

## **NC Integrated Math 1 Syllabus 2024**

### **Module 1: Sequences (5 weeks)**

Define quantities; interpret expressions  
Arithmetic sequences as equations, tables; graphs; in context  
Geometric sequences as equations, tables; graphs; in context  
Compare arithmetic & geometric sequences  
Create, use and understand recursive and explicit forms  
Find missing terms

### **Module 2: Linear and Exponential Functions (4.5 weeks)**

Continuity  
Domain and range  
Discrete vs. continuous  
Comparing growth rates  
Laws of exponents  
Interpret equations

### **Module 3: Features of Functions (2 weeks)**

Key features  
Context, tables, graphs & key features  
Interpreting functions; function notation  
Combining functions; use in context  
Problem solving  
Function? Not a function?  
Evaluate and compare functions

### **Module 4: Equations and Inequalities (3 weeks)**

Solving using substitution, elimination, graphing  
Literal equations  
Reasoning about inequalities  
Solving inequalities  
Interpreting solutions to inequalities

### **Module 5: Systems of Equations and Inequalities (3.5 weeks)**

Constraints; Write and graph  
Solve equations in two variables  
Interpret solutions to systems of equations and inequalities  
Connect graphing systems to solving systems of equations  
Elimination

### **Module 6: Quadratic Functions (3 weeks)**

Pattern discoveries  
Multiple representations  
Compare 1st & 2nd degree polynomials  
Compare to other function types  
Compute and compare average rates of change over the same interval in different functions

### **Module 7: Structure of Expressions (4 weeks)**

Features of graphs  
Addition & subtraction of linear & quadratic functions (graphically & algebraically)  
Multiplying and factoring expressions  
Factoring quadratics with a leading coefficient  $\neq 1$   
Solving using factored form  
Solving using square rooting  
Comparing trinomials to factored form

### **Module 8: Connecting Algebra and Geometry (1.5 weeks)**

Perimeter on figures in a plane  
Parallel and perpendicular lines  
Employing triangle proportionality  
Algebraic proofs in a plane using slope  
Interpret endpoints and midpoints of segments in a plane  
Use slope and distance to find area, perimeter, and ID figures in a plane

### **Module 9: Modeling Data (4 weeks)**

Data distribution and statistical representations (histograms and boxplots)  
Comparing sets of data distributions  
Mean, median, spread, standard deviation – analyze the effects of changes in data  
Interpret two-way frequency tables  
Conditional probability statements  
Correlation coefficient  
Lines of fit & exponentials of best fit  
Interpret linear models  
Interpolate and extrapolate  
Association vs. causation  
Explaining correlation coefficients, residuals and linear regressions

**Link to NC Math 1 Standard: [HERE](#)**

**The final exam is worth 20% of students' grades for the course as required by the state of North Carolina.**

**8th Grade Standards** are woven in throughout the year. Students are not subject to the NC EOG for 8th grade if they take the Math 1 EOC or Math 2 as 8th graders.

**TUTORING** is available through the parent academy and through other sources that will be shared through Announcements in Canvas course once established. Students may receive extra assistance before school with prior notice if there is NOT a test or quiz that day.

**DESMOS** Install the Desmos app on your phone and other devices. You may also use Desmos with an Internet connection at [desmos.com](https://www.desmos.com). We will frequently use this graphing calculator. It is free. It is required. You must also have a student Desmos account.

**Outside of class:** Time together is sacred. We will not spend time together on tasks students can complete on their own. Class time is for discovering and discussing mathematics and expanding our love and appreciation of mathematics.

Students will be assigned practice problems frequently, though perhaps not daily. Those will be checked with peers. In class, we review practice problems about which students have quality questions. Practice problems may reappear on quizzes.

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To receive **periodic text** messages for NC Math 1 NWMS, text @nwmsmath1 to 81010. Opt out by replying 'unsubscribe@nwmsmath1'. You may also text to 336-268-8985. Standard text rates apply. Or go here:



If you would rather have email notifications, go to <https://www.remind.com/join/nwmsmath1> to signup for email notifications. Please note, I will likely see an email before a Remind message if you contact me.

**EXPECTED each day in class:**

Students should carry supplies needed for class: sharpened pencils; 1 sturdy composition notebook for notes & examples; current unit workbooks. Also expected: Eager learners willing to work and communicate. 😊

**GRADING:**

The final exam is worth 20% of students' grades for the course as required by the state of North Carolina. This is the EOC.

Quizzes & tests are graded. Homework & classwork are part of the learning process and must be completed. Homework & classwork will count for no more than 25% of the quarterly grade. **No** extra credit is given in this class. Re-quizzes are possible within one week provided the student gets help to understand misconceptions experienced on the quiz. The new grade will be  $(2 \times \text{new} + \text{old}) / 3$ . No re-quizzing is available for scores  $> 89\%$ . There is NO re-testing for Unit tests. Tests will comprise at least 50% of the quarterly grade and quizzes will make up at least 25%.

**Discipline:**

Students are expected to respect themselves & others. Disruptions to the learning environment will not be tolerated. 1st offence-verbal warning; 2nd offence: call home; 3rd offence: official office writeup. Disruptive students are not welcome in tutoring.