# PCSD Lesson Planning Template

| Grade Level 9th Algebra I | **Teacher/Room**: S. Pinson/Room 182 | | Week of: April 10-14, 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.F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. | **GSE Standard(s)**: **MGSE9–12.F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. | **GSE Standard(s)**: **MGSE9–12.A.CED.1** Create equations and inequalities in one variable and use them to solve problems. | **GSE Standard(s)**: **MGSE9–12.F.IF.7a** Graph linear and quadratic functions and show intercepts, maxima, and minima. | **GSE Standard(s)**: **MGSE9–12.A.CED.1** Create equations and inequalities in one variable and use them to solve problems. |
| **EQ Question:** How do I interpret quadratic functions in context? | **EQ Question:** What do the coefficients of a quadratic function tell you about its graph? | **EQ Question:** How can you solve problems using graphs of quadratic functions? | **EQ Question:** What do the coefficients of a quadratic function tell you about its graph? | **EQ Question:** How can you solve problems using graphs of quadratic functions? |
| **Mini Lesson:** Review Questions<br>**Activating Strategies:** Factoring Polynomials<br>**Lesson:** Factored Form of Quadratic Functions<br>1. Powerpoint with Guided Notes<br>2. Guided Practice<br>3. Assignment<br>**Resource/Materials:** Power Point, Guided Notes, Worksheets | **Mini Lesson:** Computer Lab<br>**Activating Strategies:** Graph, using the three forms of quadratics. Which one Is easier?<br>**Lesson:** Different Forms of Quadratic Functions<br>1. Guided Practice<br>2. Assignment<br>**Resource/Materials:** Worksheets, Quizzes | **Mini Lesson:** Review Questions<br>**Activating Strategies:** Application Problem<br>**Lesson:** Applications with Quadratic Functions<br>1. Guided Notes<br>2. Guided Practice<br>3. Assignment<br>**Resource/Materials:** Guided Notes, logins, worksheets | **Mini Lesson:** Computer Lab<br>**Activating Strategies:** Write the Three Forms<br>**Lesson:** Comparing Quadratic Functions<br>1. Guided Notes<br>2. Guided Practice<br>3. Assignment<br>**Resource/Materials:** Guided Notes, Worksheets | **Mini Lesson:** Review Questions<br>**Activating Strategies:** what do you think should be on the study guide?<br>**Lesson:**<br>1. Quiz: Weekly review material<br>2. Review for next week's test<br>**Resource/Materials:** Guided Notes, logins, worksheets |
| **Differentiation:**<br>*Content/Process/Product:* Guided notes<br>*Grouping Strategy:*<br>*Assessment:* | **Differentiation:**<br>*Content/Process/Product:* USATestPrep<br>*Grouping Strategy:*<br>*Assessment:* | **Differentiation:**<br>*Content/Process/Product:* Guided notes<br>*Grouping Strategy:*<br>*Assessment:* | **Differentiation:**<br>*Content/Process/Product:* Guided Notes, *USATestPrep*<br>*Grouping Strategy:*<br>*Assessment:* | **Differentiation:**<br>*Content/Process/Product:* Guided notes<br>*Grouping Strategy:*<br>*Assessment:* |
| **Assessment:**<br>*Formative:* thumbs up/down<br>*Summative:* | **Assessment:**<br>*Formative:* thumbs up/down<br>*Summative:* | **Assessment:**<br>*Formative:* thumbs up/down<br>*Summative:* | **Assessment:**<br>*Formative:* thumbs up/down<br>*Summative:* | **Assessment:**<br>*Formative:* thumbs up/down, quiz<br>*Summative:* |
| **Homework**: Factored Form HW | **Homework**: Day9DifferentForms WS | **Homework**: Day10Applications WS | **Homework**: Day11Comparing Three FormsWS | **Homework**: Day10Applications WS |

- **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 $ax^2 + bx + c = 0$, $a \neq 0$, 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).