Rates and Percents

Lesson 4 Distance and Time

Standards 6.RP.A.3b

Learning target I can solve constant-speed problems using a rate per hour.

Materials Ratio tables, price labels, pencils, optional double number lines.

Lesson Flow 50 Minutes

0–5 Activate prior knowledge. Read the learning target. Ask students what they already know about distance and time. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. At a constant speed, distance = speed × time. Divide distance by time to find speed, or distance by speed to find time. Keep units consistent before calculating. Work through the two examples on the attached instruction page. Have students name the first step before showing it.

17–22 Guided practice. Revisit worked Example 2 with its solution covered. Students propose the next step and explain why it is valid; uncover and compare with the worked solution.

22–45 Independent classwork. Assign the attached 10 questions in order. Check items 1–3 for entry-level understanding, 4–6 for connected procedures, 7–8 for representation and explanation, and 9–10 for application or justification. Ask students to use the instruction-page notes area or extra grids for longer work.

45–50 Check understanding. Use classwork question 10 as an exit discussion: A bus travels at 25 km/h. How long does 75/2 km take? Compare the result with the answer key and ask a student to defend the method.

Support and Extension

Support Model item 1 together with the listed tools, then have students attempt item 2 independently. Watch rate units, reference wholes, and confusing percent with its decimal form.

Extension Ask students to solve a final item another way, draw a second representation, or create a related problem with a checked answer.

Next step Record which students can explain the target independently. Begin the next teaching session with a brief correction for any recurring error.

Name _____ Date _____

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Learning target I can solve constant-speed problems using a rate per hour.

Learn and Discuss

At a constant speed, distance = speed × time. Divide distance by time to find speed, or distance by speed to find time. Keep units consistent before calculating.

Example 1 A bus travels at 15 km/h. How long does 90 km take?
Solution 6 hours. Time = distance ÷ speed = 90 ÷ 15 = 6.
Example 2 A bus travels at 25 km/h. How long does 175/2 km take?
Solution 7/2 hours. Time = distance ÷ speed = 175/2 ÷ 25 = 7/2.

Classwork Show Your Work

Complete the 10 problems on the following page. Refer to the examples, draw models, and check your results.

My Notes or Second Method

Lesson 4 Distance and Time

Name _____ Show calculations, models, and units.

1. A cyclist travels 120 km in 6 hours at constant speed. Find the speed.

2. A bus travels at 40 km/h. How long does 120 km take?

3. A cyclist travels 150 km in 6 hours at constant speed. Find the speed.

4. A bus travels at 10 km/h. How long does 60 km take?

5. A cyclist travels 240 km in 6 hours at constant speed. Find the speed.

6. A bus travels at 30 km/h. How long does 120 km take?

7. A cyclist travels 25 km in 5/2 hours at constant speed. Find the speed and the distance in 4 hours.

8. A bus travels at 35 km/h. How long does 70 km take?

9. A cyclist travels 20 km in 1 hours at constant speed. Find the speed and the distance in 2 hours.

10. A bus travels at 25 km/h. How long does 75/2 km take?

Distance and Time

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1. 20 km/h
Reasoning Speed = 120 ÷ 6 = 20; distance = speed × time.

2. 3 hours
Reasoning Time = distance ÷ speed = 120 ÷ 40 = 3.

3. 25 km/h
Reasoning Speed = 150 ÷ 6 = 25; distance = speed × time.

4. 6 hours
Reasoning Time = distance ÷ speed = 60 ÷ 10 = 6.

5. 40 km/h
Reasoning Speed = 240 ÷ 6 = 40; distance = speed × time.

6. 4 hours
Reasoning Time = distance ÷ speed = 120 ÷ 30 = 4.

7. 10 km/h; 40 km
Reasoning Speed = 25 ÷ 5/2 = 10; distance = speed × time.

8. 2 hours
Reasoning Time = distance ÷ speed = 70 ÷ 35 = 2.

9. 20 km/h; 40 km
Reasoning Speed = 20 ÷ 1 = 20; distance = speed × time.

10. 3/2 hours
Reasoning Time = distance ÷ speed = 75/2 ÷ 25 = 3/2.