

PROGRAM OVERVIEW

Introduction to the Program

Introduction

The *North Carolina Foundations of Math 1* program is a complete set of materials developed to provide necessary differentiation in meeting the North Carolina Standard Course of Study (NCSCOS) for Mathematics. Topics including both North Carolina Math 1 and middle school standards are built around accessible core curricula, ensuring that the *North Carolina Foundations of Math 1* program is useful for striving students and diverse classrooms. These resources may be used in year-long classes and offer additional support for ELL students, students with learning disabilities, and other diverse learners.

This program realizes the benefits of exploratory and investigative learning and employs a variety of instructional models to meet the learning needs of students with a range of abilities.

The *North Carolina Foundations of Math 1* program includes components that support problem-based learning, instruct and coach as needed, include middle school prerequisite instructional learning objects, provide practice, and assess students' skills. Instructional tools and strategies are embedded throughout.

The program includes:

- More than 175 hours of lessons
- Essential Questions for each instructional topic
- Scaffolded Practice
- Targeted Prerequisite Skills
- Conceptual Tasks
- Vocabulary
- Instruction and Guided Practice
- Problem-based Tasks and Coaching questions
- Step-by-step graphing calculator instructions for the TI-Nspire and the TI-83/84
- Station activities to promote collaborative learning and problem-solving skills

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Purpose of Materials

The *North Carolina Foundations of Math 1* program has been organized to coordinate with the North Carolina Foundations of Math 1 content map and specifications from the NCSCOS. Each lesson includes activities that offer opportunities for exploration and investigation. These activities incorporate concept and skill development and conceptual learning, then move on to the application of new skills and concepts in problem-solving situations. Throughout the lessons and activities, problems are contextualized to enhance rigor and relevance.

This program includes all the topics addressed in the North Carolina Foundations of Math 1 content map. These include:

- Introduction to Functions and Equations
- Linear Functions
- Modeling with Linear Functions
- Connecting Algebra and Geometry on the Coordinate Plane
- Exponential Functions
- Quadratic Functions
- Systems of Equations and Inequalities
- Statistics

The eight Standards for Mathematical Practice are infused throughout:

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.

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Structure of the Program

The *North Carolina Foundations of Math 1* program materials are completely reproducible. The Program Overview is the first section. This section helps you to navigate the materials, offers a collection of research-based Instructional Strategies along with their literacy connections and implementation suggestions, and shows the correlation between the NCSCOS for Mathematics and the instructional framework and course requirements.

The remaining materials focus on content, knowledge, and application of the eight units in the North Carolina Foundations of Math 1 program: Introduction to Functions and Equations, Linear Functions, Modeling with Linear Functions, Connecting Algebra and Geometry on the Coordinate Plane, Exponential Functions, Quadratic Functions, Systems of Equations and Inequalities, and Statistics. The units in this program are designed to be flexible so that you can mix and match activities as the needs of your students and your instructional style dictate.

Each lesson includes scaffolded practice at a DOK level 1 and 2 intended to provide access for diverse learners.

The Station Activities correspond to the content in the units and provide students with the opportunity to apply and reinforce concepts and skills, while you have a chance to circulate, observe, speak to individuals and small groups, and informally assess and plan.

Each unit includes conceptual tasks, a mid-unit assessment, and an end-of-unit assessment. These enable you to gauge how well students have understood the material as you move from lesson to lesson and to differentiate as appropriate.