Northampton Area School District
Year at a Glance

NORTHAMPTON AREA SCHOOL DISTRICT
Learn, Listen, and Lead

College Ready Mathematics

Board Approval Date: August 27, 2018

Common Units of Study with Sample Lesson Topics	Estimated % of Course Time	Estimated Time	Big Idea (s)	PA Academic Standard(s)
❖ Mechanics and Mindset of a Good Student	1%	2 days	❖ How to pace yourself through the course. ❖ Study habits for math class.	
❖ Unit 1: Operations with Real Numbers & Variables. ● Students will be able to add, subtract, multiply, divide, and evaluate exponents without a calculator (multiplication up to 12 x 12 and exponents up to 12^2). ● Students will be able to substitute and evaluate algebraic expressions using the order of operations.	8%	15 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. ❖ Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools.	CC.2.1.HS.F1 CC.2.1.HS.F.2 CC.2.2.HS.D.1 CC.2.2.HS.D.2 CC.2.2.HS.D.3
❖ Unit 2: Solving Equations & Inequalities. ● Students will be able to solve multi-step equations and inequalities. ● Students will be able write equations and inequalities to model problem situations.	8%	15 days	❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.	CC.2.2.HS.D.8 CC.2.2.HS.D.9

			❖ Numerical quantities, calculations, and measurements can be estimated or analyzed by using appropriate strategies and tools. ❖ Patterns exhibit relationships that can be extended, described, and generalized.	
❖ Unit 3: Linear Equations & Functions. ● Students will be able to graph and write a linear equation. ● Students will be able to model a situation with a linear equation. ● Students will be able to identify a linear function and state the domain and range of both continuous and discrete functions.	11%	20 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. ❖ Patterns exhibit relationships that can be extended, described, and generalized. ❖ Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions. ❖ Data can be modeled and used to make inferences.	CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.C.5 CC.2.2.HS.C.6 CC.2.2.HS.D.4 CC.2.2.HS.D.7 CC.2.2.HS.D.10
❖ Unit 4: Systems of Linear Equations ● Students will be able to solve a system of equations by graphing, substitution, and elimination. ● Students will be able to construct their own system of equations to model a problem situation.	11%	20 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations	CC.2.2.HS.D.10

			and inequalities in mathematical situations. ❖ Patterns exhibit relationships that can be extended, described, and generalized. ❖ Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions. .	
❖ Unit 5: Polynomial Operations ● Students will be able to add, subtract, and multiply monomials, binomials, and trinomials. ● Students will be able to simplify and explain why they are able to use the following rules of exponents: zero exponent, negative exponent, product of powers, quotient of powers, power of a power, and quotient of powers.	8%	15 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.	CC.2.2.HS.D.1 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.4 CC.2.2.HS.D.5
❖ Unit 6: Factoring Polynomials ● Students will be able factor out a greatest common factor from a polynomial. ● Students will be able to factor a quadratic trinomial into two binomials. ● Students will be able to factor a polynomial using the factor by grouping method.	8%	15 days	❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. ❖ Patterns exhibit relationships that can be extended, described, and generalized.	CC.2.2.HS.D.1 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.4 CC.2.2.HS.D.5 CC.2.2.HS.D.8

❖ Unit 7: Quadratic Functions ● Students will be able to graph a quadratic function in standard form, vertex form, and intercept. ● Students will be able to solve a quadratic equation using the quadratic formula, by factoring, completing the square, graphing, and taking a square root. ● Students will be able to model the flight of a baseball and a dropped object using a quadratic equation.	11%	20 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations. ❖ Patterns exhibit relationships that can be extended, described, and generalized. ❖ Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions.	CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.4 CC.2.2.HS.C.5 CC.2.2.HS.C.6 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.4 CC.2.2.HS.D.5 CC.2.2.HS.D.7 CC.2.2.HS.D.8 CC.2.2.HS.D.9 CC.2.2.HS.F.6 CC.2.2.HS.F.7
❖ Unit 8: Rational Expressions, Equations, & Functions. ● Students will be able to simplify a rational expression into its simplest form. ● Students will be able to identify any discontinuities in a rational function and then graph the function. ● Students will be able to solve a rational equation (highest degree is 2).	8%	15 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.	CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.6 CC.2.2.HS.D.2 CC.2.2.HS.D.3 CC.2.2.HS.D.4 CC.2.2.HS.D.6 CC.2.2.HS.D.8 CC.2.2.HS.D.9
❖ Unit 9: Graphs, Relations, and Functions. ● Students will be able to graph and write a linear function. ● Students will be able to identify and write the domain and range of both a discrete and continuous functions.	8%	15 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations	CC.2.2.HS.C.1 CC.2.2.HS.C.2 CC.2.2.HS.C.3 CC.2.2.HS.C.5 CC.2.2.HS.C.6 CC.2.2.HS.D.1 CC.2.2.HS.D.2

● Students will be able to determine if a relation is also a function. ● Students will be able to make their own linear model for a given situation. ● Students will be able to solve and graph and compound inequality. ● Students will be able to solve an absolute value equation.			and inequalities in mathematical situations. ❖ Patterns exhibit relationships that can be extended, described, and generalized. ❖ Mathematical relations and functions can be modeled through multiple representations and analyzed to raise and answer questions. ❖ Data can be modeled and used to make inferences.	CC.2.2.HS.D.4 CC.2.2.HS.D.7 CC.2.2.HS.D.10
❖ Unit 10: Radical Expressions & Rational Exponents ● Students will be able to add, subtract, and divide radical expressions. ● Students will be able to simplify an expression with rational exponents. ● Students will be able to solve a radical equation.	8%	15 days	❖ Mathematical relationships among numbers can be represented, compared, and communicated. ❖ Mathematical relationships can be represented as expressions, equations and inequalities in mathematical situations.	CC.2.2.HS.D.1 CC.2.2.HS.D.2 CC.2.2.HS.D.8 CC.2.2.HS.D.9 CC.2.2.HS.F.1 CC.2.1.HS.F.2
❖ NCC College Ready Course	10%	18 days		