

# North Carolina Math 3 Syllabus

Instructor: Ms. Ayana Barry-Buchanan

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**Room Number:** MC – 7

**Website:** [huhsmath3.weebly.com](http://huhsmath3.weebly.com)

**Office Hours:** Mon - Thurs 2:30 – 4:30pm (B132)

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## COURSE OVERVIEW

North Carolina Math 3 is a rigorous course that students take after completion of Algebra I (Math I) and Geometry (Math II). This course includes a review of topics from Algebra I and new topics including Polynomials, Radicals and Complex numbers, Probability and Statistics, Logarithmic and Exponential Functions, Geometry, Trigonometry and Modeling.

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## ABOUT ME

I am a proud graduate of Vanderbilt University (Go 'Dores!). At Vanderbilt, I majored in Human and Organizational Development and minored in Child Development. I am also a Teach for America alumna. This will be my fourth year teaching at Harding University High School (Go Rams!)

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## BIG GOALS

- Every student will achieve at least 80% mastery on all Math 3 objectives.
- Every student will pass the Math 3 Final Exam.
- Students will take ownership of their performance in Math 3 and of their education in general.

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## SUPPLIES

Please speak to me immediately if you need financial assistance with or need more time to purchase these supplies.

Necessary Supplies:	Recommended Supplies:
<ul style="list-style-type: none"><li>• One Composition Notebook (100 SHEETS/200 PAGES)</li><li>• Pocket Folder</li><li>• Notebook Paper</li><li>• Package of Pencils</li></ul>	<ul style="list-style-type: none"><li>• Graphing Calculator (We recommend that you have your own but if not, one will be provided for classroom use ONLY).</li></ul>

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## CLASS EXPECTATIONS

### Rules

1. Respect yourself, your teachers, and all others at ALL times
2. Come to class on time and prepared to learn
3. We will help others and ask for help when we need it
4. Follow directions the FIRST time they are given
5. Keep your feet, hands, and other objects to yourself.

### Respecting the Speaker

In order for clear communication and understanding with the content students must respect their peers and the teacher while they are speaking. It is disrespectful to talk when other are presenting valuable information to the class, and it disrupts other people's ability to learn. During times when you have been given permission to talk freely or work independently, I expect your attention within seconds. Do not leave your desk or sharpen your pencil when someone is presenting.

### Entering the Classroom

Class begins as soon as you arrive. When you enter, you will proceed to the bookshelf to pick up your notebook. If you need to sharpen your pencil, this is the appropriate time to do so. Then you will move quietly to your seat and start your work. Every day, you will complete a Do Now, or "Opener," at the beginning of class. You should take out any homework and place it on your desk at this time.

### Exiting the Classroom

The bell is a signal to the teacher that it is time for class to end. **The bell, however, does not dismiss the class.** When dismissed, you should drop off any class work that I am collecting in the appropriate bin. You will then quietly – without running, pushing, etc. – exit the class. Before you leave, you will collect your things and pick up any trash around your desk. **Leave your space better than you found it!**

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## TUTORING

Due to the short amount of time we have together, it is strongly suggested that ALL STUDENTS to come to afterschool tutorials. We will conduct tutoring Monday through Thursday after school in B132 from 2:30pm - 4:30pm. If these times do not work, please come and see me and we can work something out.

## GRADING

Quarterly Grading Policy	
Formal Assessments	70%
- Tests, Quizzes, Projects	
Informal Assessments	30%
- Homework, Classwork, Participation, Notebook Checks	

Grading Scale	
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	Below 59%

### **Mastery vs. Grading:**

Though grades are important, I am more concerned with your mastery of the material rather than your grade in the class. It is my goal that all students master all objectives at a level of at least 80%. Every test and quiz that I give will not only have a grade but also mastery results. If you receive less than 80% on the assessed objective then you will receive a “Not Yet” meaning you have not yet mastered that particular objective. Students will track their progress mastery. If you work hard you will pass this class and be better prepared for higher education.

### **Final Exam:**

You are required to take a state developed final exam North Carolina Final Exam (NCFE). This exam will be worth 20% of your final grade.

### **Homework:**

Our learning does not end once you leave the classroom. We have so much to learn before the end of the year and very little time. Thus, homework is never optional and is included as part of your grade. If you do not understand what we are doing in class and are having trouble completing homework, please come see me so that I can help you. You will have homework every day.

### **Academic Dishonesty:**

ACADEMIC DISHONESTY (e.g. talking/copying during test time, using electronics, cheating, etc.) WILL NOT BE TOLERATED AND WILL BE REPORTED TO THE APPROPRIATE ACADEMIC AUTHORITIES. ANY EVIDENCE OF CHEATING OR PLAGIARISM WILL RESULT IN IMMEDIATE FAILURE (0) OF THE ASSIGNMENT. Collaboration and copying are two very different things!

## **CLASS POLICIES**

### **Late Work:**

To earn full credit on an assignment, students must turn work on time. Any work turned in after this time will be given a late penalty. All late work will be worth half credit. No work will be accepted after 5 days.

### **Absences:**

Charlotte Mecklenburg Schools’ policy states that **if a student misses more than 10 class periods of a single course, then the student will automatically fail the course.** Recovery is provided for students who are over the 10 day limit by appointment with the teacher or Saturday School (students must request work from the teacher in advance). After school assistance is available for missed lessons and remediation.

### **Make-up Work:**

If you are absent, it is your responsibility to get all missed work. Unless otherwise stated, all work will be due in 5 days. Please see Ms. Barry-Buchanan during this time frame if you need help with the material you missed. Quizzes and Unit Assessments must be made up as soon as possible after returning to school. See Ms. Barry-Buchanan immediately about missing quizzes and tests. Any work missed due to a student cutting class is an automatic zero.

### **Tardy Policy:**

Students arriving to school or class late will be required to sign in on a tardy log immediately after entering room late. Students more than 45 minutes late to class will be marked absent.

### **Restroom Breaks:**

Students must be escorted to restroom by security. Students must sign out and take restroom pass. On return students must sign back in. No more than 5 min should be taken for a restroom break. Only one student goes to restroom at a time. Students are only allowed 3 restroom visits per semester for my class.

### **Cell Phones and personal electronic devices:**

Students must not have cell phone out while in classroom. Cell Phones are only to be used during class changes and before and after school. Cell phone will be powered off and bagged if out in class.

### **Food and Drink:**

Students may not eat or drink in class. If student has it out they will be asked to dispose of it.

I would appreciate it if you would review the classroom materials, rules and consequences with your parents/guardians before both of you sign and return the attached form. Thank you for your cooperation. I look forward to a wonderful year!

Sincerely,

Ms. Barry-Buchanan

## North Carolina Math 3 Syllabus Acknowledgement

**Student:** I, \_\_\_\_\_ (print name), have read the Syllabus and understand the standards to which I am being held in North Carolina Math 3. I understand that Ms. Barry-Buchanan has extremely high expectations for her students, and I am going to have to work hard in this class to meet them.

\_\_\_\_\_  
Student Signature

\_\_\_\_\_  
Date

**PARENT/GUARDIAN:** By signing below, I, \_\_\_\_\_, acknowledge that I have read the course syllabus and that I am aware of what is expected of my student in Math class for the 2016-2017 school year.

\_\_\_\_\_  
Parent/guardian signature

\_\_\_\_\_  
Relation to student

\_\_\_\_\_  
Date

### Home Information:

Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_ Email: \_\_\_\_\_

### Work Information:

Work Phone: \_\_\_\_\_ Extension: \_\_\_\_\_ Can you receive calls at work? Yes NO

**Preferred way of contact** (Circle all that apply): Phone [Home / Cell / Work] Email Mail

**Preferred day/time preferences for parent-teacher meetings:** \_\_\_\_\_

What is the best time of day to contact you? \_\_\_\_\_

**Is there another guardian/grandparent/sibling/family friend/ that I should contact?** If so, provide:

Name: \_\_\_\_\_ Relationship to student: \_\_\_\_\_

Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_ Work Phone: \_\_\_\_\_

Email: \_\_\_\_\_

**Preferred way of contact** (Circle all that apply): Phone [Home / Cell / Work] Email Mail

Do you preferred to be contacted in English or Spanish, or another language?

Does your student have access to any of the following (Check all that apply)?

Computer \_\_\_\_\_ Internet \_\_\_\_\_ Printer \_\_\_\_\_

**Please return to Ms. Buchanan by February 3, 2017**

## **Unit 1 Title: Polynomial Functions**

**Standards:** NC.M3.N-CN.9, NC.M3.A-SSE.1a, NC.M3.A-APR.2, NC.M3.A-APR.3, NC.M3.A-CED.1, NC.M3.A-CED.2, NC.M3.F-IF.7, NC.M3.F-IF.9, NC.M3.F-BF.1a, NC.M3.F-BF.1b, NC.M3.F-LE.3, NC.M3.G-MG.1, NC.M3.G-GMD.3, NC.M3.A-REI.11

In this unit, students will identify and interpret parts of a polynomial expression, interpret the Fundamental Theorem of Algebra and use it to solve polynomial functions for all zeros (both real and complex). Students will graph and analyze the key features of polynomial functions, divide polynomials and use both the Remainder and Factor Theorems to prove factors and solutions. Students will build polynomial functions from real solutions and use polynomials in the context of modeling problems. Students will solve systems of equations involving polynomials.

## **Unit 2 Title: Rational Functions**

**Standards:** NC.M3.A-SSE.1a, NC.M3.A-APR.6, NC.M3.A-APR.7, NC.M3.A-CED.1, NC.M3.A-CED.2, NC.M3.A-REI.1, NC.M3.A-REI.2, NC.M3.F-IF.4, NC.M3.F-IF.7, NC.M3.F-IF.9

In this unit, students will perform operations with rational expressions, create and solve rational equations, graph rational functions and identify and interpret the meaning of key features of rational function graphs.

## **Unit 3 Title: Exponential and Logarithmic Functions**

**Standards:** NC.M3.A-CED.1, NC.M3.A-CED.2, NC.M3.A-SSE.1a, NC.M3.A-SSE.3c, NC.M3.F-IF.7, NC.M3.F-IF.9, NC.M3.F-BF.1a, NC.M3.F-BF.3, NC.M3.F-BF.4a, NC.M3.F-LE.4

In this unit, students will create and graph equations that represent exponential relationships and identify and give meaning to parts of an exponential equation including terms, coefficients and exponents. Students will identify and describe graphical changes to an exponential function when transformed vertically and horizontally and analyze key features including, but not limited to, domain and range, increasing/decreasing intervals, symmetry and end behavior. Students will solve exponential equations algebraically and graphically, and evaluate a logarithm using technology. Students will create linear, quadratic and exponential models to compare relationships between quantities.

## **Unit 4 Title: Functions and Their Inverses**

**Standards:** NC.M3.F-IF.9, NC.M3.F-BF.4, NC.M3.F-BF.4a, NC.M3.F-BF.4b, NC.M3.F-BF.4c

In this unit, students will understand the inverse relationship between exponential and logarithmic, quadratic and square root, and linear to linear functions graphically, numerically in tables, algebraically and in the context of real-world situations. Students will determine when a function is one-to-one and whether an inverse function exists by analyzing tables, graphs and equations.

## **Unit 5 Title: Modeling With Functions**

**Standards:** NC.M3.A-SSE.1a, NC.M3.A-CED.1, NC.M3.A-CED.2, NC.M3.A-CED.3, NC.M3.A-REI.11, NC.M3.F-IF.2, NC.M3.F-IF.7, NC.M3.F-BF.1b, NC.M3.F-BF.3

In this unit, students will create, graph and solve absolute value equations and inequalities in one and two variables. Students will evaluate and graph piecewise functions and analyze parts of a piecewise function in context. Students will build new functions by combining standard function types and identify the new function's domain.

## **Unit 6 Title: Circles**

**Standards:** NC.M3.G-GPE.1, NC.M3.G-C.2, NC.M3.G-C.5, NC.M3.G-MG.1, NC.M3.G-CO.14

In this unit, students will derive the equation of a circle using the Pythagorean Theorem, relate it to the distance formula, and complete the square to find the center and radius of a circle. Students will understand and apply theorems about angles (central, inscribed, and circumscribed) and segments (radii, diameters, secants, tangents, and chords) of circles. Students will compute areas of sectors of circles and arc lengths, using both radian and degree measure

## **Unit 7 Title: Modeling & Reasoning with Geometry**

**Standards:** NC.M3.G-GMD.3, NC.M3.G-GMD.4, NC.M3.G-MG.1, NC.M3.G-CO.10, NC.M3.G-CO.11, NC.M3.G-CO.14

In this unit, students will experiment with and verify the properties of the centers of triangles, prove theorems about parallelogram and use volume formulas for three-dimensional figures to solve problems. Students will identify the shapes of two-dimensional cross sections and the three-dimensional figure created by a rotation of a two-dimensional object. Students will also use geometric concepts to model and solve real-world situations involving density, design, and optimization.

## **Unit 8 Title: Statistics**

**Standards -** NC.M3.S-IC.1, NC.M3.S-IC.3, NC.M3.S-IC.4, NC.M3.S-IC.5, NC.MC.S-IC.6

In this unit, students will understand how sample values apply to a larger population of study and be able to identify inaccurate results and possible lurking variables. Students will distinguish between types of studies and types of sampling methods and be able to calculate margin of error and estimate population mean or proportion based on a sample. Students will evaluate real-world reports based on survey data.

## **Unit 9 Title: Trigonometric Functions**

**Standards -** NC.M3.F-IF.1, NC.M3.F-IF.4, NC.M3.F-IF.7, NC.M3.F-IF.9, NC.M3.F-BF.3, NC.M3.F-TF.1, NC.M3.F-TF.2, NC.M3.F-TF.5

In this unit, students will understand that trigonometric ratios are functions of angle measures and be able to relate the unit circle to the periodicity, domain, range, and shape of sine and cosine values and graphs. Students will define a radian measure of an angle and convert between degrees and radians. Students will use technology to investigate transformations of sine graphs and interpret key features.