

FIFTH GRADE MATH, Campbellsport School District

In Grade 5, instruction focuses on three critical areas: (1) developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions); (2) extending division to 2-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations; and (3) developing understanding of volume.

1. Students apply their understanding of fractions and fraction models to represent the addition and subtraction of fractions with unlike denominators as equivalent calculations with like denominators. They develop fluency in calculating sums and differences of fractions, and make reasonable estimates of them. Students also use the meaning of fractions, of multiplication and division, and the relationship between multiplication and division to understand and explain why the procedures for multiplying and dividing fractions make sense. (Note: this is limited to the case of dividing unit fractions by whole numbers and whole numbers by unit fractions.)

2. Students develop understanding of why division procedures work based on the meaning of base-ten numerals and properties of operations. They finalize fluency with multi-digit addition, subtraction, multiplication, and division. They apply their understandings of models for decimals, decimal notation, and properties of operations to add and subtract decimals to hundredths. They develop fluency in these computations, and make reasonable estimates of their results. Students use the relationship between decimals and fractions, as well as the relationship between finite decimals and whole numbers (i.e., a finite decimal multiplied by an appropriate power of 10 is a whole number), to understand and explain why the procedures for multiplying and dividing finite decimals make sense. They compute products and quotients of decimals to hundredths efficiently and accurately.

3. Students recognize volume as an attribute of three-dimensional space. They understand that volume can be measured by finding the total number of same-size units of volume required to fill the space without gaps or overlaps. They understand that a 1-unit by 1-unit by 1-unit cube is the standard unit for measuring volume. They select appropriate units, strategies, and tools for solving problems that involve estimating and measuring volume. They decompose three-dimensional shapes and find volumes of right rectangular prisms by viewing them as decomposed into layers of arrays of cubes. They measure necessary attributes of shapes in order to determine volumes to solve real world and mathematical problems.

Grade 3 Overview

1. Operations and Algebraic Thinking

- ✓ Represent and solve problems involving multiplication and division.
- ✓ Understand properties of multiplication and the relationship between multiplication and division.
- ✓ Multiply and divide within 100.
- ✓ Solve problems involving the four operations, and identify and explain patterns in arithmetic.

2. Number and Operations in Base Ten

- ✓ Use place value understanding and properties of operations to perform multi-digit arithmetic.

3. Number and Operations—Fractions

- ✓ Develop understanding of fractions as numbers.

4. Measurement and Data

- ✓ Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- ✓ Represent and interpret data.
- ✓ Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- ✓ Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

5. Geometry

- ✓ Reason with shapes and their attributes.

Mathematical Practices (These are behaviors and habits that students are taught.)

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

