

Algebra 2 – Common Core Syllabus

11.3

Course Title: Algebra 2 – Common Core

Teacher's Name: Mr. Crodelle

Textbook: Algebra 2 by Carter, Cuevas, Day and Malloy
Publisher: McGraw Hill

Workbook: Algebra 2 Common Core Workbook (pdf found on my website)

Objective: This course builds the students' knowledge of algebra and problem-solving topics. This course will prepare students to take the NY State Algebra 2 Common Core Exam in June. All students must pass this exam in order to graduate high school, as required by New York State. Topics include: Relationships between Quantities and Reasoning with Equations and their Graphs, Descriptive Statistics, Linear and Exponential Relationships, Polynomial and Quadratic Expression, Equations, and Functions, A Synthesis of Modeling with Equations and Functions. SAT Preparation will be done.

Necessary Materials: Each student needs to bring to class pens/pencils, a 3 subject notebook **dedicated just for Math**, and a graphing calculator every day. Each student will be **required** to purchase a **TI 84 graphing calculator**. Graph paper will be needed at some point during the year.

Homework Assignments: Homework will be assigned each night. The student's name and the assignment should be visible at the top of the page. Homework is to be done neatly. Homework will be checked each day. To be a successful student in this class it is extremely important that homework is done nightly. **Late homework will not be accepted.** If a student is absent they can check the class web site for the assignment. Homework can be turned in when they return.

Textbook and Workbook: Students will have online access to the textbook and workbook. Students will be given login information to gain online access to the textbook. Students will also have access to the pages in the workbook by going to my class website and clicking on the link provided.

Textbook - <http://connected.mcgraw-hill.com/connected/login.do>

Teacher Code: _____

Redemption Code: _____

Calculation of Grade:

45% - Tests

35% - Quizzes

15% - Homework

5% - Participation/Preparedness

Testing: Exams are cumulative and given on a regular basis. Testing includes all exams, quizzes, and pop-quizzes. If a student misses an exam, it is his/her responsibility to see me regarding a time and place to schedule a makeup exam. Since every student is required to have a calculator, sharing a calculator during an exam is not permitted. Similarly, students are responsible to have their calculators with them on testing days, no excuses! If a student does not have a calculator on a test day then the student will have to take the exam without a calculator.

(OVER)

Classroom Policies:

Every student is expected to come to class on time. After 3 lates a student will serve detention with the teacher.

Each student is expected to come to class prepared to work with the necessary materials each day.

Every student will receive a progress report midway through each quarter.

Extra help will be given before or after school. A schedule will be set up that is agreeable to both students and teacher.

Conduct: Students are expected to respect each other, the teacher and the classroom. Students are expected to be in their assigned seats when the bell rings. Once seated, the student is expected to begin the work on the board.

Attendance: Attendance is very important in order for students to fully learn the material. In the case of an absence, it is the **student's responsibility** to obtain any missed class notes and homework from a classmate, the class web site or myself. It would be helpful if the student exchanged phone numbers with someone in class.

Classroom Website: I have set up a website for the class. The web address for this website is

<https://josephcrodelle.wixsite.com/stjohnsmath>. It will contain homework assignments, resources and important documents. It is updated on a daily basis.

Home Logic: Information will be sent home regarding the use of the online grading system. Home Logic will be updated on a weekly basis. I would ask that you give me a week to grade any tests or quizzes. It is extremely important that you check home logic on a weekly basis. If you have any concerns they can be addressed right away. If you have any concerns regarding the system or are having trouble please do not hesitate to ask.

Contact:

I will be using the student's school email account to communicate with them. I am asking for a parent email address so that I can contact you by email as well. I would like to have the opportunity to use email as well as the telephone. Please print your email address on the next page and check whether you check your email regularly. **Please Note:** if you have the letter O in your email address write it as an O if you have a zero in your email address put a diagonal line through the zero. If you have the letter L in your email please write it like L and if you have the number 1 in your email please write it like 1.

To contact me during the day, call (718) 721 – 7200 and leave a message. I will return it as soon as

possible. You can also e-mail me at jcrodelle@stjohnsprepschool.org if that is more convenient. I look forward to working with you and your child this year. I know it will be a successful year!

Course Outline

Semester 1

Module 1: Polynomial, Rational, and Radical Relationships

1. Review Parent Functions
2. Average Rate of Change
3. Characteristics of Polynomials
(Review Operations of Polynomials and Factoring with Do Nows)
 - a. Degree, Leading Term, Leading Coefficient, etc.
 - b. Function Notation & Evaluating Functions
4. Analyzing Polynomial Functions
 - a. Even Degree Functions
 - b. Odd Degree Functions
 - c. End Behavior
5. Polynomial Functions
 - a. Factored Form
 - b. Standard Form
 - c. Graphically
 - d. Factor by Grouping
 - e. Double Roots
 - f. Minimums & Maximums
 - g. Multiplicity
6. Long Division
7. Remainder/Factor Theorem
 - a. Enhance Graphical Connection
8. Odd and Even Functions
9. Radicals
 - a. Operations with Radicals – Simplify, Add, Subtract, Multiply, Divide
 - b. Rational Exponents
 - c. Rationalize
 - d. Solve Radical Equations
10. Complex Numbers
 - a. Add, Subtract, Multiply and Divide
 - b. Rationalize
11. Rational Expressions
 - a. Simplify
 - b. Multiply, Divide
 - c. Add, Subtract
 - d. Solving Rational Equations
12. Work Problems
 - a. Modeling

13. Systems of Equations
 - a. 2 Equations
 - b. 3 Equations
 - c. Quadratic – Linear System
 - d. Circle – Linear System
14. Quadratic Formula
15. Completing the Square
 - a. $a = 1$
 - b. $a > 1$
 - c. Completing the Square to Vertex Form
 - d. Discriminant
16. Focus and Directrix

Module 2: Trigonometric Functions

1. Periodic Data – Modeling
2. Angles in Standard Position
3. Six Trigonometric Functions
4. Special Right Triangles $30^\circ - 60^\circ - 90^\circ$, $45^\circ - 45^\circ - 90^\circ$
5. Unit Circle – Reference Angles
6. Point on a Circle Not in a Unit Circle – Radius other than 1
7. Pythagorean Identity: $\sin^2\Theta + \cos^2\Theta = 1$
(talk about different ways to rewrite this identity.)
8. Radian Measure – Degree Measure
9. Arc Length
10. Sinusoidal Graphs
11. Modeling

Module 3 – Exponential and Logarithmic Functions

1. Review Exponent Rules
 - a. Properties of Exponents and Radicals
2. Exploring the Exponential Function
 - a. Understanding the Parameters
3. Solving Exponential Equations Not Requiring Logs
4. Growth and Decay
5. Modeling
6. Regression
7. Compositions of Functions
 - a. Modeling
8. Finding Inverses
9. Logarithms – Log Form to Exponential Form and Exponential Form to Log Form
10. Solving Log Equations

11. Product & Quotient Rules
12. Using Tables with Logs
13. Natural Logs
14. Modeling
15. Geometric Sequences
 - a. Growth and Decay
 - b. Sum of Geometric Series
 - c. Modeling

Module 4 – Inferences and Conclusions from Data

Probability

1. General Probability – and/or
2. Venn Diagrams
3. Probability with Venn Diagrams and Two Way Tables
4. Conditional Probability
5. Independence
6. Independence Rules

Statistics

1. Basic Vocabulary
2. Data Distributions – Skewed, Symmetrical, Normal)
3. Reading Relative Frequency Histogram
4. Normal Distribution
5. Calculate Z-Scores
6. Normalcdf
7. Normal Distribution Applications
8. Inverse Normal
9. Types of Statistical Studies
10. Confidence Interval
11. Estimating with the Confidence Interval
12. Margin of Error
13. Sampling
14. Differences in Means and Proportions
15. Statistical Significance

St. John's Preparatory School

PLEASE SIGN AND COMPLETE THE INFORMATION BELOW AND RETURN TO MR. CRODELLE

Student's Signature

Parent's Signature

Parent Email Address (Please Print)

Do you check it regularly?

Yes **No**

Check here if you don't have an email address.

Don't have an email address