7.RP Art Class, Variation 2

Alignments to Content Standards: 7.RP.A.2

Task

The students in Ms. Baca's art class were mixing yellow and blue paint. She told them that two mixtures will be the same shade of green if the blue and yellow paint are in the same ratio.

The table below shows the different mixtures of paint that the students made.

	A	B	C	D	E	F
Yellow	1 part	2 parts	3 parts	4 parts	5 parts	6 parts
Blue	2 part	3 parts	6 parts	6 parts	8 parts	9 parts

a. How many different shades of paint did the students make?

b. Write an equation that relates y, the number of parts of yellow paint, and b, the number of parts of blue paint for each of the different shades of paint the students made.

IM Commentary

Giving the amount of paint in "parts" instead of a specific standardized unit like cups might be confusing to students who do not understand what this means. Because this

is standard language in ratio problems, students need to be exposed to it, but teachers might need to explain the meaning if their students are encountering it for the first time.

Edit this solution

Solution

a. The students made three different shades: mixtures A and C are the same, mixtures B, D, and F are the same, and mixture E is different than the other two.

b. An equation for mixtures A and C is $b = 2y$. An equivalent equation is $y = \frac{1}{2}b$.
The equation for mixtures B, D, and F is $b = \frac{3}{2}y$. An equivalent equation is $y = \frac{2}{3}b$.
The equation for mixture E is $b = \frac{8}{5}y$. An equivalent equation is $y = \frac{5}{8}b$.