Collaborative NC Math 1 Pacing Guide

2016-17 North Carolina Math 1
Collaborative Pacing Guide

This pacing guide is the collaborative work of math teachers, coaches, and curriculum leaders from 38 NC public school districts. The teams worked through two face-to-face meetings and digitally to compile the information presented. NC Math 1, 2, and 3 standards were used to draft possible units of study for these courses. This is a first draft living document. Teams plan to meet throughout the year to continually tweak, update and refine these guides. Updates will be posted as available to this google document.

Please reference the NC Math 1, 2, or 3 standards for any questions or discrepancies. This document should be used only **after** reading the NC Math 1, 2, and 3 standards and the Math Resource for Instruction provided by NC DPI.

If you have suggestions or comments that you would like the collaborative writing team to consider for revisions, please email sdupree@wcpss.net or stefanie.buckner@bcsemail.org.

Units for NC Math 1	Number of Days (Block)	Number of Days (Traditional)
Unit 1: Equations & Introduction to Functions	10	20
Unit 2: Linear Functions	15	30
Unit 3: Systems of Equations and Inequalities	12	24
Unit 4: Exponential Functions	14	28
Unit 5: Quadratic Functions	15	30
Unit 6: Statistics	9	18
Total (allowing for flex days)	**75**	**150**

Unit 1: Equations & Introduction to Functions _

Estimated Days: 10 Semester or 20 Year Long

Standards	*Learning Intentions*
NC.M1.A-SSE.1a NC.M1.A-REI.3 NC.M1.A-REI.1 NC.M1.A.REI.12 NC.M1.A-CED.1 NC.M1.A-CED.4	A. Construct expressions, equations, and inequalities from a given context and determine the appropriateness of the solution(s).
NC.M1.F-IF.2 NC.M1.F-IF.1 NC.M1.F-IF.4	B. Distinguish key features of a function given multiple representations.

Unit 2: Linear Functions_

Estimated Days: 15 Semester or 30 Year Long

Key Features of Linear Functions	
Standards	***Learning Intentions***
NC.M1.A-SSE.1a NC.M1.A-SSE.1b NC.M1.F-IF.6 NC.M1.A-CED.1 NC.M1.A-CED.2 NC.M1.F-BF.1a NC.M1.F-LE.1 NC.M1.A-REI.10 NC.M1.G-GPE.5	A. Identify, create, and graph linear equations and their key features.
NC.M1.F-IF.3 NC.M1.F-BF.2 *NC.M1.A-REI.1 - embedded throughout entire unit-	B. Determine the explicit and recursive formula for given arithmetic sequences.

Applications of Linear Functions	
Standards	***Learning Intentions***
NC.M1.F-LE.5 NC.M1.F-IF.5 NC.M1.S-ID.9 NC.M1.F-IF.9 NC.M1.F-IF.7	A. Understand and compare the key features of linear functions.
NC.M1.S.ID.6 NC.M1.S-ID.7 NC.M1.S-ID.8	B. Assess the line of best fit for a given set of data by using the correlation coefficient, residuals, and least squares regression line.
NC.M1.S-ID.6b NC.M1.S-ID.6a NC.M1.G-GPE.6 NC.M1.G-GPE.4	C. Apply the distance and midpoint formulas in context.

Unit 3: Systems of Equations & Inequalities

Estimated Days: 12 Semester or 24 Year Long

Standards	***Learning Intentions***
NC.M1.A-CED.3 NC.M1.A-REI.5	A. Create systems of linear equations in context.
NC.M1.A-REI.6	B. Solve systems of linear equations and interpret solutions in context.
NC.M1.A-REI.11 NC.M1.A-REI.12	C. Create and solve systems of linear inequalities and interpret solutions in context.

Unit 4: Exponential Functions

Estimated Days: 14 Semester or 28 Year Long

Key Features of Exponential Functions

Standards	*Learning Intentions*
NC.M1.N-RN.2	A. Understand and apply exponent properties.
NC.M1.F-IF.3 NC.M1.F-BF.2	B. Determine the explicit and recursive formula for given geometric sequences.
NC.M1.F-IF.2 NC.M1.F-IF.4 NC.M1.A-CED.1 NC.M1.A-CED.2 NC.M1.A-REI.10 NC.M1.F-IF.6 NC.M1.F-LE.5	C. Evaluate, create, and interpret exponential functions in context.

Applications of Exponential Functions

Standards	*Learning Intentions*
NC.M1.F-LE.1 NC.M1.F-IF.5 NC.M1.F-IF.7	A. Identify situations and practical domains for exponential functions.
NC.M1.F-IF.8b NC.M1.F-LE.3 NC.M1.A-SSE.1 NC.M1.F-IF.9 NC.M1.A-REI.11	B. Compare, interpret, and explain key features of exponential functions.
NC.M1.F-BF.1a NC.M1.F-BF.1b NC.M1.S-ID.6c	C. Write and apply exponential functions given multiple representations.

Unit 5: Quadratic Functions

Estimated Days: 15 Semester or 30 Year Long

Key Features of Quadratic Functions

Standards	*Learning Intentions*
NC.M1.A-APR.1 NC.M1.N-RN.2 NC.M1.A-SSE.1ab	A. Understand the terms and properties of polynomials.
NC.M1.F-IF.7 NC.M1.F-IF.9 NC.M1.F-LE.3 NC.M1.F-IF.6 NC.M1.F-IF.8a NC.M1. A-REI.10 NC.M1.F-IF.2 NC.M1.A-CED.2 NC.M1.A-CED.1	B. Understand how the values of a, b, and c in the quadratic expression affect the key features of the function to include: the direction of opening, steepness, maximum, minimum, y-intercept, axis of symmetry, end behavior and placement on the graph.

NC.M1.A-SSE.3 NC.M1.A-REI.4 NC.M1.A-APR.3 NC.M1.A-REI.1 NC.M1.A-REI.11	C. Understand how to factor and solve quadratics.
Applications of Quadratic Functions	
Standards	***Learning Intentions***
NC.M1.F-IF.4 NC.M1.A-APR.1 NC.M1.A-SSE.1b NC.M1.F-BF.1b NC.M1.F-IF.5 NC.M1.A-REI.11 NC.M1.F-IF.7 NC.M1.S-ID.8	A. Understand equivalent forms of quadratic expressions can be created by applying operations to expressions. B. Understand the key features of quadratic functions in context and their graph. ***Note:*** *Incorporate the use of technology to approximate solutions or successive approximations with a table of values.*

Unit 6: Statistics

Estimated Days: 9 Semester or 18 Year Long

Standards	***Learning Intentions***
NC.M1.S-ID.1 NC.M1.S-ID.2 NC.M1.S-ID.3	Understand how to summarize, represent, interpret and compare data on a single count or measurement variable.