Fourth Grade
Mathematics

Key Instructional Activities

In fourth grade, students focus on three critical areas: (1) developing understanding and fluency with multi-digit multiplication, and developing understanding of dividing to find quotients involving multi-digit dividends; (2) developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers; (3) understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry. Activities in these areas will include:

- Adding and subtracting whole numbers up to 1 million quickly and accurately
- Solving multi-step word problems, including problems involving measurement and converting measurements from larger to smaller units
- Multiplying and dividing multi-digit numbers
- Extending understanding of fractions by comparing the size of two fractions with different numerators (top numbers) and different denominators (bottom numbers)
- Creating equivalent fractions
- Adding and subtracting fractions with the same denominator
- Composing and decomposing fractions
- Connecting addition and subtraction of whole numbers to multiplying fractions by whole numbers
- Connecting addition of fractions to the concept of angle measurement
- Representing and interpreting data
- Converting fractions with denominators of 10 or 100 into decimals
- Locating decimals on a number line
- Comparing decimals and fractions using the symbols > (greater than), = (equal to), and < (less than)

Elementary Math Wakelet
Additional Online Resources

HOUSTON COUNTY
BOARD OF EDUCATION
HIGH-ACHIEVING STUDENTS

What resources are available for students and parents?

https://hcbemath.weebly.com/

Helping Your Student in Fourth 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 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.
- Use everyday objects to allow your child to explore the concept of fractions. For example, use measuring cups so students see how many times you have to refill a 1⁄4 cup to equal a 1⁄2 cup or how many 1⁄3's are in two cups. Have students describe two fractions that are equal using a measuring cup (filling a 1⁄4 measuring cup twice is the same as filling one 1⁄2 measuring cup).
- 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 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).
- Computers + math = fun! There are great computer math games available on the internet that you can discover with your child

Fourth Grade Mathematics System Pacing Overview

This guide provides an overview of what your student will learn in his or her Fourth 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: Place Value and Multi-digit Addition and Subtraction

During Unit 1, students will develop and practice addition and subtraction of multi-digit whole numbers using the standard algorithm while developing place value concepts.

- Recognize that a digit in any one place represents ten times what it represents in the place to its right.
- Compare multi-digit numbers using symbols: >, <, or =.
- Use place value understanding to round multi-digit whole numbers to any place and estimate when solving problems.
- Add and subtract numbers using the standard algorithm.
- Find the perimeter of a rectangle.

September - November

Unit 2: Multiplication and Division, Multiples and Factors, Prime and Composite

During Unit 2, students will continue using computational and problem-solving strategies with a focus on building conceptual understanding of multiplication and division of large numbers. Students will also begin using models to explore multiplicative comparisons. Students will use manipulatives to determine whether a number is prime or composite and gain understanding of the concept and structure of multiples and factors.

- Find the area and perimeter of rectangles.
- Find area of rectilinear figures by decomposing into non-overlapping rectangles and adding the areas of the non-overlapping parts.
- Understand factors and multiples of a number.
- Determine if a number is prime or composite.
- Find the multiples and factors of a number.
- Multiply and divide using place value strategies.
- Solve multistep word problems using all four operations.

November

Unit 3: Multiplicative Comparison and Measurement Conversions

During Unit 3, students will build a conceptual understanding of the relative sizes of units of measure within a single system of measurement. Measurement conversions are used to introduce multiplication as a comparison.

- Use multiplication as a comparison.
- Convert larger units of measurement to smaller units of measurement.

December - February

Unit 4: Fractions

During Unit 4, students will develop an understanding of fraction equivalence and various methods for comparing fractions. Students should understand that when comparing fractions, it is not always necessary to generate equivalent fractions. Other methods, such as comparing fractions to a benchmark fraction, can be used to discuss relative sizes. Students will also use their understanding of partitioning to find unit fractions to compose and decompose a fraction in order to add and subtract fractions with like denominators.

- Find equivalent fractions.
- Compare fractions with different numerators and denominators, realizing that a comparison is only valid when the two fractions refer to the same whole.
- Decompose fractions to the sum of unit fractions.
- Add and subtract fractions with like denominators.
- Construct a line plot using fractions to display data.

February

Unit 5: Multiplying Whole Numbers by Fractions

During Unit 5, students will apply their understanding of composing and decomposing fractions to develop a conceptual understanding of multiplication of a fraction by a whole number. Students will also use and extend their previous understandings of operations with whole numbers and relate that understanding to fractions.

- Model multiplication of a whole number by a fraction.
- Understand that the multiplication of fractions is similar to multiplication of whole numbers.
- Represent fractions in a variety of ways.

February - March

Unit 6: Fractions and Decimals

During Unit 6, students will use their understanding of equivalent fractions to begin to use decimal notation. The focus is on solving word problems involving simple fractions or decimals. Work with money will support this work with decimal fractions.

- Use decimal notation for fractions with denominators of 10 and 100.
- Locate decimals on a number line.
- Compare decimals by reasoning about their size using symbols: >, <, or =.
- Express a fraction with a denominator of 10 as an equivalent fraction with a denominator of 100, and use this to add two fractions with respective denominators of 10 and 100.

March - April

Unit 7: Attributes of 2-Dimensional Figures and Geometric Measurement

During Unit 6, students will develop their spatial reasoning skills by using a wide variety of attributes to talk about two-dimensional shapes. Students analyze geometric figures based on angle measurements, parallel and perpendicular lines, and symmetry. Students will also use their understanding of equal partitioning to measure angles.

- Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
- Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint and understand the concept of angle measurement.
- Measure angles in whole-number degrees using a protractor. Understand that angles are measured with reference to a circle.
- Recognize angle measure as additive. Understand that when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.
- Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or by their angles.
- Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify symmetric figures and draw lines of symmetry.

April - May

Unit 8: Skills to Maintain and Review

During Unit 8, students are reviewing, mastering and/or extending their understanding of 4th grade standards.