LESSON MAKER PRO

Fraction Pieces

Break one fraction into equal-sized parts in different ways.

GRADE 4 · 4.NF.B.15.a

4.NF.B.15.a "Decompose a fraction as a sum of unit fractions and as a sum of fractions with the same denominator in more than one way using area models, length models, and equations."

NAME _____ DATE _____

ONE FRACTION, MANY SUMS

A unit fraction names one equal part of a whole. To break a fraction into a sum, keep the denominator the same and make the numerators add to the original numerator. You can add unit fractions or group the parts in different ways.

WORKED EXAMPLE

Use the bar to write 5/7 as a sum of unit fractions and as a sum of two fractions.

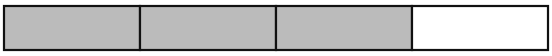


1. The whole has 7 equal parts, so each part is 1/7.
2. Five shaded parts give 5/7 = 1/7 + 1/7 + 1/7 + 1/7 + 1/7.
3. Group the shaded parts another way: 5/7 = 2/7 + 3/7.

Answer: 5/7 = 1/7 + 1/7 + 1/7 + 1/7 + 1/7; 5/7 = 2/7 + 3/7

PRACTICE 6 problems

1 Use the bar. Write the shaded fraction as a sum of unit fractions.



ANSWER _____

2 Use the bar. Write the shaded fraction as a sum of two fractions in two different ways. Keep the denominator the same.



ANSWER _____

_____

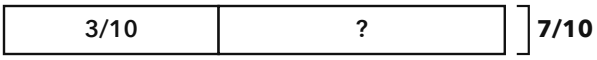
3 Use the bar. Write the shaded fraction as a sum of unit fractions. Then write it as a sum of two fractions with the same denominator.



ANSWER _____

_____

4 Use the strip to fill in the blank: 7/10 = 3/10 + ___/10. Then write 7/10 as a sum of unit fractions.



ANSWER _____

_____

5 Use the bar. Write the shaded fraction as a sum of unit fractions. Then write it as a sum of two fractions with the same denominator.



ANSWER _____

_____

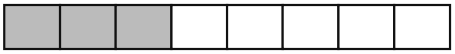
6 A student says 8/11 = 4/11 + 4/11 is the only way to split 8/11 into two fractions with denominator 11. Write a different sum and explain why it equals 8/11.

ANSWER _____

_____

APPLY IT Show your work

1 Rae read part of a comic on Saturday and another part on Sunday. The bars show how much she read each day. What fraction of the comic did she read in all? Write an equation using the two days, then write the total as a sum of unit fractions.

Saturday 

Sunday 

ANSWER _____

2 At a game booth, Luis fills 2/12 of a prize card in the first round and 5/12 in the second round. What fraction of the card is filled? Write a different sum of two fractions with denominator 12 that equals the total.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use the bar to write the shaded fraction as a sum of unit fractions. Then write two different sums of two fractions with denominator 12. In both two-fraction sums, neither addend may be 1/12.



WORK SPACE AND ANSWER

ANSWER KEY

Fraction Pieces

GRADE 4 · 4.NF.B.15.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the bar. Write the shaded fraction as a sum of unit fractions.	**3/4 = 1/4 + 1/4 + 1/4**
2	Use the bar. Write the shaded fraction as a sum of two fractions in two different ways. Keep the denominator the same.	**4/6 = 1/6 + 3/6; 4/6 = 2/6 + 2/6**
3	Use the bar. Write the shaded fraction as a sum of unit fractions. Then write it as a sum of two fractions with the same denominator.	**5/8 = 1/8 + 1/8 + 1/8 + 1/8 + 1/8; 5/8 = 2/8 + 3/8**
4	Use the strip to fill in the blank: 7/10 = 3/10 + ___/10. Then write 7/10 as a sum of unit fractions.	**7/10 = 3/10 + 4/10; 7/10 = 1/10 + 1/10 + 1/10 + 1/10 + 1/10 + 1/10 + 1/10**
5	Use the bar. Write the shaded fraction as a sum of unit fractions. Then write it as a sum of two fractions with the same denominator.	**6/9 = 1/9 + 1/9 + 1/9 + 1/9 + 1/9 + 1/9; 6/9 = 2/9 + 4/9**
6	A student says 8/11 = 4/11 + 4/11 is the only way to split 8/11 into two fractions with denominator 11. Write a different sum and explain why it equals 8/11.	**8/11 = 3/11 + 5/11. The numerators add to 8, and both fractions have denominator 11.**

PART 2 · APPLY IT

1. **3/8 + 4/8 = 7/8; 7/8 = 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8** The bars show 3/8 on Saturday and 4/8 on Sunday. Add the numerators to get 7/8, or count seven unit fractions of 1/8.
2. **2/12 + 5/12 = 7/12; 7/12 = 3/12 + 4/12** Add the filled parts to get 7/12. A different pair of numerators, 3 and 4, also adds to 7.

CHALLENGE

9/12 = 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12 + 1/12; 9/12 = 2/12 + 7/12; 9/12 = 3/12 + 6/12

Accept any different, correct sums that meet each prompt's conditions. Fractions named from a model should keep the model's denominator.