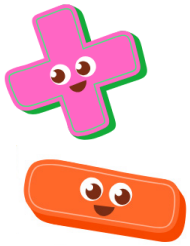


Family Friendly Math

GUIDE FOR FIFTH GRADE

In the fifth grade, the focus of South Carolina College- and Career-Ready Standards in mathematics shifts from working with whole numbers to working with decimals.
Students will also be introduced to finding the range and mode of a data set represented in various ways. They will now use grouping symbols when solving equations. Fifth graders also build on the work done in previous grades by applying different strategies for addition, subtraction, multiplication, and division while reinforcing multi-digit operations, converting between fractions and decimals, and evaluating numerical expressions using grouping symbols.
By the end of fifth grade, students will also be able to use formulas to determine the area and perimeter of composite shapes, learn about the volume of right rectangular prisms, and plotting ordered pairs in the coordinate system.

Log on to the SC Department of Education website, for the complete standards.

Steps to Success

This document is designed to:

- Provide examples of the standards, skills, and knowledge your child will learn in mathematics and should be able to do upon exiting fifth grade
- Suggest activities on how you can help your child at home
- Offer additional resources for information and help

The South Carolina College-and Career-Ready Standards for Mathematics:

- Outline the knowledge and skills students must master so that, as high-school graduates, they have the expertise needed to be successful in college or careers.
- Provide a set of grade-level standards, "stair steps," based on the previous grade's standards which serve as the foundation for the next grade.
- Ensure that no matter where a student lives in South Carolina, the expectations for learning are the same.

Human knowledge now doubles about every three years. Therefore, revision of South Carolina's standards occurs periodically to respond to this growth of knowledge and increase of needed skills so our students will be ready for college or jobs. The College-and Career-Ready Standards prepare students for dealing with the growing mass of information by not only emphasizing content knowledge but by also stressing the skills of reasoning, analyzing data, and applying information to examine and solve situations.

South Carolinians developed these academic standards for South Carolina's children. The Mathematics standards are aligned with the Profile of the South Carolina Graduate, which summarizes the knowledge, skills, and habits employers expect. Developed by business leaders, the Profile is approved by the South Carolina Chamber of Commerce and endorsed by the Superintendents' Roundtable as well as South Carolina's colleges and universities. The Profile demands world-class knowledge and skills, and emphasizes critical thinking and problem solving, communication, and interpersonal skills.

DATA, PROBABILITY, AND STATISTICAL REASONING

Fifth-grade students will be introduced to finding the range and mode using data. Students will also analyze data represented in various graphs to make predictions, draw conclusions, and solve two-step problems. Finally, students will use a fraction to show the likelihood of a simple event occurring. These **Steps to Success** include:

- Describe data using the range and mode of whole numbers, fractional data, and decimal data.
- Solve two-step real-world problems using whole number and fractional data represented in various ways.
- Analyze data in graphs to make predictions and draw conclusions.
- Represent the possible results of a simple event such as rolling a number cube, or spinning a spinner, etc. as 0, a fraction, or 1.

MEASUREMENT, GEOMETRY, AND SPATIAL REASONING

Fifth-grade students are introduced to the concept of volume of a right rectangular prism and the coordinate system through mathematical and real-world situations. Students will also learn to estimate and measure lengths of objects, convert between measurements within different systems, and solve real-world problems involving the perimeter and area of combined rectangles. These **Steps to Success** include:

- Solve real-world problems with area and perimeter of combined rectangles.
- Estimate and measure the volume of a rectangular prism using unit cubes
- Convert measurement into a larger or a smaller unit (for example, inches into feet or feet into inches, centimeters into meters, or meters into centimeters) to solve real-world problems
- Estimate and measure length to the nearest eighth of an inch or millimeter
- Identify the origin, x-axis, and y-axis on a coordinate grid
- Write, plot, and label ordered pairs on a coordinate grid
- Represent mathematical or real-world situations on a coordinate grid

NUMERICAL REASONING

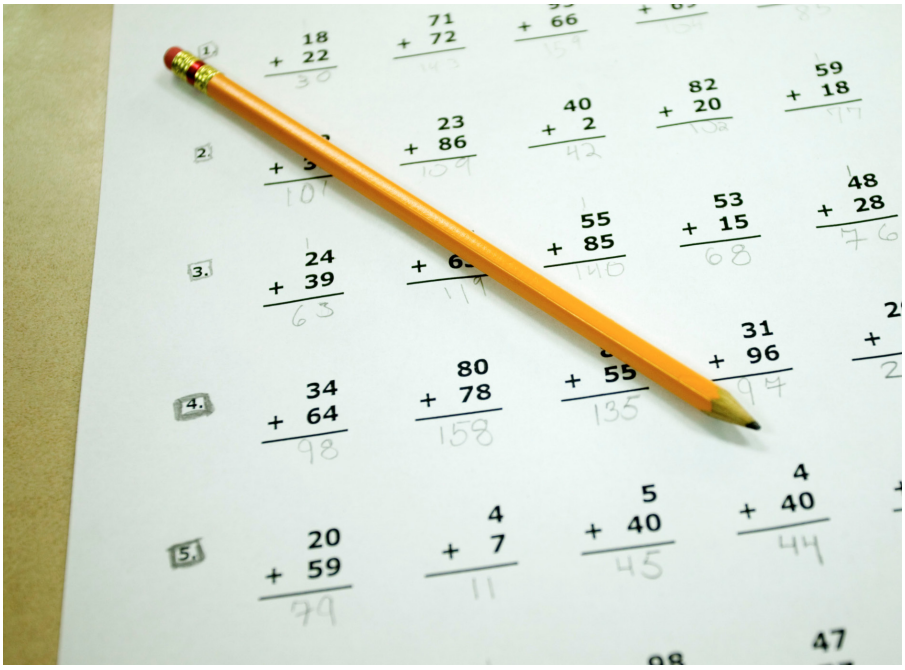
Fifth-grade students work to build a strong understanding of decimal values. They represent and compare multi-digit numbers with decimals, as well as use equivalent forms of fractions and decimals to compare numbers. These **Steps to Success** include:

- Read, write, and represent numbers within 999 with decimals to the thousandths in pictorial, word, standard, and expanded form
- Describe how the value of a digit in a multi-digit number changes when moved one or more places to the left or right
- Round decimal numbers up to 999 to the nearest hundredths, tenths, or whole number.
- Use patterns to explain the exponents when multiplying and dividing by powers of 10
- Find a common denominator to compare fractions and mixed numbers with like and unlike denominators and record the comparison using symbols

PATTERNS, ALGEBRA, AND FUNCTIONAL REASONING

Fifth-grade students will use multiple representations to think about and solve problems involving the addition, subtraction, multiplication, and division, of decimals, fractions, and whole numbers. Many opportunities with hands-on and pictorial models will be used and students can apply their learning to mathematical and real-world situations. Students will also be introduced to graphing ordered pairs on a coordinate plane, as well as function tables, and will begin to use grouping symbols such as parentheses and learn how to solve expressions. Lastly, fifth-grade students will gain an understanding of how factors and multiples can help with their work with fractions. These **Steps to Success** include:

- Use a strategy to multiply a two-or three-digit number by a two-digit number such as 22 x 14 within a real-world situation
- Use a strategy to divide a multi-digit number by a two-digit number such as 1,222 ÷ 14 within a real-world situation
- Use a strategy to add and subtract decimals to the hundredths place
- Use a strategy to multiply a one-digit whole number by a decimal to the hundredths place
- Use a strategy to divide a decimal to the hundredths place by a one-digit whole number
- Use a strategy to add and subtract fractions with different denominators and explain using real world situations
- Use a strategy to multiply a fraction by a fraction or by a whole number
- Represent and explain the division of a whole number by a unit fraction (2 ÷ ½)
- Represent and explain the division of a unit fraction by a whole number (½ ÷ 2)
- Find the least common multiple (LCM)
- Find the greatest common factor (GCF) of two numbers less than 50
- Find a rule that describes the pattern in a function table and write it as an expression.
- Use an expression to represent a two-step real-world situation and solve it



Learning at Home

As your fifth-grade child moves into the world of Geometry and Algebra, he needs help with specific skills. Remember, a positive attitude is important to her. Here are some suggestions for things to do at home to help your child learn:

Divide

Use apples, grapes, or candy bars, real or drawn, to practice dividing them among friends (such as two bars among 3 friends, or 15 grapes between two friends). Focus on what remains and how it relates to the fractional parts to be shared.

Bake

Get in the kitchen and bake cookies or a cake, watching your child use your measuring cups and spoons. While it bakes, use equations to double the amounts in the recipe or divide them in half.

Go Shopping

Go "shopping" with clothing ads, catalogs, or take-out menus to practice decimals. Have your child pick out a wardrobe, school supplies, or a dinner for the family, for example. Write down the cost of each item. Get your student to add, subtract, or multiply the cost of the items. Check the total with a calculator and discuss how the location of the decimal in the answer relates to the location of the decimal in the items added, subtracted, or multiplied.

Play Games

Play games, such as Battleship, that require locating points on a grid.

ADDITIONAL INFORMATION

- There are many math games and worksheets at http://www.softschools.com/grades/5th_grade/math/.

- The Kahn Academy at https://www.khanacademy.org/ offers online tutoring in all aspects of fifth-grade math. When you sign up your child, the site keeps track of the skills mastered and automatically moves the student through the skill levels.

- For games to help with angles, measurement, and fractions, as well as other skills, try http://mrnussbaum.com/fifth-grade-math/

1205 Pendleton Street
Room 502 Brown Building
Columbia, SC 29201
www.eoc.sc.gov

SC EDUCATION
OVERSIGHT COMMITTEE

Reporting facts. Measuring change. Promoting progress.

The South Carolina Education Oversight Committee (EOC) is an independent, nonpartisan group of 18 educators, business people, and elected officials appointed by the legislature and governor. The EOC enacts the South Carolina Education Accountability Act of 1998, which sets standards for improving the state's K-12 educational system. The EOC reviews the state's education improvement process, assesses how schools are doing, and evaluates the standards schools must meet to build the education system needed to compete in this century.