LESSON MAKER PRO

Fraction Build Lab

Make and break fractions with equal parts.

GRADE 3 · 3.NS.3.d

3.NS.3.d "Compose and decompose fractions (proper and improper) with denominators of 2, 3, 4, 5, 6, 8, and 10 in multiple ways (e.g., 7/4 = 4/4 + 3/4 or 4/6 = 3/6 + 1/6 = 2/6 + 2/6) with models."

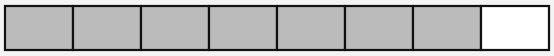
NAME _____ DATE _____

BUILD EQUAL-PART FRACTIONS

When fractions refer to the same-size whole and have the same denominator, the parts are the same size. To compose fractions, add the numerators and keep the denominator. To decompose a fraction, split its numerator into smaller numbers and keep the denominator.

WORKED EXAMPLE

Use the bar model to decompose 7/8 into two fractions. Make one part 4/8.



1. The model has 7 shaded eighths.
2. Use 4 shaded eighths for the first part.
3. There are 3 shaded eighths left.
4. Write 7/8 = 4/8 + 3/8.

Answer: 7/8 = 4/8 + 3/8

PRACTICE 6 problems

1 Compose the fractions. 1/2 + 1/2 = ___/2

ANSWER _____

2 Complete the equation. 4/5 = ___/5 + 1/5

ANSWER _____

3 Complete the equation. 5/6 = 2/6 + ___/6

ANSWER _____

4 Use the shaded bar. Complete the equation. 9/10 = 6/10 + ___/10



ANSWER _____

5 Complete the equation. 9/4 = 3/4 + ___/4

ANSWER _____

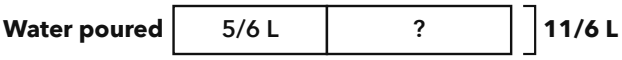
6 Complete both equations. 10/3 = 4/3 + ___/3 and 10/3 = 5/3 + ___/3

ANSWER _____

_____

APPLY IT Show your work

1 Noah pours 11/6 liters of water into a class garden container. He pours 5/6 liter first. Use the tape to find how much water he pours next. Write an equation.



ANSWER _____

2 A robotics club finishes 10/3 of a practice course over three sessions. They finish 2/3 in the first session and 3/3 in the second session. How much do they finish in the third session? Write an equation that shows all three sessions.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Write two different equations that decompose 11/5 into exactly three nonzero fractions with denominator 5. Put the addends in order from least to greatest. Then explain how you know each equation equals 11/5.

WORK SPACE AND ANSWER

ANSWER KEY

Fraction Build Lab

GRADE 3 · 3.NS.3.d

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Compose the fractions. 1/2 + 1/2 = ___/2	**1/2 + 1/2 = 2/2**
2	Complete the equation. 4/5 = ___/5 + 1/5	**4/5 = 3/5 + 1/5**
3	Complete the equation. 5/6 = 2/6 + ___/6	**5/6 = 2/6 + 3/6**
4	Use the shaded bar. Complete the equation. 9/10 = 6/10 + ___/10	**9/10 = 6/10 + 3/10**
5	Complete the equation. 9/4 = 3/4 + ___/4	**9/4 = 3/4 + 6/4**
6	Complete both equations. 10/3 = 4/3 + ___/3 and 10/3 = 5/3 + ___/3	**10/3 = 4/3 + 6/3; 10/3 = 5/3 + 5/3**

PART 2 · APPLY IT

1. **Noah pours 6/6 liter next. 11/6 = 5/6 + 6/6.** Subtract the 5 sixths poured first from 11 sixths total. The remaining 6 sixths are the second pour.
2. **They finish 5/3 in the third session. 10/3 = 2/3 + 3/3 + 5/3.** The first two sessions total 5/3. The remaining amount is 10/3 minus 5/3, which is 5/3.

CHALLENGE

Sample answer: 11/5 = 1/5 + 5/5 + 5/5 and 11/5 = 3/5 + 4/5 + 4/5. Each equation equals 11/5 because the numerators in each sum add to 11 and the denominator stays 5.

Accept addends in a different order unless the item tells students to use a particular order. For the challenge, accept any two different sums of three nonzero fractions with denominator 5 whose numerators total 11.