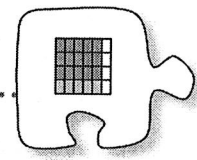


5.1.1 How can I describe it?

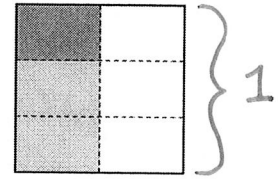


Representing Fraction Multiplication

5-1. MURAL MADNESS: Riley, Morgan, and Reggie were making plans for a mural on the side of their local community center. Riley agreed to prepare $\frac{1}{2}$ of the area, Morgan agreed to $\frac{1}{3}$ of the area, and Reggie agreed to finish the work on the remaining $\frac{1}{6}$ of the area. A few days later, none of them had completed the whole section each had committed to clean and seal. Riley had completed $\frac{1}{3}$ of her part. Morgan had completed $\frac{5}{6}$ of her part. Reggie had completed $\frac{2}{3}$ of his part.

- a) With your class, create a table that will help you to make sense of the problem.
- b) Create a diagram and number sentence for Riley, Morgan, and Reggie. How much of the mural did each actually complete?
- c) Who has completed the least of the total mural area? The most?

5-2. Juanne drew a square with side lengths of 1 unit. Then she shaded part of the diagram (shown at right). Her brother Jaymes looked over her shoulder and asked, "Oh, you're learning about area?"



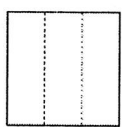
"Why do you say that?" Juanne asked.

He answered, "It looks like you have a small rectangle in the upper left corner with a length of $\frac{1}{3}$ unit and a width of $\frac{1}{2}$ unit, and you have shaded its area."

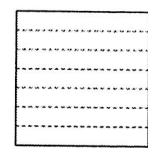
- a) What is the area of the entire diagram?
- b) What is the area of the darkly shaded rectangle in Juanne's diagram?
- c) Write the area of the darkly shaded rectangle as a product of length and width. (Hint: $A = l \times w$)

5-3. For each product below, complete a diagram and solve. You might find copying the diagrams onto graph paper helpful.

a) $\frac{3}{4} \times \frac{1}{3} =$

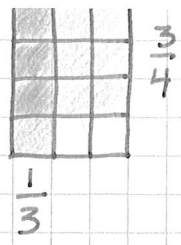


b) $\frac{1}{5} \times \frac{1}{7} =$

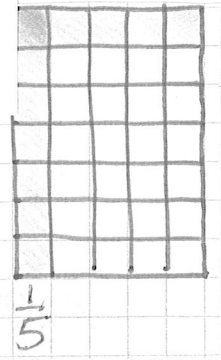


c) $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

5-3 a)



b)



$\frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$

$\frac{1}{5} \times \frac{1}{7} = \frac{1}{35}$

5-1

a)

b) Ri

Mi

c) M
Ca

5-2

b)



$\frac{2}{18}$

Reggie completed

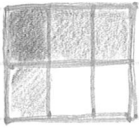
Reggie

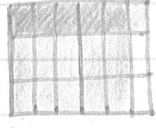
and $\frac{2}{18}$

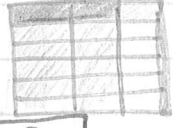
an

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5-1	Student	Agreed to	Completed
a)	Riley	$\frac{1}{2}$	$\frac{1}{3}$ of his part
	Morgan	$\frac{1}{3}$	$\frac{5}{6}$ of her part
	Reggie	$\frac{1}{6}$	$\frac{2}{3}$ of his part

b) Riley:  $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$ ← Riley completed

Morgan:  $\frac{1}{3} \times \frac{5}{6} = \frac{5}{18}$ ← Morgan completed

Reggie:  $\frac{1}{6} \times \frac{2}{3} = \frac{2}{18}$ ← Reggie completed

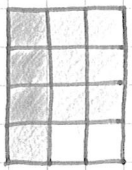
c) Morgan completed the most and Reggie completed the least.

$\frac{1}{6} \cdot \frac{3}{3} = \frac{3}{18}$ } Riley was between $\frac{5}{18}$ and $\frac{2}{18}$

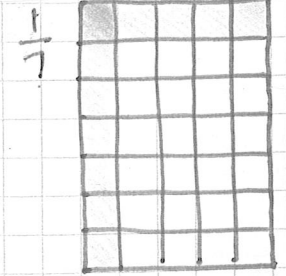
5-2 a) $1 \times 1 = 1$ The entire diagram has an area of 1 square unit.

b) The area is $\frac{1}{6}$ because 1 is darkly shaded out of 6 total boxes.

c) $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$

5-3 a)  $\frac{3}{4}$

$\frac{1}{3}$

b)  $\frac{1}{7}$

$\frac{1}{5}$

$\frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$

$\frac{1}{5} \times \frac{1}{7} = \frac{1}{35}$