

NC Parent Brief – 8th Grade Math



Purpose: This document is intended to help parents/guardians understand the NC Standard Course of Study (SCOS), the major concepts in the NC SCOS for 8th grade mathematics and provide a list of ways to support their student(s) at home and ideas for partnering with their child's teacher, school or district.

What is the NC Standard Course of Study?

North Carolina's *Standard Course of Study* defines the appropriate content standards for each grade level and each high school course to provide a uniform set of learning standards for every public school in North Carolina. These standards define what students know and should be able to do by the end of a specified year or course. Based on current research and exemplary practices, the *Standard Course of Study* is designed to support North Carolina educators in providing the most challenging education possible for the state's students. The goal of these standards is to prepare all students to become career and college ready.

Who determines how the standards are taught?

Local school districts choose the comprehensive curriculum to deliver instruction to students to help meet the expectations of the content standards. Instruction is delivered by the classroom teacher and is aligned to the local school and district curriculum; as well as the North Carolina Standard Course of Study.



Content

Middle school math is an extension of mathematics learned in elementary grades. Students build on conceptual development models as they develop number sense and fluency* with operations on rational numbers. Students apply properties of operations when simplifying expressions, solving equations/inequalities while exploring geometric and statistical concepts. Middle school mathematics prepares students for advanced work with algebraic concepts, functions, geometric relationships and statistical analysis in high school and beyond. The Standards for Mathematical Practice are habits that help students to develop ownership of their own learning and proficiency as they engage in mathematics learning.

What's New in Grade 8 Math?

The table below summarizes the content for 8th grade mathematics, along with content from the previous grade level and the next grade level.

Grade Seven Mathematics

- Rates, ratios and proportional relationships
- Fluency* with rational numbers
- Problem solving with expressions, equations, and inequalities
- Area and circumference of circles
- Area and perimeter of polygons
- Geometric properties of triangles and angles
- Comparing distributions of one-variable data
- Probability

Grade Eight Mathematics

- Solving linear equations and inequalities
- Identifying, analyzing and comparing functions
- Developing understanding of similarity and congruency using transformations and coordinate geometry
- Pythagorean Theorem
- Volume of cylinders, cones and spheres
- Patterns in two-variable data

NC Math 1

- Solving problems with linear, quadratic, and exponential functions
- Solving problems involving systems of equations
- Identifying, analyzing and comparing multiple representations of linear, quadratic and exponential functions
- Reasoning with lines, angles and polygons in the coordinate plane
- Summarize, interpret and analyze data

*Fluency is defined as the ability to apply procedures accurately, efficiently, and flexibly; to transfer procedures to different problems and contexts; to build or modify procedures from other procedures; and to recognize when one strategy or procedure is more appropriate to apply than another. NCTM Position Paper, Procedural Fluency in Mathematics, Retrieved from https://www.nctm.org/uploadedFiles/Standards_and_Positions/Position_Statements/Procedural%20Fluency.pdf



Support mathematics learning outside of school.

There are a variety of ways that parents and guardians can support their middle grade math student at home. Here are a few suggestions for supporting student learning outside of school.

1. **Encourage perseverance.** Problem-solving requires students to conjecture, inference, test and rethink strategies. It is important that parents, teachers and students partner to help their students work through difficult problems.
2. **Ask students questions about what they're learning in school.** Class notes, assignments, and activities are resources that students can use when studying or doing homework. They provide insight on the strategies and methods that students are expected to use when solving problems.
3. **Make mistakes opportunities for reflection and learning.** Having students share their graded work helps them to reflect on their learning. These assignments can be used to determine areas of growth. This includes homework, classwork, and assessments. Doing this regularly will assist parents in monitoring progress, minimizing surprises in the gradebook or on report cards.
4. **Seize opportunities to practice math in the real world.** Numbers and patterns are visible everywhere. Look for opportunities during family time to see mathematics in the world.
5. **Practice computational skills to increase their fluency.** Students should be fluent with solving one-variable linear expressions by the end of 8th grade. Regular practice will increase their speed and efficiency with these procedural fluencies.
6. **Support student responsibility.** Help your student to take ownership for their own learning. Ask them to assess their own strengths and weaknesses and how they can monitor their own learning.



Partnering with the school

A healthy parent-student-school relationship is a vital component to the success of students. Asking questions can help parent and guardians to understand what their student is learning so that they can provide support to their student and teacher.

1. **Classroom instruction.** Ask questions to help you understand what and how your student will be learning. What math will my student be learning this year? How will I know throughout the year? What skills should they already have mastered? How will I know if they need more practice? How much and what kind of homework will they be bringing home? How often will students be assessed cumulatively? How many interim assessments are there prior to a summative assessment? What are some ways that I can help my student prepare at home?
2. **District Curriculum.** Find out what curriculum resources the district uses to teach the NC SCOS. What curriculum materials does the school or district use? Is there a parent resource? Will my student have a workbook or a textbook? If so, will they bring it home?
3. **District and State Assessments.** Get information about the assessment schedule for the year. Find out what assessments are required by the district and which are required by the state. What assessments are required this year? How often throughout the year will they be assessed? How and when will I receive the results?
4. **Parent-teacher communication.** Open a line of communication with the teacher and the school so that you can stay abreast of your student's progress. How is my student progressing? What are some things that my student does well? What gaps in understanding do you see?