

N5.5

Activity 12.15 MISSING-NUMBER EQUIVALENCES

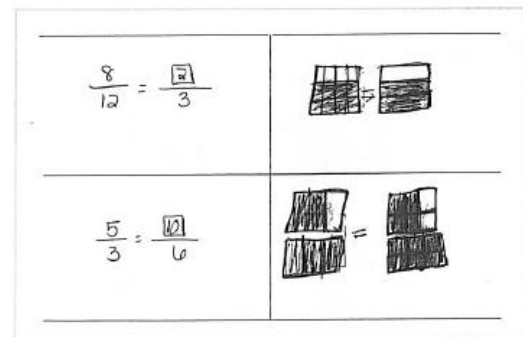
Give students an equation expressing an equivalence between two fractions, but with one of the numbers missing. Ask them to draw a picture to solve the equation. Here are four different examples:

$$\frac{5}{3} = \frac{\square}{6} \quad \frac{2}{3} = \frac{6}{\square} \quad \frac{8}{12} = \frac{\square}{3} \quad \frac{9}{12} = \frac{3}{\square}$$

The missing number can be either a numerator or a denominator. Furthermore, the missing number can either be larger or smaller than the corresponding part of the equivalent fraction. (All four of these possibilities are represented in the examples.) The task is to find the missing number and to explain your solution. Figure 12.16 illustrates how Zachary represented the equivalences with equations and partitioned rectangles. The examples shown involve simple whole-number multiples between equivalent fractions. Next, consider pairs such as $\frac{6}{8} = \frac{\square}{12}$ or $\frac{9}{12} = \frac{6}{\square}$. In these equivalences, one denominator or numerator is not a whole-number multiple of the other.

Figure 12.16

A student illustrated equivalent fractions by partitioning rectangles.



From Van de Walle et. al. (2014). *Teaching Student-Centered Mathematics Grades: Developmentally Appropriate Instruction for Grades 3 – 5 (2nd Ed.)*. Toronto: Pearson Education, Inc. (p. 223).