Illustrative Mathematics

7.RP Art Class, Variation 1

Alignments to Content Standards

- Alignment: 7.RP.A.2

Tags

• *This task is not yet tagged.*

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.

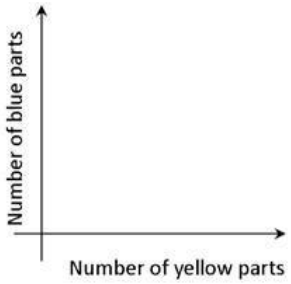
The table below shows the different mixtures of paint that the students made.

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

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

b. Some of the shades of paint were bluer than others. Which mixture(s) were the bluest? Show work or explain how you know.

c. Carefully plot a point for each mixture on a coordinate plane like the one that is shown in the figure. (Graph paper might help.)



d. Draw a line connecting each point to (0,0). What do the mixtures that are the same shade of green have in common?

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.

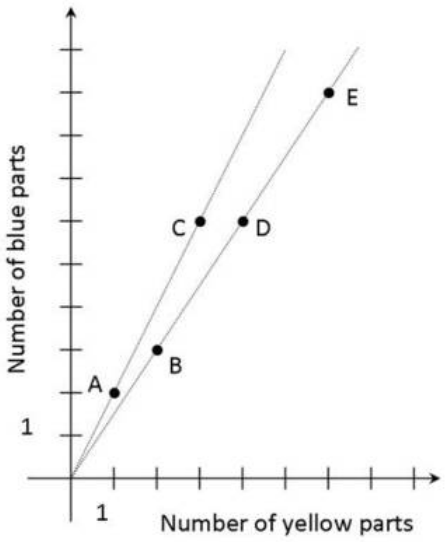
Solutions

Solution: Equations

a. The students made two different shades: mixtures A and C are the same, and mixtures B, D, and E are the same.

b. To make A and C, you add 2 parts blue to 1 part yellow. To make mixtures B, D, and E, you add 3/2 parts blue to 1 part yellow. Mixtures A and C are the bluest because you add more blue paint to the same amount of yellow paint.

c. See the figure.



d. If two mixture are the same shade, they lie on the same line through the point (0,0).