NC Parent Brief – 5th 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 5th grade mathematics, 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.

The Content
Elementary math builds a strong foundation of mathematical understanding that will be applied in later grades. Students develop number sense and fluency with operations using conceptual models. Students develop an understanding of properties of operations and apply the properties to problem solving. Students in elementary grades also develop an understanding of shapes and their properties; as well as, collecting and representing data in various ways. Students will apply what they learn in elementary mathematics to middle school mathematics and beyond. The Standards for Mathematical Practice are habits that help students develop a sense of ownership and proficiency as they engage in mathematics learning.

What's New in Grade 5 Math?
The table below summarizes the content for 5th grade mathematics, along with content from the previous grade level and the next grade level.

Grade Four Mathematics
- Operations using the four operations with whole numbers
- Generate and analyze patterns
- Understand place value and properties of operations
- Understand decimal notation
- Build fractions
- Understand concepts of angle and measure angles
- Apply understanding of area
- Classify shapes by properties of their lines and angles

Grade Five Mathematics
- Analyze patterns and relationships
- Understand place value
- Operations with multi-digit whole numbers, decimals and fractions
- Volume of rectangular prisms
- Writing and interpreting numerical expressions
- Conversions using multiplicative reasoning
- Graphing in the coordinate plane

Grade Six Mathematics
- Ratios and ratio reasoning
- Fraction fluency*
- Using and applying rational numbers
- Reasoning with expressions, equations
- Area of triangles and quadrilaterals
- Surface area and volume of prisms and pyramids
- Statistical questions and univariate numerical 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 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 whole numbers, decimals and fractions by the end of 6th 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 parents 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?