**Connecticut Common Core Algebra 2 Curriculum**

**Professional Development Plan**

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| **Unit 1 Functions and Inverse Functions** | | |
| **Date:** | **Location:** | |
| **Presenters:** | | |
| **Schedule for the day:**  **Start time:** 9 AM  **End time:** 12 PM   * + **Opening: 9:00 - 9:30 am**   + **Session 1: 9:35 - 10:15 am**   + **Session 2: 10:20 - 11:00 am**   + **Session 3: 11:10 - 11:50 am**   + **Closing: 11:50 - 12:00 pm** | | |
| **Opening Session**:  Overview of the Core Algebra 2 Curriculum, including comparisons to and lessons learned from the Core Algebra 1 Curriculum. **PowerPoint for Overview of Algebra 2.**  Overview of Unit 1on Functions and Inverse Functions. Emphasis on conceptual understanding of topics and early introduction of ideas from calculus. **Power Point for Unit 1**. | | |
| **Workshop 1** | | **Presenter:** |
| **Activities:** 1.1.1 Keeping The Peace  Participants explore solutions to a linear programming problem, informally and then more formally.  Participants share solutions with the group.  **See additional comments 1 and 2 below** | | **Equipment and Materials**   1. PowerPoint introducing activity 2. Hard copies of Activity 1.1.1 for each participant 3. Two sheets of blank paper 4. Red and green colored pencils 5. Calculator for basic arithmetic operations 6. 3x5 notecards – 5 per person for suggestions |
| **Workshop 2** | | **Presenter:** |
| **Activities:** 1.4.3 Move It! Part One and 1.4.4 Stretch It! Part One  Participants explore the effects of the transformations f(x) + h and f(x + h) [in 1.4.3], f(kx) and kf(x) [in 1.4.4]  Transformations are expressed in terms of inside changes (to the independent variable) and outside changes (to the dependent variable)  **See comment 2 below** | | **Equipment and Materials**   1. PowerPoint introducing activity 2. Hard copies of Activity 1.4.3 and 1.4.4 for each participant 3. Graphing calculator 4. 3x5 notecards – 5 per person for suggestions |
| **Workshop 3** | | **Presenter:** |
| **Activities:** 1.6.1 Functions and Their Inverses and 1.6.3 Using Functions and Their Inverses  Presenter will focus on Activity 1.6.3 with 1.6.1 as background material.  Participants complete the Activities and explore the meaning of the concept of inverse function  **See comment 2 below** | | **Equipment and Materials**   1. PowerPoint introducing activity 2. Hard copies of Activity 1.6.1 and 1.6.3 for each participant 3. Calculator for basic arithmetic operations 4. 3x5 notecards – 5 per person for suggestions |
| **Closing Session**  Because of the additional time spent in the Opening Session on comparisons to and lessons learned from Core Algebra 1, the Closing Session for Unit 1 will be abbreviated and will occur at the end of, and in the same rooms as, Session 3.  Show PowerPoint for Unit 1 Closing or add slides to the activity power point, describing investigations not covered in previous Sessions (2, 3, 5, and 7). Show set of Focus Questions from PowerPoint, ask teachers for questions or comments at this point.  Have each teacher write suggestions for improving the curriculum on 3x5 notecards to be handed in at the closing session. | | |
| **Additional Comments:** Explain rationale for having inequalities and LP in unit 1. It permits us to review a good deal of algebra one skills needed in algebra 2 under the guise of new material. Equations in 2 linear variables have straight line graphs, slope, intercepts, systems of linear equations, graphing in the plane, solution, inequalities in one linear variable and evaluating a function all are examined. New material includes solving an inequality in 2 linear variables and graphing its solutions, reading and modeling in a more complex context, solutions of a system of inequalities, maximum and minimums in a more complex environment.  **Comment 2:** Be sure to have teachers do some or all of the activity hands-on as you would want students to experience. | | |