

3rd Grade Mathematics

Key Instructional Activities

The Third Grade Georgia Standards of Excellence for mathematics focus on four critical areas: (1) developing understanding of multiplication and division and strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with a numerator of 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing two-dimensional shapes. Activities in these areas will include:

- Understanding and explaining what it means to multiply or divide numbers
- Multiplying all one-digit numbers from memory (knowing their multiplication facts)
- Multiplying one-digit numbers by multiples of 10 (such as 20, 30, 40)
- Solving two-step word problems using addition, subtraction, multiplication, and division
- Understanding the concept of area
- Relating the measurement of area to multiplication and division
- Understanding fractions as numbers
- Understanding and identifying a fraction as a number on a number line
- Comparing the size of two fractions with the same numerator or denominator
- Expressing whole numbers as fractions and identifying fractions that are equal to whole numbers (for example, recognizing that $\frac{3}{1}$ and 3 are the same number)
- Measuring weights and volumes and solving word problems involving these measurements
- Representing and interpreting data



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What resources are
available for students
and parents?

<https://hcbemath.weebly.com/>



Elementary Math Wakelet
Additional Online Resources



Helping Your Student in Third Grade Mathematics

Learning does not end in the classroom. Students need help and support at home to succeed in their studies. Try to create a quiet place for your student to study, and carve out time every day when your student can concentrate uninterrupted by friends, brothers or sisters, or other distractions. Sit down with your student at least once a week for 15 to 30 minutes while he or she works on homework. This will keep you informed about what your student is working on, and it will help you be the first to know if your student needs help with specific topics. By taking these small steps, you will be helping your student become successful both in and outside the classroom.

Partnering with your child's teacher

- Get to know your child's math teacher! Your child will thank you (someday) for being involved in his or her learning. Also – know about the online resources that are available!
- Don't be afraid to reach out to your child's teacher—you are an important part of your child's education. Ask to see a sample of your child's work or bring a sample with you.
- Talk with your child's teacher about difficulties he/she may be experiencing. When teachers and parents work together, children benefit.
- Ask the teacher questions like:
 - Where is my child excelling? How can I support this success?
 - What do you think is giving my child the most trouble? How can I help my child improve in this area?
 - What can I do to help my child with upcoming work?



Helping your child learn outside of school

- Talk about math in a positive way. A positive attitude about math is infectious. Encourage your child to stick with it whenever a problem seems difficult. This will help your child see that everyone can learn math.
- Encourage persistence. Some problems take time to solve. Praise your child when he or she makes an effort, and share in the excitement when he or she solves a problem or understands something for the first time.
- Encourage your child to experiment with different approaches to mathematics. There is often more than one way to solve a math problem.
- Encourage your child to talk about and show a math problem in a way that makes sense.
- When your child is solving math problems ask questions such as: Why did you...? What can you do next? Do you see any patterns? Does the answer make sense? How do you know? This helps to encourage thinking about mathematics.
- Connect math to everyday life and help your child understand how math influences them (i.e. shapes of traffic signs, walking distance to school, telling time).
- Play family math games together that add excitement such as checkers, junior monopoly, math bingo and uno.
- Computers + math = fun! There are great computer math games available on the internet that you can discover with your child.

Third Grade Mathematics System Pacing Overview



This guide provides an overview of what your student will learn in his or her Third Grade Mathematics course. It focuses on the key skills your student will learn, which will build a strong foundation for success. This guide is based on the state-adopted Georgia Standards of Excellence.

August - September

Unit 1: Numbers and Operations in Base Ten

During Unit 1, students will add and subtract numbers within 1000 using place value strategies, properties of operations, and the relationship between addition and subtraction. Students will also solve two-step word problems using addition and subtraction.

- Use a number line as a tool to round whole numbers up to 1000 to the nearest 10 or 100.
- Tell and write time to the nearest minute and measure elapsed time intervals in minutes.
- Draw a scaled picture graph and a scaled bar graph to represent a data set.

September - October

Unit 2: Conceptual Understanding of Multiplication

During Unit 2, students will develop an understanding of multiplication by participating in many hands-on activities. Students will learn to interpret the language of multiplication, act out multiplication situations and record their multiplication experiences.

Examples of the language of multiplication:

- Rows of
- Groups of
- Stacks of
- Piles of

Students will also develop an understanding of division by participating in many hands-on activities. Students will learn to interpret the language of division, act out division situations and record their division experiences. Students will be able to determine when the answer refers to the *number of groups*, versus the *number in each group*. Students will begin to see the relationship between multiplication and division.

Examples of the language of division: (dividing quantities into)

- Rows
- Groups
- Stacks
- Piles

October - November

Unit 3: Strategies and Properties for Multiplication and Division

During Unit 3, students will continue to develop a conceptual understanding of decomposing multiplication problems through the use of the distributive property. Students are not required to use the properties explicitly but, are encouraged to discuss this concept and use area diagrams to support their reasoning.

- Determine the unknown whole number in a multiplication or division equation.
- Apply the properties of operations as strategies to multiply and divide.
- Understand division as an unknown-factor problem for multiplication.
- Fluently multiply and divide within 100.
- Identify arithmetic patterns and explain the patterns using properties of operations.
- Multiply one-digit whole numbers by multiples of 10-90 using multiplication strategies.
- Tell and write time to the nearest minute and measure elapsed time intervals in minutes.
- Solve word problems involving addition and subtraction of time intervals in minutes, e.g. by representing the problem on a number line diagram, drawing a pictorial representation on a clock face, etc.

November - December

Unit 4: Understanding Concepts of Area and Relate to Multiplication to Addition

During Unit 4, students will explore the connections among counting tiles, skip counting the number of tiles in rows or columns, and multiplying the side lengths of a rectangle to determine area. Students will also solve word problems involving the four operations and assess the reasonableness of answers.

- Recognize area as an attribute of plane figures and understand concepts of area measurement.
- Measure areas by counting squares.
- Relate area to the operations of multiplication and addition.

- Fluently multiply and divide within 100.
- Solve two-step word problems using addition, subtraction, multiplication, & division.
- Practice telling time to the nearest minute and finding elapsed time.

January

Unit 5: Geometry

During Unit 5, students will build on their experiences with shapes from second grade.

- Understand that shapes in different categories may share attributes, and the shared attributes can define a larger category.
- Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these categories.

January - March

Unit 6: Representing and Comparing Fractions

During Unit 6, students will begin formal work with fractions. In previous grades, students have had experience partitioning shapes into fair shares and using words to describe the quantity. In this unit, students extend this understanding to partition shapes and represent these fair shares using fraction notation. Students will also develop a conceptual understanding of equivalence. Multiple types of models and representations will be used to help students develop this understanding. Students will also extend their work with measurement and data involving whole numbers to include fractional quantities. Measurement and data are used as a context to support students' understanding of fractions as numbers.

- Partition shapes into parts with equal areas.
- Understand that fractional parts must be equal-sized.
- Understand that when a whole is partitioned into equal parts, the denominator represents the number of equal parts.
- Understand that the numerator of a fraction is the count of the number of equal parts being counted.
- Understand that as the number of equal pieces in the whole increases, the size of the fractional pieces decreases.
- Understand a fraction as a number on a number line.
- Explain the equivalence of fractions through reasoning and visual fraction models.
- Express whole numbers as fractions.
- Compare two fractions with the same numerator or the same denominator.
- Measure lengths using rulers marked with halves and fourths of an inch.
- Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.

March

Unit 7: Measurement

During Unit 7, students will develop a conceptual understanding of measuring mass, liquid volume, and using measurement as a context for the development of fluency in addition and subtraction. Students will draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Students will also solve one-step and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.

- Measure and estimate liquid volumes and masses of objects using standard units of grams, kilograms, and liters.
- Draw a scaled picture graph and a scaled bar graph to represent data.
- Solve real world math problems involving perimeters of polygons, including finding an unknown side length.

April - May

Unit 8: Skills to Maintain and Review

During Unit 8, students are reviewing, mastering and/or extending their understanding of 3rd grade standards.