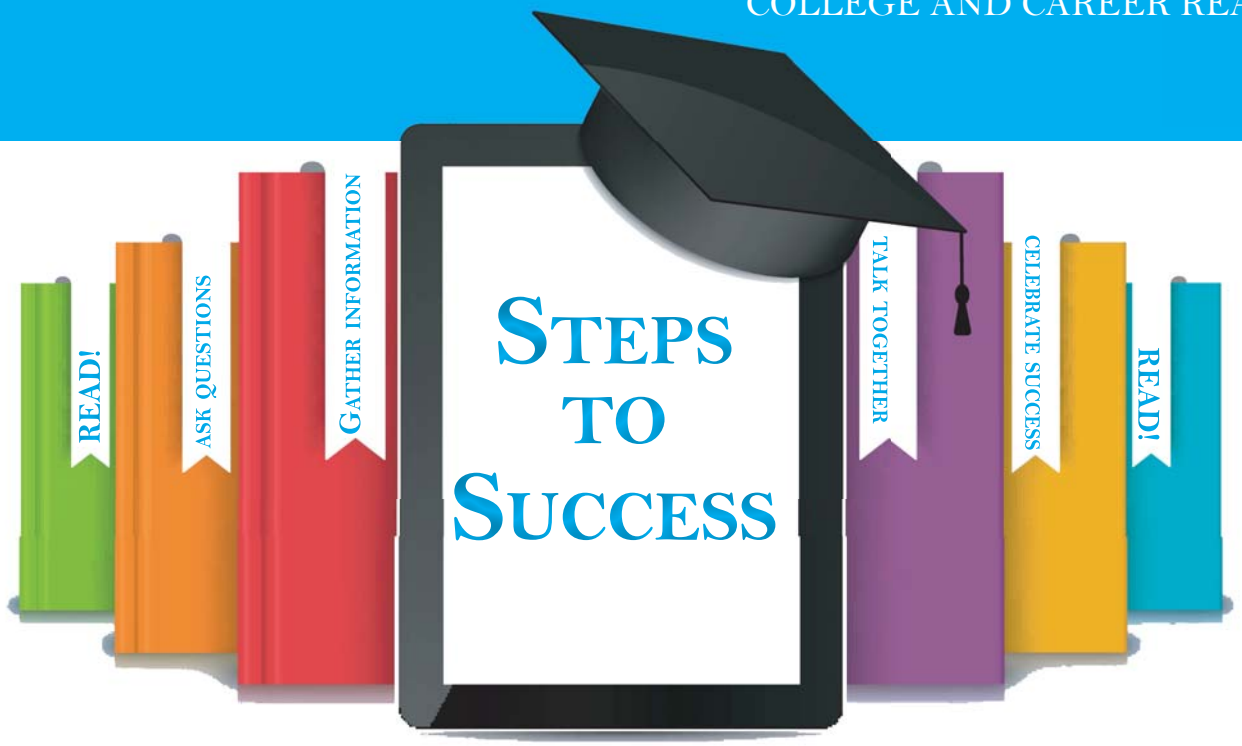
SOUTH CAROLINA STANDARDS
COLLEGE AND CAREER READY



Family-Friendly Guide for First Grade
Mathematics

First-grade students have an increased ability to problem solve. *South Carolina College- and Career-Ready Standards* in math takes advantage of this capability to explore and introduce a number of different concrete building blocks of math, such as operations and number sense. The focus is on the foundation skills they need to become great mathematicians. Your child will work on math problems with real-life applications.

Today, math concepts are taught differently from when you were in school. Don't be surprised when your first grader adds and subtracts from the left instead of the right; she is "bundling," putting numbers into tens in order to understand better our base ten system. He will use number lines and charts to work out solutions.

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 first grade
- Suggest activities on how you can help your child at home
- Offer additional resources for information and help

Log on to the SC Department of Education website, http://ed.sc.gov/instruction/standards-learning/, for the complete standards.

LEARN ABOUT THE STANDARDS

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. (See http://sc-competes.org/wp-content/uploads/2016/01/Profile-of-the-South-Carolina-Graduate_Updated.pdf) 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.

MATHEMATICS IN FIRST GRADE

NUMBER SENSE

First-grade students expand their concept of numbers beyond 100. They begin to develop an understanding of the base-ten number system and the importance of "place value." They can compare quantities. These **Steps to Success** include:

Kindergarten	First Grade	Second Grade
• Count by ones and tens to 100 • Read and write numbers 0 to 20 • Understand that when counting objects, the last number said tells the number of objects in a group. The number of objects is the same regardless of their arrangement or the order in which they are counted. • Compare two written numbers up to ten using *more than, less than*, and *equal to* • Know that 11 is 1 ten and 1 one, 12 is 1 ten and 2 ones, up to 19	• Count by ones and tens to 120 and by fives to 100. Start with any number. • Understand that a bundle of ten ones is 10 • Understand "place value" up to 99,(for example, 83 is made up of 8 tens and 3 ones) • Understand that two-digit numbers can be broken up in several ways (34 equals 3 tens and 4 ones or 2 tens and 14 ones, etc.) • Compare two-digit numbers up to 99 using *more than, less than*, and *equal to*. Explain why. • Add and subtract by tens up to 100 based on place value. Explain the reason for the answer given.	• Count by tens and hundreds to 1,000. Start with any number. • Understand "place value" up to 999 (hundreds, tens, ones) • Recognize that 100 is a bundle of tens • Understand that three-digit numbers can be broken up in several ways (4 hundreds, 12 tens, and 4 ones, etc.) • Add and subtract fluently through 99 • Add up to four two-digit numbers. Explain the reason for the answer given.

MATHEMATICS IN FIRST GRADE

THINKING AND OPERATIONS

First-grade students begin to work on real world problems with addition and subtraction. They can add up to three numbers that equal to no more than 20. These **Steps to Success** include:

Kindergarten	First Grade	Second Grade
• Determine the missing number in a math problem that has a sum of 10. (3+____ =10, ____+8=10) • Add and subtract fluently up to 5 (e.g., 6-1=5, 4+1=5; 7-2=5, 3+2=5) • Solve real-world problems by adding and subtracting up to 10, using objects and drawings • Describe simple repeating patterns like shapes, colors, and activities found in a shirt, drawing, or game	• Solve real-world problems with addition and subtraction up to 20 • Solve real-world problems that include up to three numbers with a sum of no more than 20 • Understand that changing the order or the grouping of numbers to be added does not change the sum. Use up to three numbers. • Add and subtract fluently up to 20 • Determine the missing number in equations within 20 • Balance both sides of an addition or subtraction problem up to 10 (e.g., 6=6 [true], 5=6 [false], 1+5=6 [true], 1+5=5 [false], etc.) • Extend and explain repeating and growing patterns	• Solve one- and two-step word problems with addition and subtraction up to 100 • Determine odd and even numbers, for numbers through 20, by finding two equal numbers to represent the number (3+3=6, 5+5=10) • Use addition to find the number of squares highlighted in a rectangle with up to 5 rows and 5 columns

MATHEMATICS IN FIRST GRADE

GEOMETRY

First-grade students learn to identify additional shapes, work with dividing shapes and making new objects. These **Steps to Success** include:

Kindergarten	First Grade	Second Grade
• Identify shapes from everyday life like triangles, circles, squares, rectangles, hexagons, spheres, cones, cubes, and cylinders • Classify shapes as 2-dimensional (flat) or 3-dimensional (solid) • Draw 2-dimensional shapes and make models of 3-dimensional shapes • Analyze shapes of different sizes and positions. Compare the differences.	• Identify additional shapes like hexagons (stop signs), trapezoids (kites), etc. • Know that the number of sides define a shape and that color does not define a shape. This is called defining and non-defining attributes. • Combine 2-dimensional shapes or 3-dimensional shapes to make new shapes • Divide 2-dimensional shapes into 2 or 4 equal parts	• Identify triangles, quadrilaterals, hexagons, and cubes. Draw shapes with a specific number of sides. • Divide a rectangle into equal-sized rows and columns. Count to find the total number of the parts. • After dividing shapes into equal parts, understand a *half, a fourth, a half of*, and *a fourth of* • Recognize that parts of an object become smaller as the number of parts increases

MEASUREMENT AND DATA ANALYSIS

First-grade students learn to use units of measure and to represent data on simple graphs and charts. They learn to read clocks and identify coins. These **Steps to Success** include:

Kindergarten	First Grade	Second Grade
• Identify what aspects of an object can be measured like the length and weight of an object • Use comparison words to describe objects like *lighter/heavier* or *shorter/longer* • Sort and classify items into 2 or 3 categories like *rough* or *smooth* • Use objects and picture graphs to draw conclusions. Use tally marks from 1 to 10 then from 1 to 20.	• Put objects in order by length by comparing them to another, selected object. This is an indirect comparison. • Use units of length to show the total length of an object • Sort and classify items into 3 categories and represent the "data" using graphs and charts • Draw conclusions from graphs and charts • Tell time to the hour and half hour on digital and face clocks • Identify coins by value and use the ¢ symbol	• Use suitable tools to measure the length of an object • Measure an object using various lengths (foot/yard). Explain why the measurements differ. • Estimate and measure in everyday units (inch, foot, yard, centimeter, meter). Determine how much longer one object is from another. • Sort and classify items into 4 categories and represent the "data" using picture and bar graphs • Produce data by measuring objects and organize the data on a horizontal line plot • Tell time to the nearest five minutes and use *a.m.* and *p.m.* • Solve real-world problems using dollar bills with the *$* symbol and using coins with the ¢ symbol

LEARNING AT HOME

Learning doesn't end at the school door. Your child needs support and help from you to succeed in the first grade. Work with your child at home. Be informed about what he is working on and know whether he needs help with specific skills. Remember, your attitude matters to her. Here are some suggestions for things to do at home to help your child learn:

- Take every opportunity to count. Count the steps into your house, the blocks to the store, the number of people in line, or the red cars on the road. Then count from the number backwards. Count up to the number by tens and fives.
- Have your child add doubles, such as 4+4 and 5+5, from one to 10. Help him remember the sum by drawing a picture of the answer (1+1=2, he might draw two eyes). This activity helps your child more quickly add doubles and will carry over into adding adjacent numbers (2+3) and larger numbers (33+33).
- Let your first grader measure family members' clothing against her own. How many of his socks make them equal to big brother's? Compare sleeve or pant leg lengths from other family members' against hers.
- Take a page from the newspaper and have your child circle all the numbers he can find.
- Make a clock face on a paper plate and use a plastic knife for the minute hand and a spoon for the hour hand. Take turns "setting" the clock and telling the time within an hour and half hour.
- Get "connect-the-dots" puzzles and work with your child to connect the numbered dots to make the picture. Print individual puzzles from the Internet or buy books of puzzles.

ADDITIONAL INFORMATION

- *Scholastic* provides "parent refreshers" of the skills your child is expected to learn in each grade in school: http://www.scholastic.com/parents/resources/collection/subject-refreshers/parent-primers.
- Download *A Family's Guide: Fostering Your Child's Success in School Mathematics*, a publication from the National Council of Teachers of Mathematics, at http://illuminations.nctm.org/uploadedFiles/Activities_Home/FamilyGuide_FullText.pdf.
- This site has games for counting, measuring, coins, and more: http://www.mathsisfun.com/games/games-elementary.html.
- Get more fun games to help with first-grade math concepts at http://www.funbrain.com/.
- *Public Broadcasting* has on-line games, puzzles, and activities to use at home to teach math: http://www.pbs.org/parents/education/math/games/first-second-grade/.
- *The Kahn Academy* has tutorials on every aspect of first grade math at https://www.khanacademy.org/math/early-math.
- Check the children's section of your local library for picture books that use sorting and counting as a part of the story. There are also books that focus on math games.

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