LESSON MAKER PRO

Fraction Build-Up

Build fractions greater than 1 from unit fractions.

GRADE 4 · 4.NF.B.3

CCSS.Math.Content.4.NF.B.3 "Understand a fraction a / b with a > 1 as a sum of fractions 1/ b."

NAME _____ DATE _____

BUILD WITH UNIT FRACTIONS

A fraction greater than 1 can be built from unit fractions. Keep the same denominator, then write 1/b once for each part named by the numerator. Count the unit fractions to check your work.

WORKED EXAMPLE

Write 11/8 as a sum of unit fractions.

1. The denominator is 8, so each unit fraction is 1/8.
2. The numerator is 11, so write eleven copies of 1/8.
3. 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 = 11/8

Answer: 11/8 = 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8

PRACTICE 6 problems

1 Write 7/4 as a sum of unit fractions.

ANSWER _____

2 Which sum equals 6/5? A. 1/5 + 1/5 + 1/5 + 1/5 + 1/5 + 1/5 B. 1/5 + 1/5 + 1/5 + 1/5 + 1/5 C. 1/6 + 1/6 + 1/6 + 1/6 + 1/6

ANSWER _____

3 Find the fraction: 1/3 + 1/3 + 1/3 + 1/3 = ___.

ANSWER _____

4 Complete the equation: 9/7 = ___. Write only unit fractions.

ANSWER _____

5 A student writes 7/6 as 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6. What should be changed?

ANSWER _____

6 How many 1/12 terms are needed to make 13/12?

ANSWER _____

APPLY IT Show your work

1 In an adventure game, each checkpoint fills 1/4 of a map meter. Kai finishes 10 checkpoints. Write the total filled meter as a sum of unit fractions.

WORK SPACE

ANSWER _____

2 The school garden uses 1/6 of a bag of soil for each raised bed. The garden club fills 14 raised beds. Write the total amount of soil as a sum of unit fractions.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A student writes 15/12 as twelve copies of 1/12 plus 3/12. Is this written using only unit fractions? Rewrite 15/12 using only unit fractions and explain your reasoning.

WORK SPACE AND ANSWER

ANSWER KEY # Fraction Build-Up

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write 7/4 as a sum of unit fractions.	**1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4**
2	Which sum equals 6/5? A. 1/5 + 1/5 + 1/5 + 1/5 + 1/5 + 1/5 B. 1/5 + 1/5 + 1/5 + 1/5 + 1/5 C. 1/6 + 1/6 + 1/6 + 1/6 + 1/6	**A. 1/5 + 1/5 + 1/5 + 1/5 + 1/5 + 1/5**
3	Find the fraction: 1/3 + 1/3 + 1/3 + 1/3 = ___.	**4/3**
4	Complete the equation: 9/7 = ___. Write only unit fractions.	**1/7 + 1/7 + 1/7 + 1/7 + 1/7 + 1/7 + 1/7 + 1/7 + 1/7**
5	A student writes 7/6 as 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6. What should be changed?	**Add one more 1/6: 7/6 = 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6**
6	How many 1/12 terms are needed to make 13/12?	**13**

PART 2 · APPLY IT

1. **10/4 = 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4 + 1/4** Each checkpoint adds 1/4 of a meter. Ten checkpoints make ten copies of 1/4, or 10/4.
2. **14/6 = 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6 + 1/6** Each bed uses 1/6 of a bag. Fourteen beds make fourteen copies of 1/6, or 14/6.

CHALLENGE

No. 3/12 is not a unit fraction because its numerator is 3. 15/12 = 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12.

Accept unit-fraction terms in any order. Require the denominator to stay the same and the number of 1/b terms to match the numerator, a simplified fraction alone does not show the target skill.