Welcome to the 8th Grade Advanced Algebra I Plus
Teachers: Mr. Motamed, Mr. Boegel, assisted by Mrs. Yip
nboegel@stmatthewcath.org
amotamed@stmatthewcath.org
Website: www.MrMTeachingMath.com

The Year of Implementation and Alignment with the Common Core Objectives

---

Learning Focus / Student-Centered – Teaching Techniques;
- Direct Lessons and Instructions
- "See the big picture" and think…
- Treat each student as a "thinker" and ask "What do you think?"
- Connections with Physical Science (Physics)
- Group and In-Class Work and Practices
- One-on-One Guidance
- Peer-teaching
- Assessments as to reinforce learning and Review of teaching effectiveness and Adjust.

Textbook: Algebra I Concepts and Skills, McDougal Littell (2001)
Selected Topics from Algebra II
Course Description: 8th Grade– Advanced Algebra I Plus is an in depth review of Algebra I plus selected topics from Algebra II (High School Algebra 3,4). Additional topics to the in depth review of Algebra I include; Linear Programing, Solving, Graphing and Analyzing linear inequalities and absolute value inequalities, Functions and Inverse of Functions, Exponential-, Log-, Trigonometry-, Quadratic-functions, parabola, ellipse, circle, hyperbola, conic section and as time allows study probability and statistics and some discrete mathematics (series and sequences)

Goals: Advanced Algebra I Plus Curriculum – Selected students who have taken Algebra I during 7th grade will have in depth review of Algebra I (High School level Algebra 1,2) and learn the critical thinking of mathematics; establish, analyze, graph and calculate functions and inverse of selected functions: (absolute value, linear equality and inequality, exponential, logarithmic, periodic (trigonometry), conic (parabola, ellipse, circle, hyperbola). Students also learn some basic discrete mathematics (finite and infinite series, and sequences).
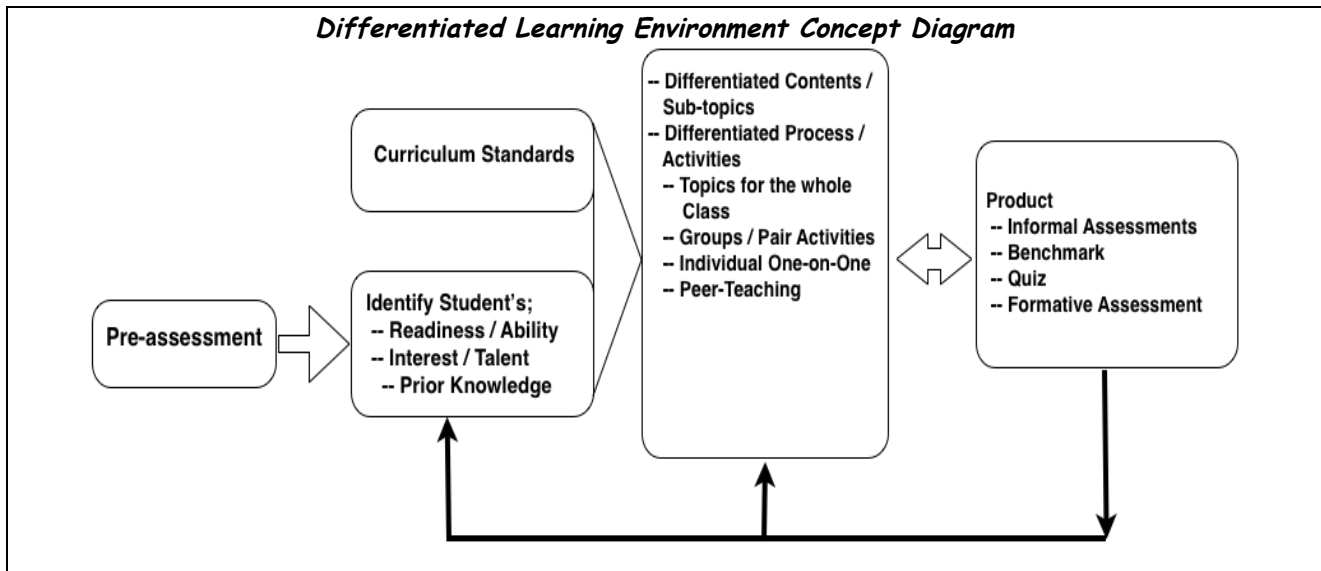*Utilizing the Algebra I textbook and other resources, we will work to cover in depth studies all of the Algebra I standards, and Selected Topics of Algebra II.*
Content Standards are listed on the last page.

Differentiated Learning Environment and Instructions, Within Same Homeroom Classes:
Mr. Motamed, Mr. Boegel and Mrs. Yip will be co-teaching within the Differentiated Learning framework. Majority of 8th grade students will be taught Algebra I (High School Level =Algebra 1,2), a few will be in Geometry or in Advanced Algebra I Plus (includes in depth review of Algebra I plus some selective topics of Algebra II). Some student will be in Algebra 0.5 (Very similar to Algebra I, slightly streamlined, with main focus on Key subtopics). We continuously try to teach to the individual student

and capitalize on student's strengths. We modulate the depth of each section according to the individual abilities. We use various forms of assessments to adjust and refine instructions.

Differentiated Learning Environment Concept Diagram

Grading Scale 2013-2014:
- o **Unit Tests**……………………………………… …………   **35%**
- o **Quizzes**………………………………………………………… **30%**
- o **Group Test / Math Facts Assessments**………   **5%**
- o **Homework / In-Class Work**……………….………… **15%**
- o **Project** ……………………………………………… ………….. **10%**
- o **Participation / Conduct and Citizenship** …..   **3%**
- o **Folders and Notebook** ………………………………… **2%**

Late Policy:
Assignments are due on the specified due dates. We consciously give adequate time for the assignments including time to start the work in the classes.
Therefore, for each late day, we will deduct 10% off the graded percent of an assignment. Late assignments after 5 school days (1 week) will receive ***ZERO*** point for that assignment. No work will be accepted more than one week (5 school days) after the required due date. Missing assignments can seriously affect the final grade and continuous missing work is considered an act of disobedient and will result in more severe consequences.

Attendance / Absence / Make-up Work Policy:
- If you miss a class, you are responsible for getting the notes, class work, and homework from your classmates or from the website. (will be available shortly)
- If you are absent for a test, you must make arrangements with us to reschedule the test as soon as you return to the school. Rescheduling is your own responsibility.
- All class information will be available online. (shortly)
- Being tardy is extremely disturbing to the class. You will loose part of your daily participation points for each tardy.
- Your attendance for the full length of all class periods is vital.

Daily Homework:
- Homework will be given daily (except Friday) and checked on the next day, unless otherwise specified.
- Homework serves as a review and practice of the day's lesson. On average you should expect to spend 30 to 45 minutes on homework.
- Homework must have the correct heading:
    Your full name, Homework Number, Date, Period

Participation / Note-taking / Organization / Conduct / Citizenship:
- o Each student will automatically receive 3 points for this category daily. Every time you are late to class, misbehave, fail to follow directions, or are not on task, one point will be deducted from your daily participation grade.

Quizzes / Tests / Group Tests
- o Quizzes / tests will be given almost once a week.
- o No calculators are allowed on the tests or quizzes unless specified by us.
- o Some tests will be completed in groups and others will be individually.
- o Group tests generally will be prior to the chapter or unit test.
- o Chapter tests will be given at the end of each chapter.
- o We will provide guidance and practice worksheets prior to the chapter / unit test.

Classroom Rules:
- o School policies on behavior fully apply in this class.

Adv. Algebra I PLUS: 2013 - 2014 Yearly Focus Overview

1st Quarter
- ❖ PEARL Connection and Reflection
- ❖ Review – Exponential Rules and Operation
- ❖ Nth root Radical expression and simplification
- ❖ Solving Graphing Linear Inequalities and Absolute Value
    - ➢ Linear Programming (feasibility, optimization, profit / loss analysis)
- ❖ PEARL Review and Reflection
- ❖ Understanding and Analyzing Exponential, Radical Functions
    - ➢ Graphing Exponential and Radical Functions
    - ➢ Graphing and analyzing quadratic equations
    - ➢ Word Problem Solving / Set Up / Solve / Analysis

2nd Quarter
- ❖ Logarithm expressions, rules, operations
- ❖ PEARL Writ Up
- ❖ Functions and Inverse of Functions
    - ➢ Logarithmic expression, evaluation and simplification
    - ➢ Graph Exponential and Logarithmic functions.
    - ➢ Decay and Growth in Word Problem Solving / Set Up / Solve / Analysis
- ❖ PEARL Reflection
- ❖ Review solving system of equations, Algebraically and Graphically
- ❖ Review systems of Linear Inequalities
- ❖ Trigonometry (Basic Functions, Expressions, Graphs and Evaluation)

3rd Quarter
- ❖ Conic Section – Parabola, Ellipse, Circle, Hyperbola
- ❖ Graph Parabola, Ellipse, Circle, Hyperbola
    - ➢ Analyze, key parameters
    - ➢ Project: Use Excel, graph and analyze, Parabola, Ellipse, Circle, Hyperbola
- ❖ Review Polynomials and Factoring Techniques
    - ➢ Diamond, Difference of Two Squares (DOTS), Perfect Square, Special Products
- ❖ PEARL Write Up
- ❖ Quadratic Equations
    - ➢ Quadratic Equation formula
    - ➢ Roots and Analysis

4th Quarter
- ❖ PEARL Connection and Growth Project
- ❖ Probability; Permutation and Combination, Dependent and Independent Events
- ❖ More on Trigonometry