

# OP A Count unit fractions as a form of adding and subtracting fractions

Grade	Curriculum Expectations
1	<ul style="list-style-type: none"> <li>divide whole objects into parts and identify and describe, through investigation, equal-sized parts of the whole, using fractional names (e.g., halves; fourths or quarters).</li> </ul>
2	<ul style="list-style-type: none"> <li>determine, through investigation using concrete materials, the relationship between the number of fractional parts of a whole and the size of the fractional parts (e.g., a paper plate divided into fourths has larger parts than a paper plate divided into eighths) (Sample problem: Use paper squares to show which is bigger, one half of a square or one fourth of a square.).</li> </ul>
2	<ul style="list-style-type: none"> <li>regroup fractional parts into wholes, using concrete materials (e.g., combine nine fourths to form two wholes and one fourth);</li> </ul>
3	<ul style="list-style-type: none"> <li>divide whole objects and sets of objects into equal parts, and identify the parts using fractional names (e.g., one half; three thirds; two fourths or two quarters), without using numbers in standard fractional notation.</li> </ul>
4	<ul style="list-style-type: none"> <li>represent fractions using concrete materials, words, and standard fractional notation, and explain the meaning of the denominator as the number of the fractional parts of a whole or a set, and the numerator as the number of fractional parts being considered;</li> </ul>
4	<ul style="list-style-type: none"> <li>count forward by halves, thirds, fourths, and tenths to beyond one whole, using concrete materials and number lines (e.g., use fraction circles to count fourths: "One fourth, two fourths, three fourths, four fourths, five fourths, six fourths, ...");</li> </ul>
5	<ul style="list-style-type: none"> <li>represent, compare, and order fractional amounts with like denominators, including proper and improper fractions and mixed numbers, using a variety of tools (e.g., fraction circles, Cuisenaire rods, number lines) and using standard fractional notation;</li> </ul>
5	<ul style="list-style-type: none"> <li>demonstrate and explain the concept of equivalent fractions, using concrete materials (e.g., use fraction strips to show that <math>\frac{3}{4}</math> is equal to <math>\frac{9}{12}</math>);</li> </ul>
6	<ul style="list-style-type: none"> <li>represent, compare, and order fractional amounts with unlike denominators, including proper and improper fractions and mixed numbers, using a variety of tools and using standard fractional notation;</li> </ul>
7	<ul style="list-style-type: none"> <li>use a variety of mental strategies to solve problems involving the addition and subtraction of fractions and decimals;</li> </ul>
7	<ul style="list-style-type: none"> <li>add and subtract fractions with simple like and unlike denominators, using a variety of tools and algorithms;</li> </ul>
8	<ul style="list-style-type: none"> <li>represent, compare, and order rational numbers;</li> </ul>
8	<ul style="list-style-type: none"> <li>use estimation when solving problems involving operations with whole numbers, decimals, percents, integers, and fractions, to help judge the reasonableness of a solution;</li> </ul>
8	<ul style="list-style-type: none"> <li>solve problems involving addition, subtraction, multiplication, and division with simple fractions.</li> </ul>
9D	<ul style="list-style-type: none"> <li>simplify numerical expressions involving integers and rational numbers, with and without the use of technology;</li> </ul>
9D	<ul style="list-style-type: none"> <li>solve problems requiring the manipulation of expressions arising from applications of percent, ratio, rate, and proportion;</li> </ul>
9P	<ul style="list-style-type: none"> <li>solve for the unknown value in a proportion, using a variety of methods (e.g., concrete materials, algebraic reasoning, equivalent ratios, constant of proportionality) (Sample problem: Solve <math>\frac{x}{4} = \frac{15}{20}</math>.);</li> </ul>
9P	<ul style="list-style-type: none"> <li>solve problems requiring the expression of percents, fractions, and decimals in their equivalent forms</li> </ul>

**9P**

- simplify numerical expressions involving integers and rational numbers, with and without the use of technology;\*