PCSD Lesson Planning Template

Grade Level 9th Algebra I	**Teacher/Room**: S. Pinson/Room 182	Week of: March 6-10, 2017

Unit Vocabulary: see attached

Instructional Strategies Used: direct instruction, independent study, interactive instruction, partners

Day 1	Day 2	Day 3	Day 4	Day 5
GSE Standard(s): **MGSE9–12.A.SSE.3a** Factor any quadratic expression to reveal the zeros of the function defined by the expression.	**GSE Standard(s)**: **MGSE9–12.A.SSE.3a** Factor any quadratic expression to reveal the zeros of the function defined by the expression.	**GSE Standard(s)**: **MGSE9–12.A.REI.4b** Solve quadratic equations by taking square roots, factoring, completing the square, and the quadratic formula, as appropriate to the initial form of the equation.	**GSE Standard(s)**: **MGSE9–12.A.REI.4b** Solve quadratic equations by taking square roots, factoring, completing the square, and the quadratic formula, as appropriate to the initial form of the equation	**GSE Standard(s)**: **MGSE9–12.A.SSE.3a** Factor any quadratic expression to reveal the zeros of the function defined by the expression.
EQ Question: How are factors and zeros related?	**EQ Question:** How are factors and zeros related?	**EQ Question:** How can the quadratic formula be used to find the zeros of a quadratic function?	**EQ Question:** How can the quadratic formula be used to find the zeros of a quadratic function?	**EQ Question:** How do I choose the most efficient method of solving quadratic equations?
Mini Lesson Review Questions **Activating Strategies:** Factor and Graph – what is the relationship? **Lesson:** Solving Quadratics by Factoring 1. Power Point with Guided Notes 2. Guided Practice 3. Assignment **Resource/Materials:** Powerpoint, worksheets, guided notes	**Mini Lesson:** Computer Lab **Activating Strategies:** How many solutions does each equation have? **Lesson:** Solving Quadratics by Factoring 1. More practice on solving quadratics by factoring (whiteboards) 2. Tic-Tac-Toe 3. Assignment **Resource/Materials:** Powerpoint, tic-tac-toe, whiteboards, logins	**Mini Lesson:** Who Killed Mr. Zero? (Partners) **Activating Strategies:** Filling out graphic organizer for Interactive Notebook **Lesson:** Solving Quadratics by Quadratic Formula 1. Power point with guided notes. 2. Guided Practice 3. Assignment **Resource/Materials:** Powerpoint, guided notes, worksheets	**Mini Lesson:** Computer Lab **Activating Strategies:** Journal Entry – which method do you like for solving quadratics? **Lesson:** Solving Quadratics by Quadratic Formula (continued) 1. More Guided Practice (white boards) 2. Quadratic Formula Matching Mania (Partners) 3. Assignment **Resource/Materials:** Powerpoint, Matching Mania, logins	**Mini Lesson:** Review Questions **Activating Strategies:** Questions for Teacher **Lesson:** Solving Quadratics by Factoring and Quadratic Formula 1. Quick Review 2. Quizzes over review material and solving quadratics by factoring and quadratic formula **Resource/Materials:** Powerpoint, quizzes
Differentiation: *Content/Process/Product:* Guided Notes, White Boards, *Grouping Strategy:* *Assessment:*	**Differentiation:** *Content/Process/Product:* whiteboards, USATestPrep, tic-tac-toe *Grouping Strategy:* *Assessment:*	**Differentiation:** *Content/Process/Product:* Guided Notes, White Boards, Graphic Organizer *Grouping Strategy:* Partners *Assessment:* teacher observation	**Differentiation:** *Content/Process/Product:* White Boards, USATestPrep *Grouping Strategy:* Partners *Assessment:* teacher observation	**Differentiation:** *Content/Process/Product:* whiteboards *Grouping Strategy:* *Assessment:*
Assessment : *Formative:* thumbs up/down, whiteboards *Summative:*	**Assessment :** *Formative:* thumbs up/down, Whiteboards *Summative:*	**Assessment :** *Formative:* thumbs up/down, whiteboards *Summative:*	**Assessment :** *Formative:* thumbs up/down, whiteboards *Summative:*	**Assessment :** *Formative:* thumbs up/down, quiz *Summative:*
Homework: Day1 – Factoring and Solving When a=1	**Homework**: Day2 – Factoring and Solving when a≠1	**Homework**: Day5 -Solving Quadratics with Quadratic Formula WS	**Homework**: Solving Quadratics with Quadratic Formula WS	**Homework**: none

- **Complete factorization over the integers**. Writing a polynomial as a product of polynomials so that none of the factors is the number 1, there is at most one factor of degree zero, each polynomial factor has degree less than or equal to the degree of the product polynomial, each polynomial factor has all integer coefficients, and none of the factor polynomial can written as such a product.

- **Completing the square**. Completing the Square is the process of converting a quadratic equation into a perfect square trinomial by adding or subtracting terms on both sides.

- **Difference of two squares**. A squared (multiplied by itself) number subtracted from another squared number. It refers to the identity $a^2 - b^2 = (a + b)(a - b)$ in elementary algebra.

- **Discriminant of a quadratic equation**. The discriminant of a quadratic equation of the form ax^2 + bx+ c = 0, a ≠ 0, is the number b^2 − 4ac.

- **Horizontal shift**. A rigid transformation of a graph in a horizontal direction, either left or right.

- **Perfect square trinomial**. A trinomial that factors into two identical binomial factors.

- **Quadratic equation**. An equation of degree 2, which has at most two solutions.

- **Quadratic function**. A function of degree 2 which has a graph that "turns around" once, resembling an umbrella–like curve that faces either right–side up or upside down. This graph is called a parabola.

- **Root**. The x–values where the function has a value of zero.

- **Standard form of a quadratic function**. ax^2 + bx + c

- **Vertex**. The maximum or minimum value of a parabola, either in terms of y if the parabola is opening up or down, or in terms of x if the parabola is opening left or right.

- **Vertex form of a quadratic function**. A formula for a quadratic equation of the form f (x) = a (x − h) ^{2} + k, where a is a nonzero constant and the vertex of the graph is the point (h, k).