

# Fraction Split Lab

*Break one fraction into matching-denominator sums.*

**GRADE 4 • 4.NR.4.5**

**4.NR.4.5** "Represent a fraction as a sum of fractions with the same denominator in more than one way, recording with an equation."

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## SPLIT THE NUMERATOR

To split a fraction, keep the denominator the same in every addend. Break the numerator into two or more whole-number parts, then write each part over the original denominator.

## WORKED EXAMPLE

Write  $\frac{7}{11}$  as a sum of fractions with the same denominator in two different ways.

1. Keep 11 as the denominator in every fraction.
2. Split 7 into  $1 + 6$ .
3. Write  $\frac{7}{11} = \frac{1}{11} + \frac{6}{11}$ .
4. Split 7 another way,  $3 + 4$ , so  $\frac{7}{11} = \frac{3}{11} + \frac{4}{11}$ .

**Answer:**  $\frac{7}{11} = \frac{1}{11} + \frac{6}{11}$ ;  $\frac{7}{11} = \frac{3}{11} + \frac{4}{11}$

## PRACTICE 6 problems

- 1** Write  $\frac{4}{8}$  as a sum of fractions with denominator 8 in two different ways.

**ANSWER** \_\_\_\_\_

- 2** Write  $\frac{5}{6}$  as a sum of fractions with denominator 6 in two different ways.

**ANSWER** \_\_\_\_\_

- 3** Write  $\frac{6}{9}$  as a sum of fractions with denominator 9 in two different ways.

**ANSWER** \_\_\_\_\_

- 4** Write  $\frac{4}{5}$  as a sum of fractions with denominator 5 in two different ways.

**ANSWER** \_\_\_\_\_

- 5** Write  $\frac{8}{10}$  as a sum of fractions with denominator 10 in two different ways.

**ANSWER** \_\_\_\_\_

- 6** Write  $\frac{9}{12}$  as a sum of fractions with denominator 12 in two different ways.

**ANSWER** \_\_\_\_\_

## APPLY IT Show your work

- 1** A robotics club finished  $\frac{6}{10}$  of its model during two work sessions. Show two different ways the fraction completed could be split between the sessions. Write an equation for each way.

WORK SPACE

ANSWER \_\_\_\_\_

- 2** Jalen completed  $\frac{8}{12}$  of the levels in a video game during two rounds. Show two different ways the fraction completed could be split between the rounds. Write an equation for each way.

WORK SPACE

ANSWER \_\_\_\_\_

## CHALLENGE One step up

### CHALLENGE

A student baker used  $\frac{9}{10}$  of a bag of flour across three batches of cupcakes. Write  $\frac{9}{10}$  as a sum of three fractions with denominator 10 in three different ways.

---

---

## PART 1 • PRACTICE

| # | PROBLEM                                                                               | ANSWER                                                                                      |
|---|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 1 | Write $\frac{4}{8}$ as a sum of fractions with denominator 8 in two different ways.   | $\frac{4}{8} = \frac{1}{8} + \frac{3}{8}$ ; $\frac{4}{8} = \frac{2}{8} + \frac{2}{8}$       |
| 2 | Write $\frac{5}{6}$ as a sum of fractions with denominator 6 in two different ways.   | $\frac{5}{6} = \frac{1}{6} + \frac{4}{6}$ ; $\frac{5}{6} = \frac{2}{6} + \frac{3}{6}$       |
| 3 | Write $\frac{6}{9}$ as a sum of fractions with denominator 9 in two different ways.   | $\frac{6}{9} = \frac{1}{9} + \frac{5}{9}$ ; $\frac{6}{9} = \frac{2}{9} + \frac{4}{9}$       |
| 4 | Write $\frac{4}{5}$ as a sum of fractions with denominator 5 in two different ways.   | $\frac{4}{5} = \frac{1}{5} + \frac{3}{5}$ ; $\frac{4}{5} = \frac{2}{5} + \frac{2}{5}$       |
| 5 | Write $\frac{8}{10}$ as a sum of fractions with denominator 10 in two different ways. | $\frac{8}{10} = \frac{1}{10} + \frac{7}{10}$ ; $\frac{8}{10} = \frac{3}{10} + \frac{5}{10}$ |
| 6 | Write $\frac{9}{12}$ as a sum of fractions with denominator 12 in two different ways. | $\frac{9}{12} = \frac{1}{12} + \frac{8}{12}$ ; $\frac{9}{12} = \frac{4}{12} + \frac{5}{12}$ |

## PART 2 • APPLY IT

- $\frac{6}{10} = \frac{1}{10} + \frac{5}{10}$ ;  $\frac{6}{10} = \frac{2}{10} + \frac{4}{10}$  Keep 10 as the denominator. Split the numerator 6 into two different pairs, such as 1 + 5 and 2 + 4.
- $\frac{8}{12} = \frac{1}{12} + \frac{7}{12}$ ;  $\frac{8}{12} = \frac{3}{12} + \frac{5}{12}$  Keep 12 as the denominator. Split the numerator 8 into two different pairs, such as 1 + 7 and 3 + 5.

## CHALLENGE

$$\frac{9}{10} = \frac{1}{10} + \frac{3}{10} + \frac{5}{10}; \frac{9}{10} = \frac{2}{10} + \frac{3}{10} + \frac{4}{10}; \frac{9}{10} = \frac{1}{10} + \frac{4}{10} + \frac{4}{10}$$

Accept any equations with the stated denominator in every addend and numerators that add to the original numerator. Do not count an equation with the same addends in a different order as a new way.