

Fraction Build Lab

Compose and split fractions in more than one way.

GRADE 4 • 4.NS.3.f

4.NS.3.f "Compose and decompose fractions (proper and improper) and/or mixed numbers with denominators of 12 or less, in multiple ways, with and without models.*"

NAME _____

DATE _____

BUILD AND SPLIT FRACTIONS

Fractions with the same denominator have equal-size parts. To compose fractions, add the numerators and keep the denominator. To decompose a fraction or mixed number, split it into whole-number parts or fractions with the same denominator.

WORKED EXAMPLE

Write $3 \frac{5}{7}$ as an improper fraction.

1. 3 wholes = $\frac{21}{7}$.

2. $\frac{21}{7} + \frac{5}{7} = \frac{26}{7}$.

Answer: $3 \frac{5}{7} = \frac{26}{7}$

PRACTICE 6 problems

1 Write $\frac{5}{6}$ as a sum of two fractions with denominator 6.

ANSWER _____

2 Compose: $\frac{3}{8} + \frac{4}{8} = \underline{\hspace{1cm}}$.

ANSWER _____

3 Write $1 \frac{4}{5}$ as an improper fraction.

ANSWER _____

4 Decompose $\frac{11}{12}$ into a fraction with numerator 1 and another fraction with denominator 12.

ANSWER _____

5 Write $\frac{14}{9}$ as a mixed number.

ANSWER _____

6 Write $2 \frac{1}{10}$ in two different ways using fractions with denominator 10.

ANSWER _____

APPLY IT Show your work

- 1** At the skate park, Eli rides $\frac{7}{10}$ mile on one path and $\frac{16}{10}$ mile on another path. How far does he ride altogether? Write your answer as a mixed number.

WORK SPACE

ANSWER _____

- 2** Nora has $1\frac{7}{8}$ yards of ribbon for a costume. She cuts off a $\frac{5}{8}$ -yard piece. How much ribbon is left? Write your answer as an improper fraction with denominator 8.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Write $\frac{23}{12}$ in three different ways as a sum. Use fractions with denominator 12 in every way. In one way, include a whole number.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Write $\frac{5}{6}$ as a sum of two fractions with denominator 6.	$\frac{1}{6} + \frac{4}{6}$
2	Compose: $\frac{3}{8} + \frac{4}{8} = \underline{\hspace{1cm}}$.	$\frac{7}{8}$
3	Write $1\frac{4}{5}$ as an improper fraction.	$\frac{9}{5}$
4	Decompose $\frac{11}{12}$ into a fraction with numerator 1 and another fraction with denominator 12.	$\frac{1}{12} + \frac{10}{12}$
5	Write $\frac{14}{9}$ as a mixed number.	$1\frac{5}{9}$
6	Write $2\frac{1}{10}$ in two different ways using fractions with denominator 10.	$\frac{21}{10}$; $\frac{10}{10} + \frac{10}{10} + \frac{1}{10}$

PART 2 • APPLY IT

- $2\frac{3}{10}$ miles** Add the tenths: $\frac{7}{10} + \frac{16}{10} = \frac{23}{10}$. Rename $\frac{23}{10}$ as $2\frac{3}{10}$.
- $\frac{10}{8}$ yard** Rename $1\frac{7}{8}$ as $\frac{15}{8}$, then subtract $\frac{5}{8}$. The remaining ribbon is $\frac{10}{8}$ yard.

CHALLENGE

$$\frac{23}{12} = \frac{12}{12} + \frac{11}{12} = \frac{8}{12} + \frac{8}{12} + \frac{7}{12} = 1 + \frac{11}{12}$$

Accept equivalent decompositions when the addends total the given fraction or mixed number. For the word problems, accept equivalent fraction forms unless the question requires a specific form.