LESSON MAKER PRO

Fraction Split Lab

Break fractions apart in more than one way.

GRADE 4 · 4.NF.B.3b

CCSS.Math.Content.4.NF.B.3b "Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: 3/8 = 1/8 + 1/8 + 1/8..."

NAME _____ DATE _____

SPLIT THE NUMERATOR

To decompose a fraction, split its numerator into smaller addends and keep the denominator the same. You can check your work by adding the numerators while keeping the denominator unchanged.

WORKED EXAMPLE

Decompose 11/13 in two ways.

1. Split 11 into 4 + 7.
2. Write 11/13 = 4/13 + 7/13.
3. Split 11 into 2 + 3 + 6.
4. Write 11/13 = 2/13 + 3/13 + 6/13.

Answer: 11/13 = 4/13 + 7/13; 11/13 = 2/13 + 3/13 + 6/13

PRACTICE 6 problems

1 Write 3/8 as a sum of three unit fractions.

ANSWER _____

2 Write two different equations that decompose 4/6.

ANSWER _____

3 Decompose 7/12 into a sum of three fractions with denominator 12.

ANSWER _____

4 Find x. Then write the completed equation: 8/10 = 3/10 + x/10.

ANSWER _____

5 Which equation is correct? A. 6/7 = 1/7 + 4/7 B. 6/7 = 2/7 + 4/7 C. 6/7 = 3/7 + 4/7

ANSWER _____

6 Lena writes 2/8 + 6/8 = 10/8. What should she write instead?

ANSWER _____

APPLY IT Show your work

1 During an art app challenge, Devon colored 3/4 of a digital badge. Write two different equations that show how Devon could split the colored part into fractions with denominator 4.

WORK SPACE

ANSWER _____

2 A team finished 7/10 of a coding maze in three rounds. Write one equation that decomposes the finished part into three fractions with denominator 10.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Nora writes 3 5/8 = 8/8 + 8/8 + 4/8 + 1/8. Is her decomposition correct? Explain, then write a correct decomposition using five fractions with denominator 8.

_____

_____

ANSWER KEY

Fraction Split Lab

GRADE 4 · 4.NF.B.3b

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write 3/8 as a sum of three unit fractions.	**3/8 = 1/8 + 1/8 + 1/8**
2	Write two different equations that decompose 4/6.	**4/6 = 1/6 + 3/6; 4/6 = 2/6 + 2/6**
3	Decompose 7/12 into a sum of three fractions with denominator 12.	**7/12 = 1/12 + 2/12 + 4/12**
4	Find x. Then write the completed equation: 8/10 = 3/10 + x/10.	**x = 5; 8/10 = 3/10 + 5/10**
5	Which equation is correct? A. 6/7 = 1/7 + 4/7 B. 6/7 = 2/7 + 4/7 C. 6/7 = 3/7 + 4/7	**B. 6/7 = 2/7 + 4/7**
6	Lena writes 2/8 + 6/8 = 10/8. What should she write instead?	**2/8 + 6/8 = 8/8**

PART 2 · APPLY IT

1. **3/4 = 1/4 + 2/4; 3/4 = 1/4 + 1/4 + 1/4** Both decompositions keep denominator 4. The numerators in each equation add to 3.
2. **7/10 = 2/10 + 2/10 + 3/10** Keep denominator 10 for all three fractions. The numerators 2, 2, and 3 add to 7.

CHALLENGE

No. The numerators in Nora's equation add to 21, which is 2 5/8. A correct decomposition is 3 5/8 = 8/8 + 8/8 + 8/8 + 4/8 + 1/8.

Accept any decomposition with the stated denominator when the numerators add to the original numerator. For open-response items, equivalent correct decompositions may use different numbers of addends unless the prompt specifies a number of addends.