



Grade 8 Mathematics, 2014-15 School Year

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Algebra 2 Syllabus 2014-15 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 when we discuss your comments and answer your questions. 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.

Your teacher respects your time. Homework will very rarely be given on weekends and never on vacations. There will be no projects to complete outside of class. Expect to spend about 20 minutes per weeknight seriously working on mathematics without distractions.

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*, Ray Tenebruso.

Web. I maintain an easy to use web site at www.math.mnrt.net . 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 www.math.mnrt.net 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.
- An electronic copy of your textbook.
- Links to sites of mathematical interest.

Required Materials

A ring binder with divider tabs for organizing class notes, handouts, homework, quizzes, and exams.

Course Outline

- Exponents

- Roots
- Radical expressions
- Equation of a straight line
- Polynomials
- Factoring of polynomials
- Completing the square
- Quadratic equations
- Higher degree polynomial equations
- The quadratic formula
- Functions

Grading & Evaluation

- Trimester grade determined by full period exams, brief quizzes, and any graded assignments.
- Quiz scores count no more than 20% of your trimester grade.
- Exams and graded assignments count no less than 80% of your trimester grade

Exams and quizzes will usually have strict time limits, because they seek to assess your level of proficiency. Proficiency often means that you can work a problem in a couple of minutes using the content we covered, rather than suffering 15 minutes of furious labor because you were unfamiliar with that content. Expect a short quiz about once per week, but a quiz may be given at any time without prior announcement. Your lowest quiz score will be dropped. Exams will be announced well in advance. Typically the exam will be given no sooner than two weeks after we have finished the material the exam covers.

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 www.math.mnrt.net . 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 may be some graded assignments such as take-home exams. The MCDS Middle School late work policy will apply to graded assignments.

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.