

Unit Fraction Builders

Build fractions and wholes from equal-sized pieces.

GRADE 4 • 4.NR.4.4

4.NR.4.4 "Represent whole numbers and fractions as the sum of unit fractions."

NAME _____

DATE _____

BUILD WITH UNIT FRACTIONS

A unit fraction has 1 as its numerator. To write a fraction as a sum of unit fractions, use the denominator to name each piece and repeat that piece as many times as the numerator. To write a whole number, choose a denominator and add enough equal unit fractions to make the whole.

WORKED EXAMPLE

Write $\frac{6}{11}$ as a sum of unit fractions.

1. Each unit fraction has denominator 11, so each piece is $\frac{1}{11}$.
2. The numerator 6 means there are six equal pieces.
3. $\frac{6}{11} = \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11}$

Answer: $\frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11} + \frac{1}{11}$

PRACTICE 6 problems

1 Write $\frac{3}{4}$ as a sum of unit fractions.

ANSWER _____

2 Write $\frac{7}{8}$ as a sum of unit fractions.

ANSWER _____

3 Write 1 as a sum of two unit fractions with denominator 2.

ANSWER _____

4 Write 2 as a sum of unit fractions with denominator 4.

ANSWER _____

5 Write 3 as a sum of unit fractions with denominator 3.

ANSWER _____

6 Write $\frac{5}{12}$ as a sum of unit fractions.

ANSWER _____

APPLY IT Show your work

- 1** A game tracker shows that Lila finished $\frac{3}{8}$ of a quest. Write $\frac{3}{8}$ as a sum of unit fractions.

WORK SPACE

ANSWER _____

- 2** For a craft club, Andre uses 2 whole meters of ribbon. Write 2 as a sum of unit fractions with denominator 4.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Mina says that $2\frac{1}{3}$ can be written as a sum of seven copies of $\frac{1}{3}$. Is Mina correct? Explain your reasoning.

PART 1 • PRACTICE

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

PART 2 • APPLY IT

1. $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ Each equal part is $\frac{1}{8}$. Lila finished three equal parts, so add three copies of $\frac{1}{8}$.
2. $\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4}$ One whole is four copies of $\frac{1}{4}$. Two wholes are eight copies of $\frac{1}{4}$.

CHALLENGE

Yes. $2 \frac{1}{3} = \frac{7}{3}$, so it equals $\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$.

Accept unit-fraction addends in any order. For items that name a denominator, the addends must all use that denominator and have the correct number of copies.