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|  **Fort Lee Public Schools** **2016-2017 Algebra I Unit Plan** Mindful Teachers...Mindful Design...Mindful Students  | **Administrative Comments:** |

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| **Unit Plan Details****Teacher:** Carrie Wiederholz **Unit Time Frame:** 16 days **Grade/Course:** 8th Grade/ Algebra I**Unit of Study:** Quadratic Functions and Equations **Essential Questions:*** What are the characteristics of quadratic functions?
* How can you solve a quadratic equation?
* How can you use functions to model real-world situations?
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| **Unit Title: An Introduction to Functions** |
| **Standards:****NJCCCS/CCSS** | A.APR.3 Identify zeros of polynomials when suitable factorizations are available and use the zeros to construct a rough graph of the function defined by the polynomial.A.CED.2 Create equations in two variables to represent the relationships between quantites.F.IF.7.a Graph linear and quadratic functions and show intercepts, maxima and minima.F.LE.1.a Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.A.REI.4a Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p)2 = q that has the same solutions. Derive the quadratic formula from this form.A.REI.4.b Solve quadratic equations by inspection, taking square roots, completing the square, the quadratic formula and factoring as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a +/- bi for real numbers a and b.A.REI.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. |
| **Technology Standards:** | 8.1.8.a – Appropriately use the scientific and graphing calculator when solving problems and recognize if an answer makes sense. Appropriate Google Classroom Behavior **8.1.8.D.1**-Appropriate Technology Terms **8.2.8.E.4** |
| **21st Century Themes & Skills:** | Ticket out the door **C.7**Paper Slides Video  **A.3**Student Presentations **A.3**Think, Pair, & Share **A1, C7, C9**Setting up unit pacing via newsletter and teacher pages **C.8**Google Classroom, teacher pages to post homework assignments and upcoming tests, IXL, Genesis, flip classroom videos **B4 & B6** |
| **Life and Career Practices:** | **CRP5 TB page 550 # 26 (Dropped Object) and # 27 (Nature)** **CRP9 TB page 557 # 31 Business****CRP8 TB page 565 #50 Physics****CRP4 TB page 571 #28 Construction****CRP2 TB page 580 #33 Landscaping****CRP2 TB page 587 #22 (Football) and #42 (Sports)****CRP1 TB page 587 #41 Think About a Plan** **CRP5 TB page 593 #24 Zoology****CRP9 TB page 600 # 32 Business** |
| **Objectives:** | 9-1 To graph quadratic functions of the form y = ax2 and y=ax2 + c9-2 To graph quadratic functions of the form y = ax2 + bx + c9-3 To solve quadratic equations by graphing and using square roots.9-4 To solve quadratic equations by factoring.9-5 To solve quadratic equations by completing the square.9-6 To solve quadratic equations using the quadratic formula. To find the number of solutions of a quadratic equation.  |
| **Activities:** | * Practice problems
* Notes from smart board presentation
* Think, pair share
* Scavenger Hunt
* Quizizz
* Socrative
* Quizlet
* Google forms
* Partner Drawing activity
* Task cards
* Clearboards
* IXL Practice
* Carousel
* Review Game
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| **Assessments:** | * Class participation
* Practice problems
* Homework
* Plickers
* Exit Ticket
* Quizzes
* Angry Birds Performance Assessment
* Unit Test
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| **Differentiation:****Content, Process, Product** | Pair visual prompts with verbal presentations.Ask students to restate information, directions, and assignments.Repetition and practice.Model skills / techniques to be mastered. Extended time to complete class work.  |