

Math

Grade 4 Essential Standards

• Operations and Algebraic Thinking

Use the Four Operations with Whole Numbers to Solve Problems

4.OA.A.3 – Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.

• Number and Operations in Base Ten

Generalize Place Value Understanding for Multi-digit Whole Numbers

4.NBT.A.2 – Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.

Use Place Value Understanding and Properties of Operations to Perform Multi-digit Arithmetic

4.NBT.B.4 – Fluently add and subtract multi-digit whole numbers using the standard algorithm.

4.NBT.B.5-- Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculations by using equations, rectangular arrays, and/or area models.

• Number and Operations – Fractions

Extend Understanding of Fraction Equivalence and Ordering

4.NF.A.1 – Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

4.NF.A.2 – Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $1/2$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

Build Fractions from Unit Fractions by Applying and Extending Previous Understandings of Operations on Whole Numbers

4.NF.B.3.A--Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.

4.NF.B.4.A--Understand a fraction a/b as a multiple of $1/b$. *For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equations $5/4 = 5 \times (1/4)$.*

Understand Decimal Notation for Fractions, and Compare Decimal Fractions

4.NF.C.6 – Use decimal notation for fractions with denominators 10 or 100. *For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 on a number line diagram.*

● Measurement and Data

Solve problems involving measurement and conversion of measurements

4.MD.A.3 - Apply the area and perimeter formulas for rectangles in real world and mathematical problems. *For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.*