

Ratio Route Map

Build tables, plot pairs, and compare rates.

GRADE 6 • 6.NR.4.2

6.NR.4.2 "Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios."

NAME _____

DATE _____

The big idea

Equivalent ratios multiply both quantities by the same factor. Keep units and column order consistent. An ordered pair (x, y) follows the horizontal and vertical axis labels.

Worked example

A recipe uses 2 liters of water for each batch. How much for 3 batches?

Multiply both quantities by 3. The table pairs batches with liters.

3 batches use 6 liters.

Batches	Water (L)
1	2
2	4
3	6

Plot and label all requested points. Use the ruled space for calculations and explanations.

1. Practice

Each batch uses 3 liters of juice. Fill the blank table cells. Explain how the quantities stay in the same ratio.

Batches	Juice (L)
1	
2	6
3	
5	

2. Practice

Use the table to compare the two carts. Are the distance-to-time ratios equivalent? Show a common unit rate.

Cart	Distance (m)	Time (s)
A	12	4
B	15	5

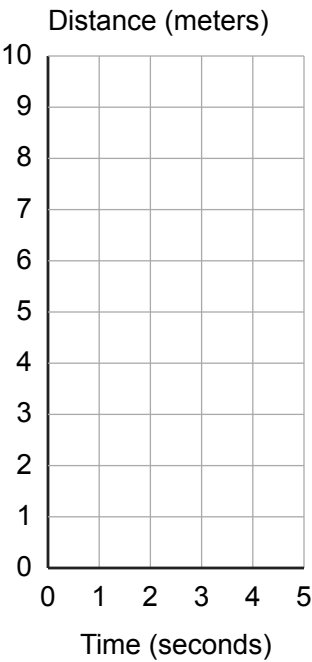
3. Practice

A cart travels 2 meters each second at a steady rate. Make a table for 1, 2, 3, and 4 seconds by filling BOTH columns. Use your table for Task 4.

Time (s)	Distance (m)

4. Practice

Plot the four pairs from your Task 3 table as points A, B, C, and D in time order. Describe how the distance changes each second.



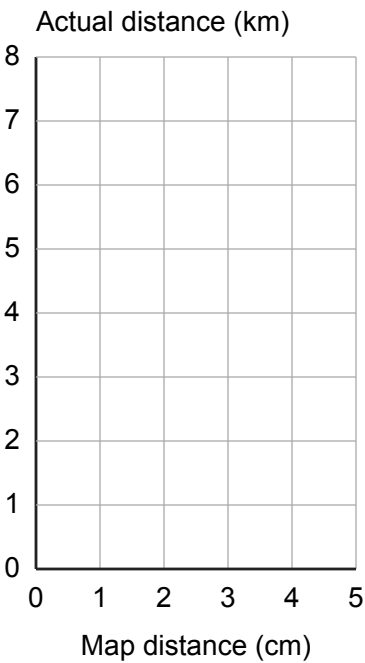
5. Apply

Two taps fill buckets steadily. Complete the table for 6 minutes. Which tap supplies more water in the same time? Use the completed table to justify your choice.

Tap	Known amount	At 6 min
A	4 L in 2 min	
B	6 L in 4 min	

6. Apply

On a trail map, each 1 cm represents 2 km. Plot A(1,2), B(2,4), and C(3,6), with centimeters on x and kilometers on y. Use the pattern to predict the actual distance for 4 cm.



7. Challenge

Ava starts with the ratio 2:3, adds 2 to both entries, and gets 4:5. She claims the ratios are equivalent. Is her rule valid? Give an equivalent ratio whose first entry is 4 and explain.

Require labeled plotted points and the completed student-built table. Equivalent scaling and unit-rate explanations are both valid. Graph ticks are one unit apart.

Task 1

1 batch: 3 L; 3 batches: 9 L; 5 batches: 15 L. Liters = 3 times batches.

Batches	Juice (L)
1	3
2	6
3	9
5	15

Task 2

Yes. A: $12 / 4 = 3$ m/s. B: $15 / 5 = 3$ m/s. Both travel 3 meters per second.

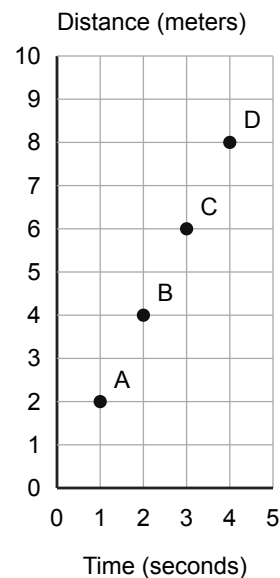
Task 3

Time (s), distance (m): (1,2), (2,4), (3,6), (4,8).

Time (s)	Distance (m)
1	2
2	4
3	6
4	8

Task 4

A(1,2), B(2,4), C(3,6), D(4,8). Distance increases by 2 meters each second.



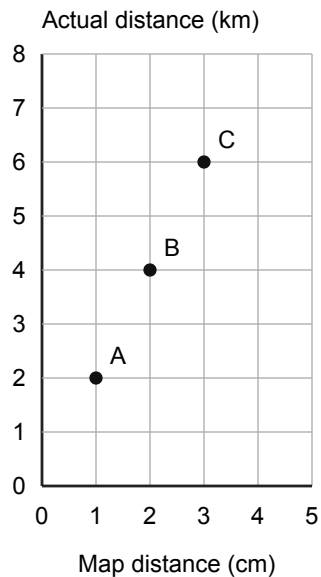
Task 5

Tap A: 12 L in 6 min. Tap B: 9 L in 6 min. Tap A supplies 3 L more in 6 min. A: $4 \times 3 = 12$ L; B: $6 \times 1.5 = 9$ L.

Tap	At 6 min
A	12 L
B	9 L

Task 6

A, B, C as shown; 4 cm represents 8 km because $4 \times 2 = 8$. Multiply map centimeters by 2 to get actual kilometers.

**Task 7**

No: 2:3 is not 4:5. An equivalent ratio is 4:6, found by multiplying BOTH entries of 2:3 by 2.