

North Carolina Tutorials are designed specifically for the Common Core State Standards for English language arts, the North Carolina Standard Course of Study for Math, and the North Carolina Essential Standards, to prepare students for the READY End-of-Course Assessments.

Math Tutorials offer targeted instruction, practice and review designed to develop computational fluency, deepen conceptual understanding, and apply mathematical practices. They automatically identify and address learning gaps down to elementary-level content, using adaptive remediation to bring students to grade-level no matter where they start. Students engage with the content in an interactive, feedback-rich environment as they progress through standards-aligned modules. By constantly honing the ability to apply their knowledge in abstract and real world scenarios, students build the depth of knowledge and higher order skills required to demonstrate their mastery when put to the test.

In each module, the Learn It and Try It make complex ideas accessible to students through focused content, modeled logic and process, multi-modal representations, and personalized feedback as students reason through increasingly challenging problems. The Review It offers a high impact summary of key concepts and relates those concepts to students' lives. The Test It assesses students' mastery of the module's concepts, providing granular performance data to students and teachers after each attempt. To help students focus on the content most relevant to them, unit-level pretests and posttests can quickly identify where students are strong and where they're still learning.

### **Unit 1: Real Number System**

- **LAWS OF EXPONENTS**
- **MONITORING PRECISION AND ACCURACY**

### **Unit 2: Expressions and Equations**

- **FORMULATING AND SIMPLIFYING ALGEBRAIC EXPRESSIONS**
- **ONE-STEP EQUATIONS AND INEQUALITIES**
- **MULTI-STEP EQUATIONS AND INEQUALITIES**
- **AXIOMS OF EQUALITY**
- **LITERAL EQUATIONS**

### **Unit 3: Functions**

- **FUNCTIONS AND RELATIONS**
- **EVALUATING FUNCTIONS**
- **DOMAIN AND RANGE**
- **MULTIPLE REPRESENTATIONS OF FUNCTIONS**

**Unit 4: Exponential Functions, Equations, and Inequalities**

- EXPONENTIAL FUNCTIONS
- EXPONENTIAL GROWTH AND DECAY
- SOLVING EXPONENTIAL INEQUALITIES

**Unit 5: Factoring**

- FACTORING QUADRATIC TRINOMIALS
- FACTORING SPECIAL CASES
- FACTORING CUBIC POLYNOMIALS

**Unit 6: Representations of Quadratic Functions**

- ANALYZING GRAPHS OF QUADRATIC FUNCTIONS
- REPRESENTATIONS OF QUADRATIC FUNCTIONS

**Unit 7: Solving Quadratic Equations**

- SOLVING QUADRATIC FUNCTIONS WITH FACTORING
- COMPLETING THE SQUARE
- QUADRATIC FORMULA
- COMPLEX NUMBERS AND QUADRATIC FUNCTIONS

**Unit 8: Polynomials**

- POLYNOMIAL BASICS
- ADDITION AND SUBTRACTION OF POLYNOMIALS
- MULTIPLICATION OF POLYNOMIALS
- ARITHMETIC OPERATIONS ON FUNCTIONS

**Unit 9: Nonlinear Functions**

- ABSOLUTE VALUE FUNCTIONS
- SOLVING SYSTEMS OF LINEAR EQUATIONS: GRAPHING
- CIRCLES
- SYSTEMS OF NONLINEAR EQUATIONS

**Unit 10: Radical Functions and Equations**

- ANALYZING GRAPHS OF SQUARE ROOT FUNCTIONS
- SOLVING SQUARE ROOT EQUATIONS

**Unit 11: Rational Functions and Equations**

- ANALYZING GRAPHS OF RATIONAL FUNCTIONS
- SOLVING RATIONAL EQUATIONS

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- **MODELING SITUATIONS WITH RATIONAL FUNCTIONS**

**Unit 12: The Coordinate Plane**

- **LENGTH AND THE DISTANCE FORMULA**
- **MIDPOINT FORMULA ON THE COORDINATE PLANE**

**Unit 13: Geometric Transformations**

- **TRANSFORMATIONS ON THE COORDINATE PLANE**
- **DILATIONS, TRANSLATIONS, ROTATIONS, AND REFLECTIONS**

**Unit 14: Triangles**

- **TRIANGLES AND CONGRUENCE TRANSFORMATIONS**
- **TRIANGLE ANGLE THEOREMS**
- **TRIANGLE BISECTORS**
- **MEDIANS AND ALTITUDES OF TRIANGLES**

**Unit 15: Triangles and Trigonometry**

- **PYTHAGOREAN THEOREM**
- **TRIGONOMETRIC RATIOS**
- **LAWS OF SINE AND COSINE**

**Unit 16: Geometry**

- **CONSTRUCTIONS**
- **CONVERTING BETWEEN TWO-DIMENSIONAL FIGURES AND THREE-DIMENSIONAL SOLIDS**
- **MODELING SITUATIONS WITH GEOMETRY**

**Unit 17: Basic Probability Concepts**

- **INTRODUCTION TO PROBABILITY**
- **COMBINATIONS AND PERMUTATIONS**

**Unit 18: Advanced Probability Concepts**

- **CONDITIONAL PROBABILITY**
- **GEOMETRIC PROBABILITIES**

**Unit 19: Statistics**

- **ANALYZING STATISTICAL SAMPLES**
- **CONCLUSIONS IN DATA**