end of a unit. Goes in gradebook for a grade.)** • Chapter Test A **Benchmark (Assessment used by the teacher for diagnostic purposes to gather data on student readiness and progress toward grade level standards.)** • Linkit! Test

	Unit IV		
Overarching Theme	Algebra I skills		
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	• •
Standards	**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 & 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. **Technology Standards** **8.1 Educational Technology** - All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge. **8.2 Technology Education, Engineering, Design, and Computational Thinking / Programming** - All students will develop an understanding of the nature and impact of technology, engineering, technological design, computational thinking and the designed world as they relate to the individual, global society, and the environment.

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	21st Century Life and Career Standards **9.1 Personal Financial Literacy** - This standard outlines the important fiscal knowledge, habits, and skills that must be mastered in order for students to make informed decisions about personal finance. Financial literacy is an integral component of a student's college and career readiness, enabling students to achieve fulfilling, financially-secure, and successful careers. **9.2 Career Awareness, Exploration, and Preparation** - This standard outlines the importance of being knowledgeable about one's interests and talents, and being well informed about postsecondary and career options, career planning, and career requirements. **9.3 Career and Technical Education** - This standard outlines what students should know and be able to do upon completion of a CTE Program of Study.
Enduring Understanding	• Investigate patterns of association in bivariate data • Use functions to model relationships between quantities • Understand and apply the Pythagorean Theorem • Analyze and solve linear equations and simultaneous linear equations
Essential Questions (3-5 per unit)	• What are the three methods for solving Systems of Linear Equations? • How can you represent a function in different ways? • Can you describe the difference between linear and nonlinear?
Differentiation and Support for Learners Non-negotiable Suggested (additions made after consensus at district	**Enrichment** • Enrichment sheets • Menu • Game closet from Big Ideas Website • Guest speaker - real world application of skills in careers

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

PLC meetings)	Interventions • Basic Skills Handbook • Skills Review Handbook • Menu • Small Group Instruction • Follow provisions of IEP and 504 plans Student Grouping Strategies • Pairs • Triads • Homogeneous • Heterogeneous • Data-driven
Resources Non-negotiable Suggested (additions made after consensus at district PLC meetings)	Technology • SMARTboard • Big Ideas Website • Dynamic Classroom • Canvas • Chromebooks • Lesson Videos ex. Edpuzzle.com, ExplainEverything • ELMO • IXL • Quizizz.com, Edulastic.com Readings • Notice & Notes • Record & Practice Journal Activities

Deptford Township Public Schools
Curriculum Template

Subject: Mathematics	Grade: 8th

	Manipulatives/Lab Activity Resources • Record & Practice Journal Activities • Balance • Sum of 4 Corners • Interactive mazes/puzzles
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** • Ticket out the door as needed • Menu • Student classwork & homework • Mid-chapter quiz • End of chapter quiz • Teacher observation of students • Mini-assessments • Type 1,2,3 Writing **Summative (Assessment used as a summary measure of what all students should know at the end of a unit. Goes in gradebook for a grade.)** • Chapter Test A **Benchmark (Assessment used by the teacher for diagnostic purposes to gather data on student readiness and progress toward grade level standards.)** • Linkit! Test