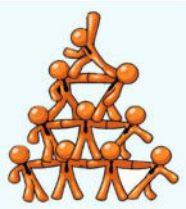
4-3: Learning Goals

- Let's use constants of proportionality to solve more problems.

4-3-1: Recipe Ratio

A recipe calls for $\frac{1}{2}$ cup sugar and 1 cup flour. Complete the table to show how much sugar and flour to use in different numbers of batches of the recipe.

sugar (cups)	flour (cups)
$\frac{1}{2}$	1
$\frac{3}{4}$	
	$1\frac{3}{4}$
1	
	$2\frac{1}{2}$



4-3-2: The Price of Rope

Two students are solving the same problem: At a hardware store, they can cut a length of rope off of a big roll, so you can buy any length you like. The cost for 6 feet of rope is $7.50. How much would you pay for 50 feet of rope, at this rate?

1. Kiran knows he can solve the problem this way.

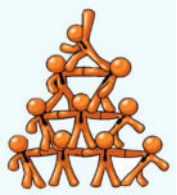
	length of rope (feet)	price of rope (dollars)	
$\cdot\frac{1}{6}$	6	7.50	$\cdot\frac{1}{6}$
	1	1.25	
$\cdot 50$	50		$\cdot 50$

What would be Kirans' answer?

2. Kiran wants to know if there is a more efficient way of solving the problem. Priya says she can solve the problem with only 2 rows in the table.

length of rope (feet)	price of rope (dollars)
6	7.50
50	

What do you think Priya's method is?



4-3-3: Swimming, Manufacturing, and Painting

1. Tyler swims at a constant speed, 5 meters every 4 seconds. How long does it take him to swim 114 meters?

distance (meters)	time (seconds)
5	4
114	

2. A factory produces 3 bottles of sparkling water for every 8 bottles of plain water. How many bottles of sparkling water does the company produce when it produces 600 bottles of plain water?

number of bottles of sparkling water	number of bottles of plain water

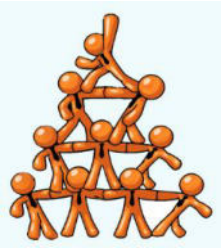
3. A certain shade of light blue paint is made by mixing $1\frac{1}{2}$ quarts of blue paint with 5 quarts of white paint. How much white paint would you need to mix with 4 quarts of blue paint?

4. For each of the previous three situations, write an equation to represent the proportional relationship.

4-3-4: Finishing the Race and More Orange Juice

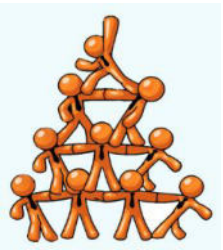
1. Lin runs $2\frac{3}{4}$ miles in $\frac{2}{5}$ of an hour. Tyler runs $8\frac{2}{3}$ miles in $\frac{4}{3}$ of an hour. How long does it take each of them to run 10 miles at that rate?

2. Priya mixes $2\frac{1}{2}$ cups of water with $\frac{1}{3}$ cup of orange juice concentrate. Diego mixes $1\frac{2}{3}$ cups of water with $\frac{1}{4}$ cup orange juice concentrate. How much concentrate should each of them mix with 100 cups of water to make juice that tastes the same as their original recipe? Explain or show your reasoning.



4-3: Lesson Synthesis

How can we use a table that only has two rows to solve a problem about a proportional relationship?



4-3: Learning Targets

- I can use a table with 2 rows and 2 columns to find an unknown value in a proportional relationship.
- When there is a constant rate, I can identify the two quantities that are in a proportional relationship.

4-3-5: Walnuts in Bulk

It costs \$3.45 to buy $\frac{3}{4}$ lb of chopped walnuts. How much would it cost to purchase 7.5 lbs of walnuts? Explain or show your reasoning.