# North Carolina Math 1A & B Extended Content Standards

**Standards for Mathematical Practice**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically.
6. Attend to precision
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

**The *Alternate Achievement Standards for Students With the Most Significant Cognitive Disabilities Non-Regulatory Guidance* states, "…materials should show a clear link to the content standards for the grade in which the student is enrolled, although the grade-level content may be reduced in complexity or modified to reflect pre-requisite skills. Throughout the Standards descriptors such as, describe, count, identify, etc., should be interpreted to mean that the students will be taught and tested according to their mode of communication.**

| **North Carolina Extended Content Standards** | |
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| Number and Quantity | |
| The Real Number System | |
| *Objective #* | *.*<br>*Extend the properties of exponents to rational exponents.* |
| NC.ECS.M1.N-RN.2 | Determine the value of a quantity that is squared (up to 20) or cubed, (up to 10). |
| **Algebra** | |
| Seeing Structure in Expressions | |

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| NC.ECS.M1.A-SSE.1 | Identify the different parts of the linear expression (Ax +B) and explain their meaning within the context of a problem. |
| Seeing Structure in Expressions | |
| *Write expressions in equivalent forms to solve problems.* | |
| NC.ECS.M1.A-SSE 3 | Use the properties of operations to rewrite expressions. (distributive, commutative, associative). |
| Arithmetic with Polynomial Expressions | |
| *Perform arithmetic operations on polynomials.* | |
| NC.ECS.M1.A-APR.1 | Add and subtract quadratic expressions. $(2x^2 + 3x - 1) - (x^2 + 4x - 2)$. |
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| **Creating Equations** | |
| *Create equations that describe numbers or relationships.* | |
| NC.ECS.M1.A-CED.1 | Use equations to solve problems using addition and subtraction with decimals when a part is unknown (e.g., a can of soda cost $0.75 and John has $0.50 how much more money does he need?). |

| Reasoning with Equations and Inequalities |
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| *Understand solving equations as a process of reasoning and explain the reasoning.* |

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| NC.M1.A-REI.1 | Explain each step in solving an equation. |
| **Reasoning with Equations and Inequalities** | |
| *Solve equations and inequalities in one variable* | |
| NC.ECS.M1.A-REI.3 | Solve a three step linear equation. |
| Reasoning with Equations and Inequalities | |
| *Solve systems of equations.* | |
| NC.ECS.M1.A-REI.10 | Understand that a graph represents the solutions to an equation.<br>Interpret a point on a graph in context. |
| **Functions** | |
| **Interpreting Functions** | |
| *Understand the concept of a function and use function notation.* | |
| NC.ECS.M1.F-IF.1 | Build an understanding that a function occurs when each input *(x)* has only one output *(y)*.<br>Students recognize *f(x)* function notation. |
| NC.ECS.M1.F-IF.2 | Evaluate linear functions. |
| NC.ECS.MI.F-IF.3 | Use patterns to solve problems (adding and multiplying). |
| **Interpreting Functions** | |
| *Interpret functions that arise in applications in terms of the context.* | |
| NC.ECS.M1.F-IF.4 | Given a graph of a linear function, identify the rate of change (slope) and intercepts.<br>Identify whether the line is increasing or decreasing, and whether it has a positive or negative slope. |

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| NC.ECS.M1.F-IF.6 | Given two points on a line, identify the slope. |
| **Interpreting Functions** | |
| *Analyze functions using different representations.* | |
| NC.ECS.M1.F-IF.7 | Given a linear function, identify the slope and y intercept and graph the line. |
| NC.ECS.M1.F-IF.9 | Given two graphs of linear functions compare the rates of change and initial values. |

| **Geometry** | |
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| **Expressing Geometric Properties with Equations** | |
| *Use coordinates to prove simple geometric theorems algebraically.* | |
| NC.ECS.M1.G-GPE.4 | On a coordinate plane find the perimeter and area of geometric figures, in which all needed measurements can be counted on the grid.<br><br>Identify geometric figures on the coordinate plane, using estimation and counting. |
| NC.ECS.M1.G-GPE.5 | Know the attributes of perpendicular lines, parallel lines, and line segments<br><br>Compare lines on the coordinate plane, to identify parallel lines and recognize that parallel lines have the same slope (rate of change). |
| NC.ECS.M1.G-GPE.6 | Use coordinates to find the midpoints or endpoints of a line segment, in the first quadrant. |

| Statistics and Probability | |
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| **Interpreting Categorical and Quantitative Data** | |
| *Summarize, represent, and interpret data on a single count or measurement variable.* | |
| NC.ECS.M1.S-ID.1 | Given data, use technology to construct a simple graph (line, pie, bar, or picture) or table, and interpret the data. |
| NC.ECS.M1.S-ID.2 | Interpret general trends on a graph or chart. (more, less, increasing, decreasing)<br>Given a graph, table, or word problem, calculate the mean of a given data sets (when the number of data points is fewer than five) and compare the mean. |
| NC.ECS.M1.S-ID.3 | Identify in general outliers in a data set and explain why they are important to identify. |