Woodchucks and Workers: teacher script

PR07-V1 · PR07 Joint proportion stories · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 67 seconds as a video.

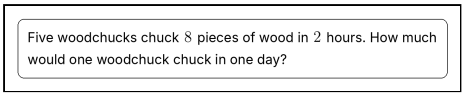
01



Say. Woodchucks and workers. The work done is proportional to the workers and to the time. Write before equals after. And keep the same units.

Draw. Write the title “Woodchucks and Workers” and the steps: 1. Work done ∝ workers × time; 2. Before = after; 3. Same units.

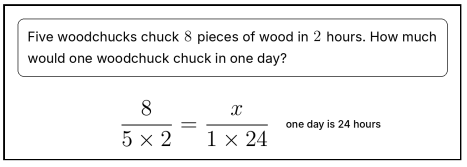
02



Say. Five woodchucks chuck 8 pieces of wood in 2 hours. How much would one woodchuck chuck in one day?

Draw. Clear the board. Write “Five woodchucks chuck 8 pieces of wood in 2 hours. How much would one woodchuck chuck in one day?” in a box at the top.

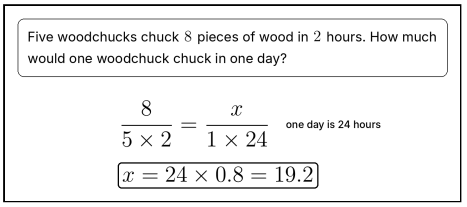
03



Say. Wood over woodchucks times hours stays the same. One day is 24 hours.

Draw. Write 8/(5 × 2) = x/(1 × 24) on the next line. Beside it, write “one day is 24 hours”.

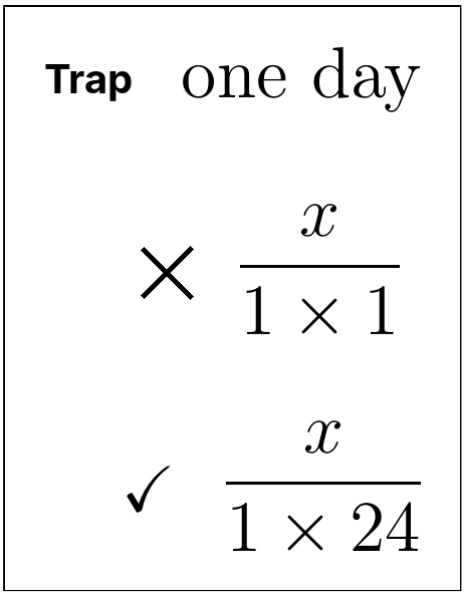
04



Say. So x is 24 times 0.8: 19.2 pieces of wood.

Draw. Write x = 24 × 0.8 = 19.2 and box it on the next line.

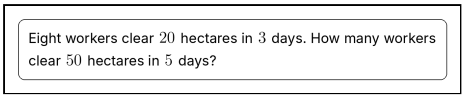
05



Say. Watch for the trap: mixing days and hours. The other time is in hours, so a day is 24.

Draw. Clear the board. Write “Trap” and one day. Below, write x/(1 × 1) and cross it out ×. Then write x/(1 × 24) with a tick ✓.

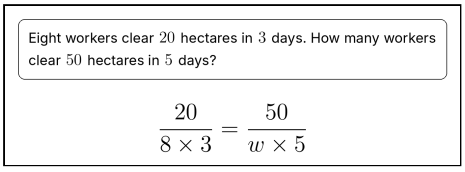
06



Say. Eight workers clear 20 hectares in 3 days. How many workers are needed to clear 50 hectares in 5 days?

Draw. Clear the board. Write “Eight workers clear 20 hectares in 3 days. How many workers clear 50 hectares in 5 days?” in a box at the top.

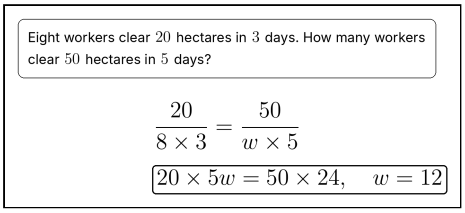
07



Say. Hectares over workers times days stays the same.

Draw. Write 20/(8 × 3) = 50/(w × 5) on the next line.

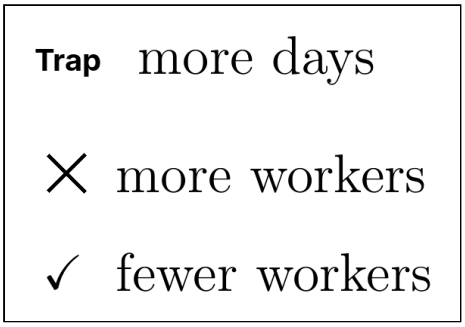
08



Say. Cross-multiply and solve: 12 workers.

Draw. Write 20 × 5w = 50 × 24, w = 12 and box it on the next line.

09



Say. Watch for the second trap: a pair the wrong way. More days need fewer workers for the same field, but more workers clear more land.

Draw. Clear the board. Write “Trap” and more days. Below, write more workers and cross it out ×. Then write fewer workers with a tick ✓.

10

Your turn

Work ÷ (workers × time) stays the same.
Hours with hours.

Say. Now it is your turn. Work over workers times time stays the same, and keep hours with hours.

Draw. Point to today’s activity: Work ÷ (workers × time) stays the same. Hours with hours.