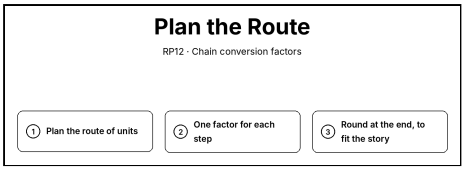
Plan the Route: teacher script

RP12-V1 · RP12 Chain conversion factors · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 102 seconds as a video.

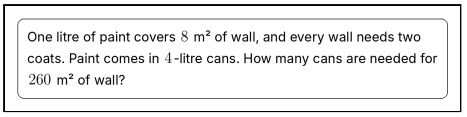
01



Say. Plan the route. Plan the route of units first. Then use one factor for each step. And round at the end, to fit the story.

Draw. Write the title “Plan the Route” and the steps: 1. Plan the route of units; 2. One factor for each step; 3. Round at the end, to fit the story.

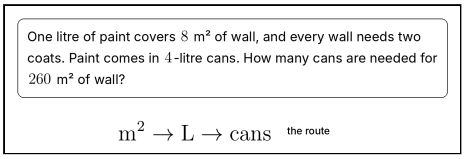
02



Say. One litre of paint covers 8 square metres of wall, and every wall needs two coats. Paint comes in 4 litre cans. How many cans are needed for 260 square metres of wall?

Draw. Clear the board. Write “One litre of paint covers 8 m² of wall, and every wall needs two coats. Paint comes in 4-litre cans. How many cans are needed for 260 m² of wall?” in a box at the top.

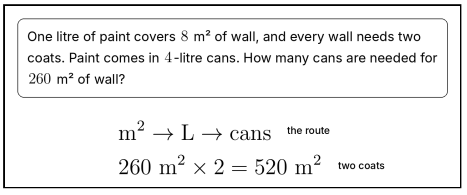
03



Say. The route: square metres of wall, then litres of paint, then cans.

Draw. Write m² \to L \to cans on the next line. Beside it, write “the route”.

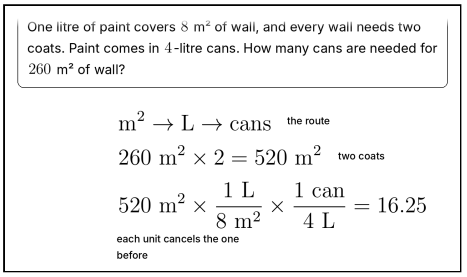
04



Say. Two coats, so double the area: 520 square metres.

Draw. Write 260 m² × 2 = 520 m² on the next line. Beside it, write “two coats”.

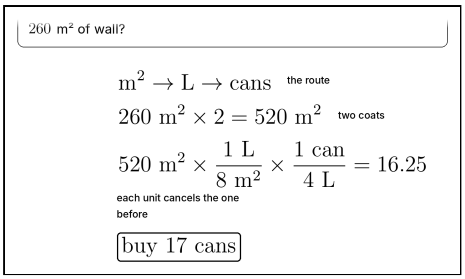
05



Say. One factor for each step, so each unit cancels the one before. 520 divided by 8, divided by 4, is 16.25 cans.

Draw. Write 520 m² × 1 L/(8 m²) × 1 can/(4 L) = 16.25 on the next line. Beside it, write “each unit cancels the one before”.

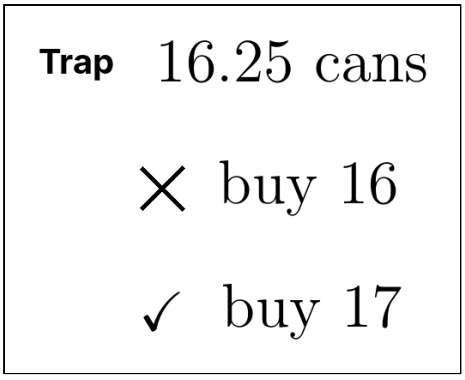
06



Say. You can't buy part of a can, so round up: buy 17. 16 cans would paint only 256 square metres.

Draw. Write buy 17 cans and box it on the next line.

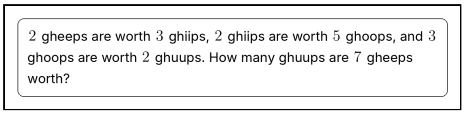
07



Say. Watch for the trap: rounding down when the story needs whole cans. 16 cans leave some wall unpainted.

Draw. Clear the board. Write “Trap” and 16.25 cans. Below, write buy 16 and cross it out ×. Then write buy 17 with a tick ✓.

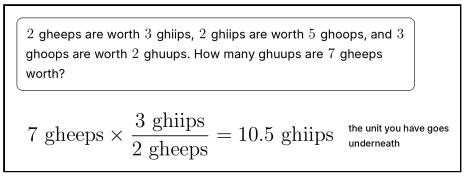
08



Say. 2 gheeps are worth 3 ghiips, 2 ghiips are worth 5 ghoops, and 3 ghoops are worth 2 ghuups. How many ghuups are 7 gheeps worth?

Draw. Clear the board. Write “2 gheeps are worth 3 ghiips, 2 ghiips are worth 5 ghoops, and 3 ghoops are worth 2 ghuups. How many ghuups are 7 gheeps worth?” in a box at the top.

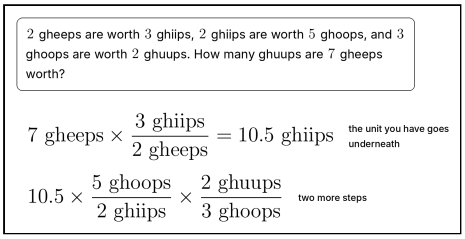
09



Say. Each time, the unit you have goes underneath. 7 gheeps times 3 ghiips over 2 gheeps is 10.5 ghiips.

Draw. Write 7 gheeps × 3 ghiips/(2 gheeps) = 10.5 ghiips on the next line. Beside it, write “the unit you have goes underneath”.

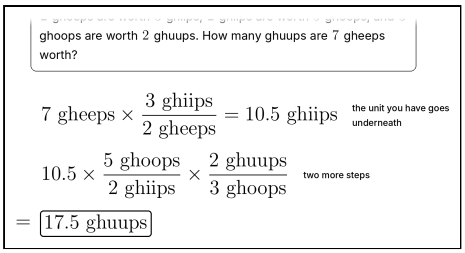
10



Say. Then ghiips into ghoops, and ghoops into ghuups.

Draw. Write 10.5 × 5 ghoops/(2 ghiips) × 2 ghuups/(3 ghoops) on the next line. Beside it, write “two more steps”.

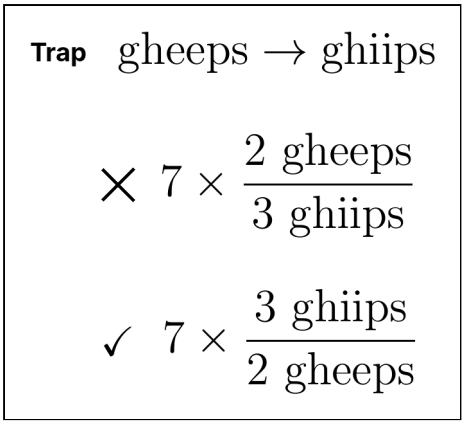
11



Say. 10.5 times 5 over 2, times 2 over 3, is 17.5 ghuups.

Draw. Write = 17.5 ghuups and box it on the next line.

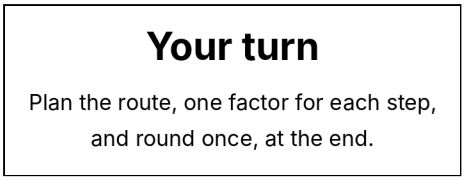
12



Say. Watch for the trap: one factor upside down. Then the gheeps don't cancel. Check that every unit is crossed out once on top and once underneath.

Draw. Clear the board. Write “Trap” and gheeps \to ghiips. Below, write 7 × 2 gheeps/(3 ghiips) and cross it out ×. Then write 7 × 3 ghiips/(2 gheeps) with a tick ✓.

13



Say. Now it is your turn. Plan the route, use one factor for each step, and round once, at the end.

Draw. Point to today’s activity: Plan the route, one factor for each step, and round once, at the end.