

# Juicy Juice

Representing ratios with two components as repeating patterns and tables of values, and generating equivalent ratios

## AIM

Students will represent ratios with 2 components as repeating patterns and tables of values, and then generate equivalent ratios for different situations.

## MATERIALS

- 1 copy of the blackline master (opposite) for each student

## REFLECTION

Have the students make their own juice recipe by mixing 2 kinds of juice. Ask them to write recipes for 1 glass (1 repeat), 10 glasses, and 25 glasses. Students can then ask a partner to check their recipes.

- 1 Say, *A juice bar makes tropical juice by combining glasses of orange and apple juice. For every 1 orange they use 4 apples. For 2 glasses, how many oranges does the juice bar use? (2) How many apples? (8) How did you figure it out?* (Multiplied the quantity of each ingredient by 2.)
- 2 Ask the students to complete Questions 1 and 2 on the blackline master. Ask volunteers to share their answers, and then discuss how the number of apples is always 4 times the number of oranges.
- 3 Say, *The juice bar tries a new recipe for orange and apple juice. They will use 6 oranges and 18 apples. Will this juice taste the same as the first juice? (No.)* Allow the students time to discuss their ideas with a partner before inviting volunteers to share their answers. Ensure they understand that the across pattern for the new fruit juice is different as the number of apples is only 3 times the number of oranges. Have the students complete Question 3. Ask volunteers to share their answers, and discuss how, when making repeats, the numbers of oranges and apples are always multiplied by the same numbers from the 1st repeat.
- 4 Write **6 oranges for every 18 apples** on the board. Say, *The new recipe is used to make some glasses of juice. If the juice bar wants to make double that amount of juice, how many oranges will they need? (12) How many apples? (36) If they want to make a smaller amount of juice, what is the smallest amount they can make so that the taste is the same?* Allow the students time to discuss their answers with a partner before inviting volunteers to share their answers. Ensure they understand that a single glass will use 1 orange for every 3 apples. Use the diagrams shown below to aid discussion.

Oranges		Apples
	for every	
6	for every	18
12	for every	36

$\times 2$  (left arrow)  $\times 2$  (right arrow)

Oranges		Apples
1	for every	3
6	for every	18
12	for every	36

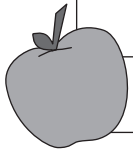
$\div 6$  (left arrow)  $\div 6$  (right arrow)

# Juicy Juice

Name \_\_\_\_\_

1. A juice bar makes a glass of tropical juice by mixing the juice of 1 orange with the juice of 4 apples. Complete the table below.

Number of glasses (repeats)	Number of oranges	Number of apples
1		
2		
3		
4		
5		



2. Look at the patterns across the table. Write a rule you can use to figure out the number of apples when you know the number of oranges.

\_\_\_\_\_

3. Look at the patterns down the table. Compare the 1st and 2nd repeats.

- a. Write how you can figure out the number of oranges in the 2nd repeat.

\_\_\_\_\_

- b. Write how you can figure out the number of apples in the 2nd repeat.

\_\_\_\_\_

4. Look at the patterns down the table. Compare the 1st and 3rd repeats.

- a. Write how you can figure out the number of oranges in the 3rd repeat.

\_\_\_\_\_

- b. Write how you can figure out the number of apples in the 3rd repeat.

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