

# Syllabus For Algebra: Equations Course

Monday, Wednesday 7:00pm-8:00pm EST June 8- June 24

Office Hours: Wednesdays 2:00 pm EST

Readings: Ch. 4, Ch. 5 and selections from CH. 8, 9, and 10 of *Teaching Algebra to the Adolescent Vol. 1: A Montessori Approach*

## Session 1

- Looking at the flow of work for the topic of equations in the classroom.
- The Order of Operations
  - History
  - First 3 Levels
  - Fourth Level
  - Follow-Up Work
    - Traditional practice
    - Making equations from the date
    - The Four 4's Project
    - Evaluating expressions

## Session 2

- Algebra Tile Introduction
  - Adding and Subtracting Integers
- Solving One-Step Equations with Positive Numbers
- Solving One-Step Equations with Negative Numbers
- Solving One-Step Equations with Integer Multiples of  $x$
- Solving One-Step Equations with Fractional Multiples of  $x$
- Solving One-Step Equations in Abstraction

## Session 3

- Solving Two-Step Equations
- Solving Two-Step Equations with several fractions
- Variables on Both Sides of the Equation
- Solving Multi-Step Linear Equations
- Solving Any Equation using the Order of Operations

## Session 4

- Solving Equations with Higher Powers
- Solving Embedded Quadratics
- Using Algebra Tiles to Factor
- Zero-Product Property
- Solving Equations through Factoring

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## Session 5

- Perfect Square Trinomials
- Completing the Square with Materials
- Solving Quadratic Equations through Completing the Square
- The Quadratic Formula

## Session 6

- Solving Inequalities
- Solving Equations with Absolute Value
- Recap of flow of work for and implementation strategies