



YOUR Elementary School

5th Grade Mathematics Curriculum Overview

Introduction

In Grade 5, the focus of mathematics content will be on three critical areas:

1. Add, subtract, multiply, and divide fractions

Students will fluently add and subtract fractions.

Students will understand multiplication of fractions and division of fractions in limited cases.

Students will use a variety of strategies to calculate or estimate multiplication problems mentally.

Students will be able to explain the meanings of all fraction operations and show their calculations in pictures and words as well as numbers.

2. Divide by 2-digit numbers, and perform calculations with decimals to 2 decimal places

Students will understand why division procedures work based upon what they know about place value and how division is related to other operations.

Students will fluently add, subtract, multiply, and divide multi-digit numbers.

Students will add, subtract, multiply, and divide decimals (to two decimal places), showing their calculations in pictures and words as well as numbers.

3. Develop an understanding of volume

Students will recognize volume as a characteristic of 3-dimensional space.

Students will measure volume by finding how many same-sized 3-dimensional objects can fill a space without gaps or overlaps, and will use a 1x1x1 unit cube as a standard unit for measuring volume.

Students will use appropriate tools to measure volume.

Students will break complicated 3-dimensional objects into simpler parts in order to find their volume.

Quarterly Overview

While many of the mathematics topics are related and will be integrated throughout the school year, mathematics lesson topics will generally follow the schedule outlined below:

First Quarter

- Extend place value understanding up to billions and down to three decimal places (thousandths)
- Compare and order decimals and round numbers to various place values
- Extend understanding of multiplication to multiply decimals and to work with algebraic expressions

Second Quarter

- Extend understanding of division to divide by two-digit numbers, including two-digit decimals
- Solve division problems involving money
- Understand and apply the order of operations to calculate multi-step problems fluently

Third Quarter

- Use points, lines, and rays to construct geometric figures (angles, triangles, regular polygons)
- Analyze circles, triangles, and quadrilaterals
- Add and subtract fractions with unlike denominators and multiply and divide fractions (limited)
- Extend understanding of fractions with place value to investigate decimal place values

Fourth Quarter

- Work with rates, ratios and percents
- Explore 2-dimensional figures on a coordinate grid

Eight Mathematical Practices

Mathematics class is about much more than just “getting the right answer.” The goal is not to turn students into human computers. Rather, the goal is to help shape students (eventually) into fully-functioning adults who can think critically, communicate effectively, use resources wisely, and problem-solve creatively. The eight Mathematical Practices are “habits of mind” that help students form a deep understanding of mathematics concepts, but also extend far beyond the walls of the math classroom.

Therefore, in our math class, your student will have many opportunities to:

1. Be a good problem-solver, and not give up when something doesn't work perfectly the first time.
2. Think about problems in lots of different ways.
3. Communicate effectively to show and explain their thinking and learn from the way others think.
4. Understand how the concepts they learn relate to the world around them.
5. Use mathematical tools skillfully and wisely to help in the problem-solving process.
6. Pay attention to important details, but also keep the big picture in mind.
7. Analyze complicated problems and break them down into simpler parts.
8. Identify helpful patterns and find effective shortcuts to be more efficient in problem-solving.

Students who enjoy and are successful in mathematics are those who embrace being creative problem-solvers and who approach mathematics with a sense of curiosity and adventure.

How to Support Student Learning at Home

You can help your student by reinforcing mathematical concepts at home. Sometimes that might mean going through flash cards for a few minutes a day, but the best mathematical support happens by highlighting the math that is already around you.

<p>Play card games, Monopoly, and Scrabble. Have your student be the scorekeeper or banker.</p>	<p>Children should drink 5-8 cups of water per day. Track how much water you drink for a week (in terms of cups, pints, and quarts).</p>	<p>Count together by 2's, 3's, 4's, 5's, 6's, 7's, 8's or 9's. Take turns saying the next number.</p>
<p>Estimate how many M&Ms (or similar) will fit into a cup. Then fill it up and count to find out.</p>	<p>Estimate how long something is. Then measure to find out.</p>	<p>Estimate how long something will take. Then test it out to see.</p>
<p>Give your student an allowance or pay them for chores. Talk about pay rates, saving money, and spending money.</p>	<p>Talk about meanings of percentages when you see "% off" sales or check the weather or track progress in computer games, ebooks, etc.</p>	<p>Talk about what decimals mean in the context of money. What's the difference between 1 cent and 0.01 cent?</p>
<p>Highlight fractions everywhere. "What fraction of the people here are wearing hats?"</p>	<p>Make recipes together and measure ingredients creatively. "We need 1 ½ cups of flour, but only have a ¼ cup measuring cup. What can we do?"</p>	<p>Make recipes. Double or halve the recipe. Have your student be in charge of reading the recipe and giving directions.</p>
<p>Craft or scrapbook together. Measure lengths in fractions of inches.</p>	<p>Build a project that requires measuring and cutting boards or other material.</p>	<p>Plant a garden. Discuss number of plants, spacing of plants, height and width of plants. Track rainfall with a rain gauge.</p>

Be relaxed and positive in these interactions, and your student will learn to relax and think positively about mathematics. Don't put too much emphasis on speed or correct answers. Instead, ask questions about how they thought about the topic and share your thoughts. Try to think about things in different ways. (And don't be surprised if you start to enjoy doing math with them too!)