

Fraction Build-Up

Build each fraction with equal unit parts.

GRADE 3 • MA.3.FR.1.2

MA.3.FR.1.2 "Represent and interpret fractions, including fractions greater than one, in the form of $\frac{m}{n}$ as the result of adding the unit fraction $\frac{1}{n}$ to itself m times."

NAME _____

DATE _____

BUILD WITH UNIT FRACTIONS

The bottom number tells the size of each unit fraction. The top number tells how many of those unit fractions to add. You can use this rule for fractions less than one or greater than one.

WORKED EXAMPLE

Write $\frac{5}{7}$ as a sum of unit fractions.

1. The unit fraction is $\frac{1}{7}$.
2. Add $\frac{1}{7}$ five times.
3. $\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{5}{7}$

Answer: $\frac{5}{7} = \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7}$

PRACTICE 6 problems

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

ANSWER _____

2 Complete: $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \underline{\hspace{1cm}}$.

ANSWER _____

3 Write $\frac{8}{3}$ as a sum of unit fractions.

ANSWER _____

4 Which fraction is $\frac{1}{9}$ added 2 times?

ANSWER _____

5 Write $\frac{11}{8}$ as a sum of unit fractions.

ANSWER _____

6 How many times is $\frac{1}{10}$ added to make $\frac{13}{10}$?

ANSWER _____

APPLY IT Show your work

- 1** In a racing game, Kai drives $\frac{14}{8}$ of a track. The track is marked in eighths. Write $\frac{14}{8}$ as an addition sentence using unit fractions.

WORK SPACE

ANSWER _____

- 2** A coding robot moves $1\frac{1}{6}$ meter. Each small move is $\frac{1}{6}$ meter. How many small moves does the robot make? Write an addition sentence to show your thinking.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A student says, " $\frac{9}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$." Is the student correct? Explain the error and write the correct addition sentence.

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	Complete: $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \underline{\hspace{1cm}}$.	$\frac{4}{6}$
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	Which fraction is $\frac{1}{9}$ added 2 times?	$\frac{2}{9}$
5	Write $\frac{11}{8}$ as a sum of unit fractions.	$\frac{11}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
6	How many times is $\frac{1}{10}$ added to make $\frac{13}{10}$?	13 times

PART 2 • APPLY IT

- $\frac{14}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$ The unit fraction is $\frac{1}{8}$ because the track is marked in eighths. Add $\frac{1}{8}$ fourteen times.
- 11 small moves; $\frac{11}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$** Each small move is $\frac{1}{6}$ meter. The numerator shows that the robot makes eleven moves of $\frac{1}{6}$ meter.

CHALLENGE

No. The student added $\frac{1}{3}$ only 3 times, which equals $\frac{3}{3}$. $\frac{9}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$.

Accept repeated-addition sentences with the correct unit fraction and exactly the number of addends shown by the numerator. Do not require students to simplify fractions, since the goal is to show the given numerator and denominator.