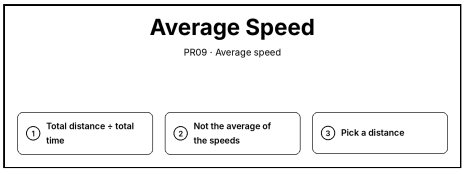
Average Speed: teacher script

PR09-V1 · PR09 Average speed · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 75 seconds as a video.

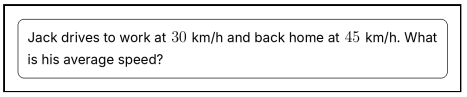
01



Say. Average speed. It is the total distance divided by the total time. Not the average of the speeds. A good start is to pick a distance.

Draw. Write the title “Average Speed” and the steps: 1. Total distance ÷ total time; 2. Not the average of the speeds; 3. Pick a distance.

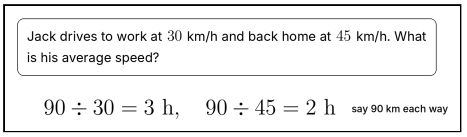
02



Say. Jack drives to work at 30 kilometres per hour, and back home at 45. What is his average speed?

Draw. Clear the board. Write “Jack drives to work at 30 km/h and back home at 45 km/h. What is his average speed?” in a box at the top.

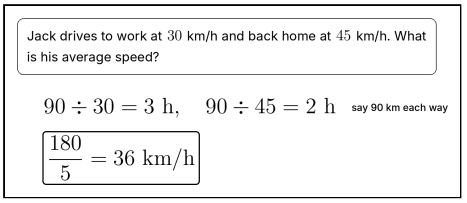
03



Say. Pick a distance: say 90 kilometres each way. That is 3 hours there and 2 hours back.

Draw. Write 90 ÷ 30 = 3 h, 90 ÷ 45 = 2 h on the next line. Beside it, write “say 90 km each way”.

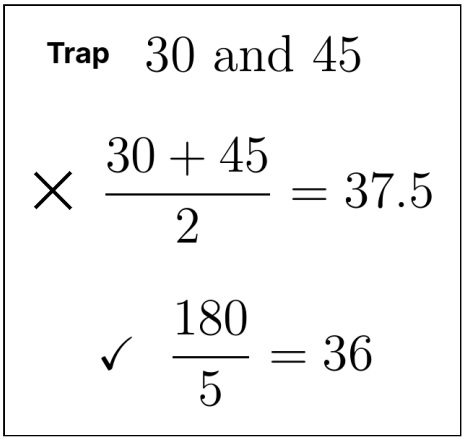
04



Say. 180 kilometres in 5 hours: 36 kilometres per hour.

Draw. Write 180/5 = 36 km/h and box it on the next line.

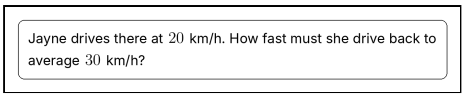
05



Say. Watch for the trap: averaging the speeds. Jack spends longer at the slower speed, so the average is closer to 30.

Draw. Clear the board. Write “Trap” and 30 and 45. Below, write (30 + 45)/2 = 37.5 and cross it out ×. Then write 180/5 = 36 with a tick ✓.

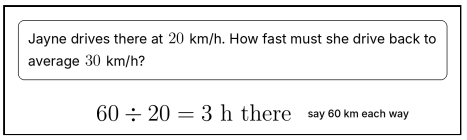
06



Say. Jayne drives there at 20 kilometres per hour. How fast must she drive back to average 30?

Draw. Clear the board. Write “Jayne drives there at 20 km/h. How fast must she drive back to average 30 km/h?” in a box at the top.

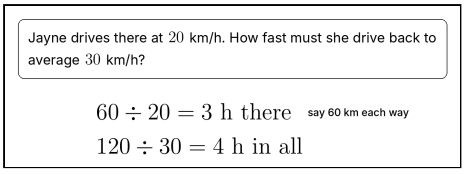
07



Say. Say 60 kilometres each way: 3 hours there.

Draw. Write 60 ÷ 20 = 3 h there on the next line. Beside it, write “say 60 km each way”.

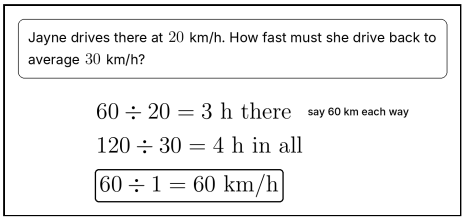
08



Say. The whole trip at an average of 30 takes 120 divided by 30: 4 hours.

Draw. Write 120 ÷ 30 = 4 h in all on the next line.

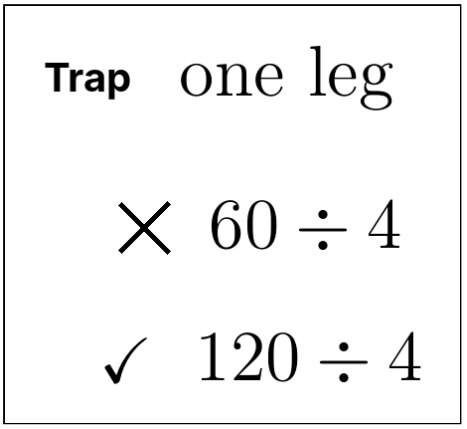
09



Say. That leaves 1 hour for the 60 kilometres back: 60 kilometres per hour.

Draw. Write 60 ÷ 1 = 60 km/h and box it on the next line.

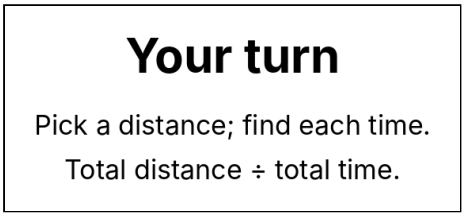
10



Say. Watch for the second trap: one leg with the whole trip. Total distance goes with total time.

Draw. Clear the board. Write “Trap” and one leg. Below, write 60 ÷ 4 and cross it out ×. Then write 120 ÷ 4 with a tick ✓.

11



Say. Now it is your turn. Pick a distance, find each time, then divide total distance by total time.

Draw. Point to today’s activity: Pick a distance; find each time. Total distance ÷ total time.