**Algebra II Syllabus: 2018 – 2019 Instructor: Greg Mako**

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**Curriculum**

We will follow the **(EngageNY.org),** common core, curriculum. Once on the opening page, under **mathematics**, select **Algebra II**. After clicking on Algebra II on the left side of the page under the heading, **Curriculum Map,** select one of the four **modules.** We will work on all four modules this year. Once the module is selected **topics** will be displayed. Select a topic to view the list of **lessons** under that topic. Choose the lesson your child is working on and the **Downloadable Resources** will be listed. The list of resources includes a PDF and Word document of the student version and the teacher version. The student version is given as a hard copy to the student. The assignment in class that was worked on and any homework assigned will be listed after each class on **makomath.com.**

**How to effectively use the resources.**

The teacher version can and should be read by the student. It has the complete lessons for when students are absent or want to look ahead to what we will be doing. Possible answers for the worksheets we do in class and Exit Tickets, (quizzes), with answers are also in the teacher versions. The Exit Tickets I give will have numbers changed in the questions so answers will be different from the teacher resource, but they are excellent study resources.

**Expectations: Proficiency in the CCRSM standards including the following ways students are expected to work with one another and by themselves.**

1. ***Make sense of problems and persevere in solving them.***

Analyze givens, constraints, relationships, and goals. Plan a solution pathway rather than simply jumping into a solution attempt. Consider analogous problems, and try special cases and simpler forms of the original problem. Monitor and evaluate their progress and change course if necessary. Explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends.

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2. ***Reason abstractly and quantitatively.***

Make sense of quantities and their relationships in problem situations. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

3. ***Construct viable arguments and critique the reasoning of others.***

Understand and use stated assumptions, definitions, and previously established results in constructing arguments. Make conjectures and build a logical progression of statements to explore the truth of their conjectures. Use counterexamples, justify conclusions, communicate them to others, and respond to the arguments of others. Reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is

4. ***Model with mathematics.***

Apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. Make assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. Identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas, calculator and computer displays of data.

5. ***Use appropriate tools strategically.***

Consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic software. Analyze graphs of functions and solutions generated using a graphing calculator. Detect possible errors by strategically using estimation and other mathematical knowledge.

6. ***Attend to precision.***

Communicate precisely to others. Use clear definitions in discussion with others and in their own reasoning. State the meaning of the symbols they choose, including using the equal. Express numerical answers with a degree of precision appropriate for the problem context. Examine claims and make explicit use of definitions.

7. ***Look for and make use of structure.***

Look closely to discern a pattern or structure. See complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see 5 – 3(*x – y*)2 as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.

8. ***Look for and express regularity in repeated reasoning.***

Notice if calculations are repeated, and look both for general methods and for shortcuts. Pay attention to the calculation of slope. Abstract equations and noticing the regularity in the way terms cancel when expanding. Lead to general formulas after examining data and other similar problems. Maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.