LESSON MAKER PRO

Same Amount, New Parts

Use fraction bars and multiplication to find equivalent fractions.

GRADE 4 · MT.4.NF.1

MT.4.NF.1 "Explain why a fraction a/b is equivalent to a fraction (n × a)/(n × b) by using visual fraction models and use this principle to recognize and generate equivalent fractions."

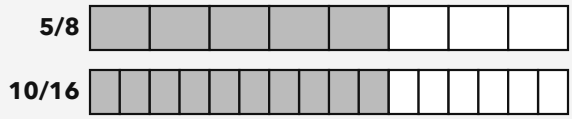
NAME _____ DATE _____

THE BIG IDEA

You can split each equal part of a fraction bar into the same number of smaller parts. The shaded amount stays the same, even though the number of parts changes. Multiply the numerator and denominator by the same number to name the new fraction.

WORKED EXAMPLE

Use the bars to show why 5/8 = 10/16.



1. Each of the 8 parts splits into 2 equal parts.
2. Multiply the numerator: 5 × 2 = 10.
3. Multiply the denominator: 8 × 2 = 16.

Answer: 5/8 = 10/16

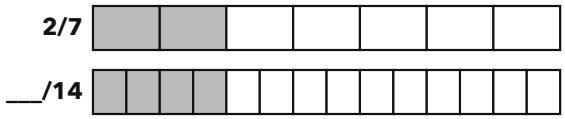
PRACTICE 6 problems

1 Use the bars to complete 1/3 = ___/9.



ANSWER _____

2 Use the bars to complete 2/7 = ___/14.



ANSWER _____

3 What fraction does the bottom bar show? Write an equation to show that it is equivalent to the top bar.



ANSWER _____

4 Complete 3/7 = 9/___.

ANSWER _____

5 Complete 1/6 = ___/12.

ANSWER _____

6 Are 2/3 and 4/9 equivalent? Write yes or no and explain using multiplication.

ANSWER _____

_____

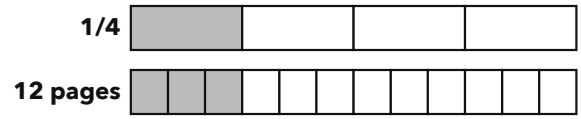
APPLY IT Show your work

1 At a pizza party, Jay eats 2/6 of a pizza. The same pizza is cut into 12 equal slices instead of 6. How many of the 12 slices match the amount Jay ate? Write an equivalent fraction.



ANSWER _____

2 A comic book has 12 pages. Nia has read 1/4 of it. How many pages has she read? Write an equivalent fraction with a denominator of 12.



ANSWER _____

CHALLENGE One step up

A student says you can always make an equivalent fraction by adding to the numerator and denominator. The student adds 6 and 9 to get 2/3 = 8/12. Is adding this way a rule that always works? Explain why these two fractions match using the bars and multiplication.



WORK SPACE AND ANSWER

ANSWER KEY # Same Amount, New Parts

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use the bars to complete 1/3 = ___/9.	**3**
2	Use the bars to complete 2/7 = ___/14.	**4**
3	What fraction does the bottom bar show? Write an equation to show that it is equivalent to the top bar.	**3/4 = 9/12**
4	Complete 3/7 = 9/___.	**21**
5	Complete 1/6 = ___/12.	**2**
6	Are 2/3 and 4/9 equivalent? Write yes or no and explain using multiplication.	**No. Multiplying 3 by 3 gives 9, but multiplying 2 by 3 gives 6, not 4.**

PART 2 · APPLY IT

1. **4 slices; 2/6 = 4/12** Each sixth becomes 2 slices. Multiply the numerator and denominator by 2.
2. **3 pages; 1/4 = 3/12** Each fourth contains 3 pages. Multiply the numerator and denominator by 3.

CHALLENGE

No, adding to the numerator and denominator is not a rule that always works. The fractions match because each third is split into 4 equal parts: 2 × 4 = 8 and 3 × 4 = 12.

Accept equivalent wording for explanations. In the challenge, the student should reject addition as a general rule and show that both parts of the fraction are multiplied by 4.