LESSON MAKER PRO

Same Amount, New Fraction

Change the parts without changing the amount.

GRADE 4 · 4.NOS.D.9.b

4.NOS.D.9.b "Explain why fractions are equivalent (c/d = (n × c)/(n × d))."

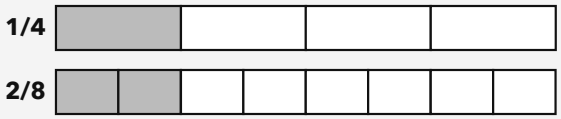
NAME _____ DATE _____

THE BIG IDEA

Multiply the numerator and denominator by the same number to make an equivalent fraction. The parts become smaller, but the fraction still names the same amount.

WORKED EXAMPLE

Show why 1/4 = 2/8.



1. Multiply the numerator by 2: 1 × 2 = 2.
2. Multiply the denominator by 2: 4 × 2 = 8.
3. The bars show the same amount shaded.

Answer: 1/4 = 2/8

PRACTICE 4 problems

1 Complete 3/7 = ___/21. What number multiplies both parts?

ANSWER _____

2 Complete 5/6 = 25/___. What number multiplies both parts?

ANSWER _____

3 Is 7/9 = 42/54? Explain.

ANSWER _____

4 Complete 3/11 = ___/55. Explain why the fractions are equivalent.

ANSWER _____

APPLY IT Show your work

1 A game shows 3/10 of a level complete. Write an equivalent fraction with a denominator of 40. Explain why it shows the same progress.

WORK SPACE

ANSWER _____

2 A sticker book has 7/12 of its pages filled. Write an equivalent fraction with a numerator of 21. Explain why it shows the same amount filled.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Maya says 6/9 = 18/36 because she multiplied both parts. Is she right? Explain, then write a fraction equal to 6/9 with a denominator of 36.

WORK SPACE AND ANSWER

ANSWER KEY

Same Amount, New Fraction

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Complete 3/7 = ___/21. What number multiplies both parts?	**9; multiply both parts by 3.**
2	Complete 5/6 = 25/___. What number multiplies both parts?	**30; multiply both parts by 5.**
3	Is 7/9 = 42/54? Explain.	**Yes. Multiply both parts of 7/9 by 6.**
4	Complete 3/11 = ___/55. Explain why the fractions are equivalent.	**15; both parts of 3/11 are multiplied by 5.**

PART 2 · APPLY IT

1. **12/40; both parts of 3/10 are multiplied by 4.** Since 10 × 4 = 40, multiply 3 by 4 too. This gives 12/40.
2. **21/36; both parts of 7/12 are multiplied by 3.** Since 7 × 3 = 21, multiply 12 by 3 too. This gives 21/36.

CHALLENGE

No. She multiplied 6 by 3 but 9 by 4. Multiply both parts of 6/9 by 4 to get 24/36.

Accept explanations that clearly state the numerator and denominator are multiplied by the same number. In the challenge, students must identify the different multipliers and give 24/36.