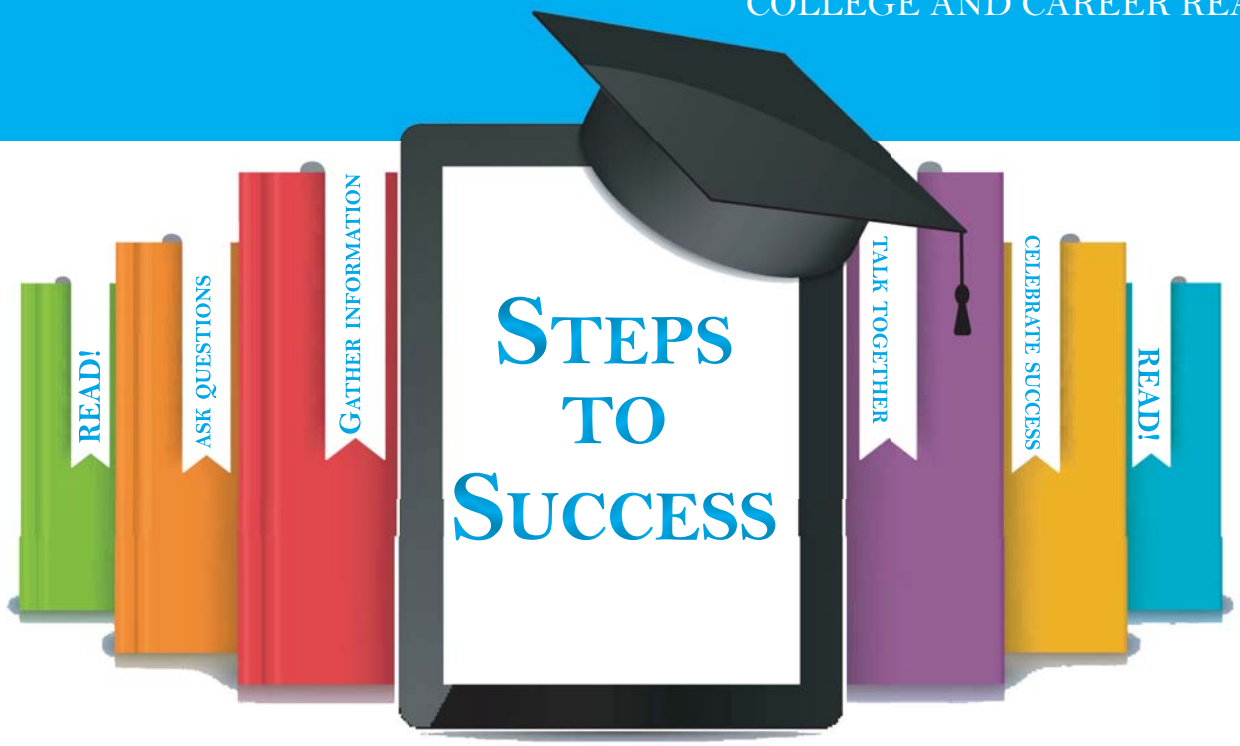
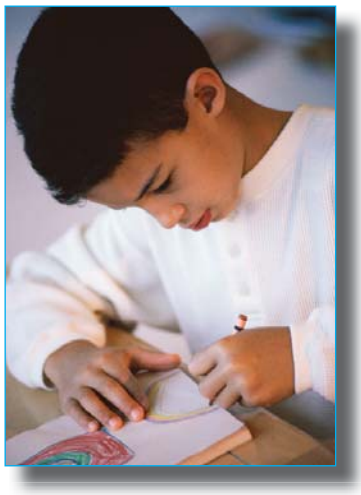
SOUTH CAROLINA STANDARDS
COLLEGE AND CAREER READY



Family-Friendly Guide for Third Grade Mathematics

Third-grade students begin to feel confident in their skills and have an increased problem-solving ability. The *South Carolina College- and Career-Ready Standards* uses these attributes to interest your child in the more advanced topics of multiplication and division. Third graders begin work with fractions and start to estimate, interpret graphs, and predict outcomes. They learn the basic concepts of Geometry.



Don't be surprised when your child must explain the steps, one at a time, needed to solve a math problem. There are several reasons why this is now common practice. The activity requires students to organize their work. It provides a "trail" for checking answers; shows exactly what was done; and allows for intervention exactly at the point where necessary. By showing their work, students are more accurate and avoid habits that could hinder their math progress.

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 third 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 THIRD GRADE

NUMBER SENSE AND FRACTIONS

Third-grade students now use numbers up to 100,000. They learn to multiply and divide one-digit numbers. They develop an understanding of fractions as numbers. These **Steps to Success** include:

Second Grade	Third Grade	Fourth Grade
• 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.	• Read and write numbers up to 100,000. Start with any number. • Multiply one-digit numbers by multiples of 10 • Compare whole numbers using the symbols > (greater than), = (equal to), or < (less than) • Develop an understanding of what a fraction is • Compare the size of two fractions • Understand that whole numbers can be written as fractions (4=4/1 and 1=4/4)	• Read and write numbers up to 1,000,000 • Use rounding in order to estimate • Compare fractions and use the symbols > (greater than), = (equal to), < (less than) • Add and subtract fractions with the same denominator (bottom number) • Solve real-world problems involving multiplication of a whole number by a fraction • Write a fraction with a denominator of 10 or 100 as a decimal (45/100=.45))

MATHEMATICS IN THIRD GRADE

THINKING AND OPERATIONS

Third-grade students manage simple multiplication and division problems and apply the skills to solve problems. They work to master the multiplication tables, learning that memorization gives speed, efficiency, and frees up brain space for other math thinking. Students also calculate and estimate in their heads. These **Steps to Success** include:

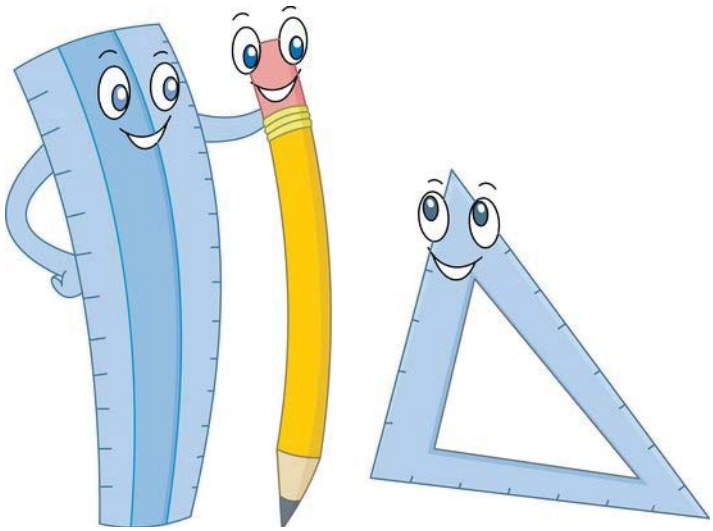
Second Grade	Third Grade	Fourth Grade
• Solve one- and two-step word problems with addition and subtraction up to 100 • Determine odd and even numbers, for numbers through 20, by finding two equal numbers to represent the number (3+3=6, 5+5=10) • Use addition to find the number of squares highlighted in a rectangle with up to 5 rows and 5 columns	• Use objects, drawings, and numbers to represent multiplication of two single-digit numbers • Use objects, drawings, and numbers to represent division of whole numbers • Determine the unknown number in a multiplication or division equation • Demonstrate fluency with basic multiplication and division through 100 • Solve two-step, real-world problems using addition, subtraction, multiplication, and/or division • Identify the pattern in a sequence of numbers (with 2, 4, 6, 8, the pattern adds 2 to the previous number)	• Translate multiplication equations into verbal statements (e.g. interpret 35=5x7 as 35 is 5 times as many as 7 and 7 times as many as 5) • Solve multi-step, real-world problems using the four operations • Break a number down into its factors (1, 2, and 3 are factors of 6 because 1x6=6, 2x3=6) • Determine whether a number is a prime number (numbers divisible only by itself or 1) or a composite number (numbers divisible by more numbers than itself or 1) • Examine a pattern/sequence of shapes or numbers and determine what should appear next

MATHEMATICS IN THIRD GRADE

GEOMETRY

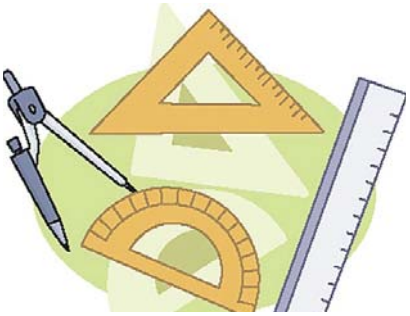
Third-grade students are introduced to the basic concepts of geometry. They learn about area, angles, and the categories of shapes. These **Steps to Success** include:

Second Grade	Third Grade	Fourth Grade
• 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	• Understand that shapes can share features and those features can be part of a larger category. Squares and rectangles are both four sided and they are part of the category "quadrilateral.") • Partition (separate) two-dimensional shapes into 2, 3, 4, 6, 8 equal parts and understand that the equal parts do not have to have the same shape. Half of a circle and half of a rectangle are equal in size because they are halves even though the shape is different. • Identify and draw angles: right (90 degrees), acute (less than 90 degrees), and obtuse (greater than 90 degrees) • Identify a three-dimensional object like a pyramid from a two-dimensional object (flat pattern)	• Identify points, line segments, rays, angles, and parallel lines in 2-dimensional shapes • Classify quadrilaterals based on whether they have parallel or perpendicular lines • Recognize symmetry in a 2-dimensional figure, identify symmetrical figures, and draw lines of symmetry



MEASUREMENT AND DATA ANALYSIS

Third-grade students add to their knowledge of measures and shapes. Students solve math problems involving objects' area, perimeter, and volume. They make and read bar and line graphs. These **Steps to Success** include:

Second Grade	Third Grade	Fourth Grade
• 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	• Tell and record time to the nearest minute and solve time problems within the hour using addition and subtraction • Estimate and measure liquid volume (for example, pint, gallon, milliliter, liter) • Create and read scaled bar graphs and line graphs to represent collected data • Understand the difference between area and perimeter and how to measurement each • Solve real-world problems involving the perimeter and area of shapes with straight sides	• Convert measurement from a larger unit to a smaller unit (for example, feet into inches or meters into centimeters) • Solve real-world problems using up to four operations involving length, time, mass, and money • Create a line plot to present data and explain what it shows • Use a protractor to draw and measure angles • Find unknown angles using addition and subtraction 

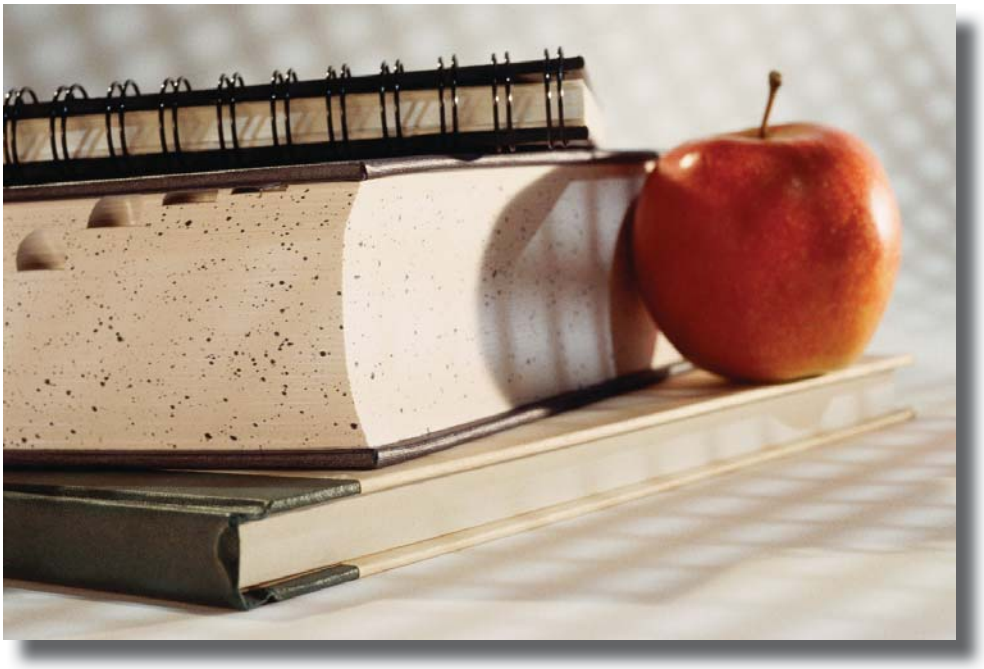
LEARNING AT HOME

Work with your child at home to help him succeed in third-grade math. Be informed about what she is working on and know whether she needs help with specific skills. Stay positive as your child works to establish his foundation for future math concepts. Your attitude makes all the difference to her. Here are some suggestions for things to do at home to help your child learn:

- Use coins and have your child show you how many ways she can make 5 cents, 10 cents, 25 cents, and 50 cents.
- Cut out grocery store coupons and have him determine how much money is saved. Ask your child what could be purchased using the savings from the coupon. A pack of gum? A pencil? How much money could be saved if she had 3, 4, or 5 of the coupons? What could he purchase with those savings?
- Help your child understand the concept of division by separating a collection of objects. First, separate the objects into an equal number of groups. For example, if 12 toys were separated so that there were 4 toys in each group, how many groups of 4 would you have? (Answer: 3) Second, separate the objects so that there is an equal number in each pile. If 12 toys were separated into 3 equal piles/groups, how many toys would be in each group? (Answer: 4)
- Use flash cards to work with your child to memorize the multiplication tables.

ADDITIONAL INFORMATION

- For math games and activities, see www.gameclassroom.com.
- *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.
- This site offers free interactive games to help sharpen your child's math skills: http://www.abcya.com/third_grade_computers.htm.
- *Funbrain*, http://www.funbrain.com/brain/MathBrain/MathBrain.html, has fun games to help with math skills. It requires you to have a password; however, to receive one, you only need to record a gender and a grade level.
- *The Khan Academy* offers tutorials on all aspects of third-grade math at https://www.khanacademy.org/math/cc-third-grade-math.



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