**Connecticut Common Core Algebra 2 Curriculum**

**Professional Development Plan**

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| **Unit 2 Quadratic Functions** | | |
| **Date:** | **Location:** | |
| **Presenters** | | |
| **Schedule for the day:**  **Start time:** 1 PM  **End time:** 4 PM   * + **Opening: 1:00 - 1:15 pm**   + **Session 1: 1:20 - 2:00 pm**   + **Session 2: 2:05 - 2:45 pm**   + **Session 3: 2:55 - 3:35 pm**   + **Closing: 3:40 - 4:00 pm** | | |
| **Opening Session**:  Overview of Unit 2 on Quadratic Functions. Emphasis on connections to advanced ideas in mathematics, the properties of the complex numbers, and realistic applications of quadratic functions. **Power Point for Unit 2.**  Address the issue of classes that did not do unit 8 in Algebra 1 or who only did part of unit 8. Refer them to the scheduling document which provides 3 sequences of pacing determined by a district’s implementation of the algebra work completed in grade 8 and work completed in Algebra 1.  Have each teacher write suggestions for improving the curriculum on 3x5 notecards to be handed in at the closing session. | | |
| **Workshop 1** | | **Presenter:** |
| **Activities:** 2.3.1 Closure and Sets of Numbers  Participants explore sets of numbers (natural, integer, rational, irrational, real) in terms of closure under addition and multiplication. q + r is irrational if q is rational and r is irrational. | | **Equipment and Materials**   1. **PowerPoint introducing activity** 2. Hard copies of Activity 2.3.1 and Teacher Notes for 2.3.1 for each participant 3. Two sheets of blank paper 4. Calculator for basic arithmetic operations 5. 3x5 notecards – 5 per person for suggestions |
| **Workshop 2** | | **Presenter:** |
| **Activities:** 2.4.3 Complex Zeros: Do They Have the Same Properties as Real Zeros? and 2.4.4 Putting It All Together  Participants explore the Fundamental Theorem of Algebra by first studying the properties of complex numbers, then investigating student arguments for whether x2 + 1 can be factored or not | | **Equipment and Materials**   1. **PowerPoint introducing activity** 2. Hard copies of Activity 2.4.3 and 2.4.4 for each participant 3. Two sheets of blank paper 4. Graphing calculator 5. Caution: Teachers will use the Transform App and if they have an old grapher it may not be on their grapher 6. 3x5 notecards – 5 per person for suggestions |
| **Workshop 3** | | **Presenter**: |
| **Activities:** 2.5.1 Home Run Ball and 2.5.1c Quadratic Regression  Presenter will focus on Activity 2.5.1 and 2.5.1c with participants’ questions about 2.5.3 as time permits  Participants explore the relationship between the regression equation and equations determined using 3 data points and solving the system determined by the 3 points, and an equation determined by estimating the coordinates of the vertex and using one data point. | | **Equipment and Materials**   1. **PowerPoint introducing activity** 2. Teacher need a TI grapher 3. Hard copies of Activity 2.5.1, Activity 2.5.1c and 2.5.3 for each participant 4. Two sheets of blank paper 5. Access to GeoGebra or Desmos only for Activity 2.5.3 6. 3x5 notecards – 5 per person for suggestions |
| **Closing Session**  Have each teacher write out 3 stickie notes: what I learned well, what I still have a few questions about, and what I don’t understand. Stickies are collected, sorted into categories and pasted on a wall.  Review of the investigations in Unit 2 that were not covered in the Workshops: investigations 1, 2, and 6. Show set of focus questions for Unit 2. **PowerPoint for Unit 2.**  Review any comments from stickie notes about the curriculum. Ask for questions and input from teachers about their experiences during the day. | | |
| **Additional Comments** Remaining questions can be addressed on the next day’s opening session | | |