Grade 8 Mathematics, 2015-16 School Year

Ray Tenebruso
608-850-6000
rtenebruso@madisoncountryday.org
www.math.mnrt.net

Algebra 2 Syllabus
2015-16 School Year

Course Description

Topics considered include exponents, nth roots, expressions containing radicals, irrational numbers, the straight line in the coordinate plane, polynomials of degree 2 and higher, factoring polynomials, applications of factoring polynomials, completing the square, and the quadratic formula. Students learn the idea of a function by studying linear functions, quadratic functions, and rational functions. Students learn to find the equation of a line, given two points or given a point and a slope; they write the equation of the line through a specific point and parallel or perpendicular to a given line. Students learn the importance and role of definition and they begin reading and writing simple proofs.

Core Goals

- Articulate clear, concise, and sound reasoning using the formal language of mathematics.
- Work with expressions and equations of increasing subtlety and complexity.
- Understand the role of definition in the discovery of mathematical truth.
- Read and write simple proofs.
- View mathematical relationships algebraically and graphically in the coordinate plane.

Expectations

Take notes. In mathematics class, every important point is made both audibly in spoken words and visually in words, symbols, and drawings that go on the board. When you take notes on a solution, derivation, or proof, you think through the mathematics along with your teacher. Taking notes raises your understanding to a higher level, because you interpret, judge, evaluate, and organize what you are seeing and hearing in class while it is happening.

Do homework. Your success in this course depends on your thoughtfully preparing assignments in time for the next class, in which we will discuss your comments and answer your questions about the assignment you completed. Since each class builds upon the previous one, missing an assignment will leave you unable to follow and understand the material presented in the next class. This cascading effect once begun is hard to stop.

Expect to spend about 2 hours per week outside of class seriously working on mathematics without distractions. If you stick to this, you will find you hardly need to study before and exam, because you will already know the material.

Participate in class. You will understand the ideas of mathematics more quickly and more deeply by participating in class discussion. When your teacher or another student asks you to elaborate on an idea you have expressed, you have a wonderful opportunity to explore your own thoughts and practice articulating them clearly. Clarity of expression and clarity of thought develop together. The give and take of classroom discussion, though messy, is an essential and irreplaceable element in building your understanding of mathematics.

If, as described above, you take notes, do homework, and participate, then you will find your understanding so solid and your skill so proficient that you will not need to study for exams.

Textbook & Resources

Textbook. *Beginning Algebra Continued 3nd edition,* Ray Tenebruso.
An electronic copy of the student's print textbook is at my web site.

Web. I maintain an easy to use website. This is a valuable resource. If you are absent from class, check here for the day's assignment and any handouts or problem sets that were given out in class. If you lose a problem set or a handout, get another one here. Parents will find the definitive answer to the question: "Do you have any mathematics homework?" I update the site every weekday almost always by 5:30 P.M.

At my web site you will find:

- The current assignment and all past assignments.
- PDF copies of **every** item handed out in class.
- Copies of exams and quizzes are not included.
- Notes, if the day's topic was especially complex.
- Occasional photograph of chalk board
- An electronic copy of your textbook.
- Links to sites of mathematical interest.

To reach my web site, please go through the Blackbaud portal.

Required Materials

An organized three-ring binder with five divider tabs for class notes, handouts, homework, quizzes, and exams, a red correcting pencil, several sharpened pencils, and a good quality eraser are required. Bring these items, along with your textbook and completed assignment, to class each day.

Course Outline

- Integers
- The straight line
- Radicals
- Exponents
- Factoring of polynomials
- Completing the square
- Rational expressions
- Quadratic equations
- The quadratic formula
- Rational functions
- Quadratic functions
- Functions

Grading & Evaluation

Your semester mastery grade is determined by full period exams, brief quizzes, and any graded assignments. Your scores on quizzes will make up no more than 20% of your semester grade. Exams and graded assignments will make up no less than 80%. Exams and quizzes will have strict time limits, because they seek to assess your level of proficiency with the material that we recently covered. Proficiency often means that you can work a problem in a couple of minutes using the recent material we covered, rather than suffering 15 minutes of furious labor because you were unfamiliar with the recent material we covered.

It's a fact: homework is the single most important ingredient in determining your grade on examinations and quizzes, and therefore your course grade. If you slack off on homework, you will get a poor course grade.

A quiz may be given at any time without prior announcement. Expect a short quiz about once per week. Your lowest quiz score will be dropped. Exams will be announced well in advance and will require a full class period to complete.

Each semester, you will be allowed to retake one exam of your choice, provided that (1) you completed every homework assignment relevant to the material on the exam prior to the date of the original exam and (2) reworked every homework problem with which you had trouble prior to the date of the original exam. The grade obtained on the retake will be the grade used to complete your semester grade even if that grade is lower than the grade you obtained on the

original exam.

Absence Policy

If you are absent for a quiz or an exam, you are expected to arrange to make it up. If you miss a class meeting, borrow another student's notes to copy. Discussing those notes with the other student will further benefit both you and your kind classmate. If you want to do some homework, you might check my web site. I sometimes post assignments during the day, instead of at the end of the day, in case an absent student feels like doing homework. I definitely do not expect you do homework while you are ill.

Late Work Policy

Homework is considered practice, so you will not be graded on it. There will be some graded assignments including take-home exams. The MCDS Middle School late work policy will apply to graded assignments. This policy states that for each day work is late, 10% will be deducted from the grade, up to 50%. If the work is never turned in, it will count as zero.

Getting Help

Please seek my help outside of class. I teach because I love to do mathematics with you. The student who makes the extra effort to get help when needed makes a very good impression on the teacher. Do not expect the impossible, though. If you have not kept up with assignments, meeting with me for an hour as the exam date approaches is not going to do you much good. If that was all it would take for you to do well, I would not be giving all these assignments in the first place. Remember that asking specific questions rather than saying, "I don't get it" will bring you the most useful help as well as evidence the effort you made in trying to master the material.