

Unit Fraction Builders

Break fractions into equal-size unit fractions.

GRADE 4 • TEKS 4.3.A

4.3.A "represent a fraction a/b as a sum of fractions $1/b$, where a and b are whole numbers and $b > 0$, including when $a > b$;"

NAME _____

DATE _____

BUILD WITH UNIT FRACTIONS

To write a/b as a sum of unit fractions, use $1/b$ a times. Keep the denominator the same because each piece must be the same size.

WORKED EXAMPLE

Write $5/9$ as a sum of unit fractions.

1. The denominator is 9, so each unit fraction is $1/9$.
2. The numerator is 5, so write $1/9$ five times.
3. Add the five equal parts.

Answer: $5/9 = 1/9 + 1/9 + 1/9 + 1/9 + 1/9$

PRACTICE 6 problems

1 Write $3/4$ as a sum of unit fractions.

ANSWER _____

2 Write $6/7$ as a sum of unit fractions.

ANSWER _____

3 Write $8/3$ as a sum of unit fractions.

ANSWER _____

4 Write $2/11$ as a sum of unit fractions.

ANSWER _____

5 Write $10/6$ as a sum of unit fractions.

ANSWER _____

6 Write $12/8$ as a sum of unit fractions.

ANSWER _____

APPLY IT Show your work

- 1** Jada rode $11/6$ miles during a bike challenge. Write $11/6$ as a sum of unit fractions to show the equal sixth-mile parts she rode.

WORK SPACE

ANSWER _____

- 2** A craft club used $13/10$ of a roll of sticker paper. Write $13/10$ as a sum of unit fractions to show the equal tenths of a roll used.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Write $14/12$ as a sum of unit fractions. Then explain why each addend has a denominator of 12, even though 14 is greater than 12.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write $\frac{3}{4}$ as a sum of unit fractions.	$\frac{3}{4} = \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$
2	Write $\frac{6}{7}$ as a sum of unit fractions.	$\frac{6}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$
3	Write $\frac{8}{3}$ as a sum of unit fractions.	$\frac{8}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$
4	Write $\frac{2}{11}$ as a sum of unit fractions.	$\frac{2}{11} = \frac{1}{11} + \frac{1}{11}$
5	Write $\frac{10}{6}$ as a sum of unit fractions.	$\frac{10}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$
6	Write $\frac{12}{8}$ as a sum of unit fractions.	$\frac{12}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

PART 2 • APPLY IT

- $\frac{11}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$ Use $\frac{1}{6}$ because the denominator is 6. Write $\frac{1}{6}$ eleven times because the numerator is 11.
- $\frac{13}{10} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$ Use $\frac{1}{10}$ because the roll is split into tenths. Write $\frac{1}{10}$ thirteen times.

CHALLENGE

$\frac{14}{12} = \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$. Each addend has a denominator of 12 because the whole is divided into twelfths.

Accept unit fractions written in any order if there are exactly as many addends as the numerator and every addend is $\frac{1}{b}$. Do not accept a mixed number or a simplified fraction by itself because students must show a sum of unit fractions.