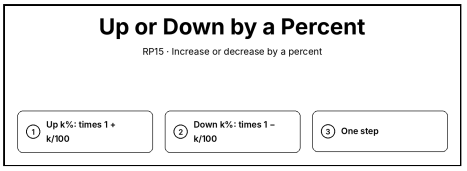
Up or Down by a Percent: teacher script

RP15-V1 · RP15 Increase or decrease by a percent · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 94 seconds as a video.

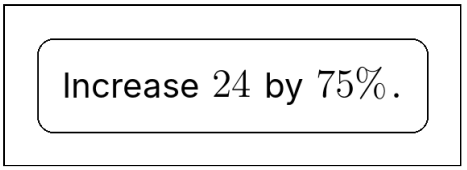
01



Say. Up or down by a percent. To go up by k percent, multiply by 1 plus k over 100. To go down, multiply by 1 minus k over 100. It is one step.

Draw. Write the title “Up or Down by a Percent” and the steps: 1. Up k%: times 1 + k/100; 2. Down k%: times 1 − k/100; 3. One step.

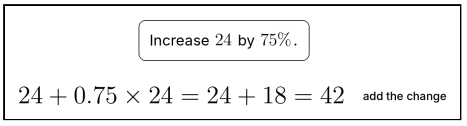
02



Say. Increase 24 by 75 percent.

Draw. Clear the board. Write “Increase 24 by 75\%.” in a box at the top.

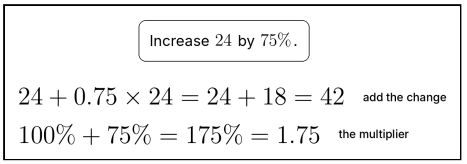
03



Say. Add the change: 75 percent of 24 is 18, and 24 plus 18 is 42.

Draw. Write 24 + 0.75 × 24 = 24 + 18 = 42 on the next line. Beside it, write “add the change”.

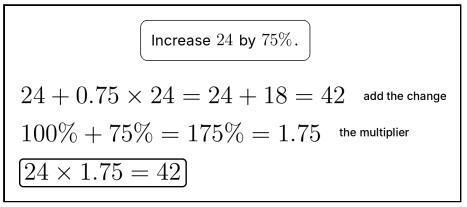
04



Say. Or in one step: 100 percent plus 75 percent is 175 percent, that is 1.75.

Draw. Write 100\% + 75\% = 175\% = 1.75 on the next line. Beside it, write “the multiplier”.

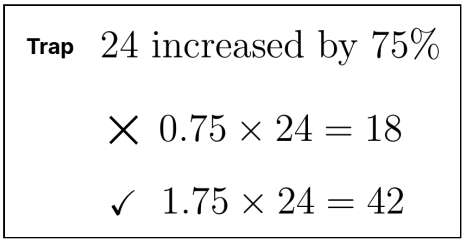
05



Say. 24 times 1.75 is 42, the same answer.

Draw. Write 24 × 1.75 = 42 and box it on the next line.

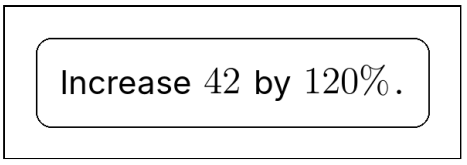
06



Say. Watch for the trap: giving only the change. 18 is the increase. Keep the whole too: 42.

Draw. Clear the board. Write “Trap” and 24 increased by 75\%. Below, write 0.75 × 24 = 18 and cross it out ×. Then write 1.75 × 24 = 42 with a tick ✓.

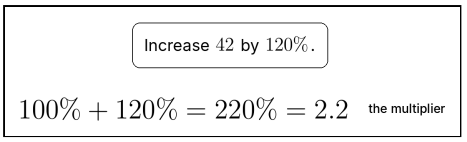
07



Say. Increase 42 by 120 percent.

Draw. Clear the board. Write “Increase 42 by 120\%.” in a box at the top.

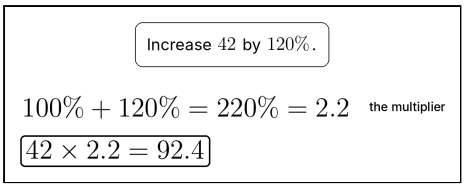
08



Say. 100 percent plus 120 percent is 220 percent, so the multiplier is 2.2.

Draw. Write 100\% + 120\% = 220\% = 2.2 on the next line. Beside it, write “the multiplier”.

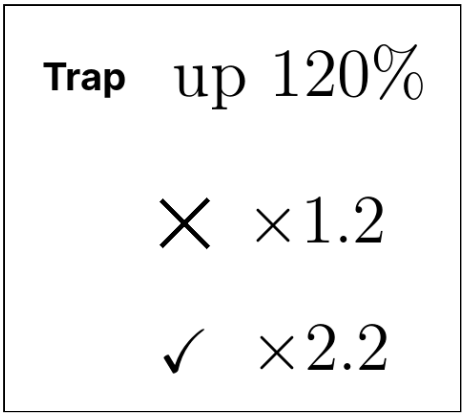
09



Say. 42 times 2.2 is 92.4.

Draw. Write 42 × 2.2 = 92.4 and box it on the next line.

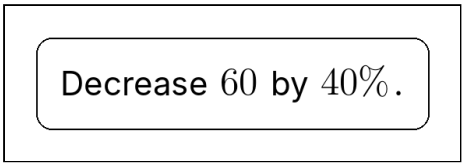
10



Say. Watch for the trap: the wrong multiplier. Times 1.2 is only a 20 percent rise. A 120 percent rise is times 2.2.

Draw. Clear the board. Write “Trap” and up 120\%. Below, write × 1.2 and cross it out ×. Then write × 2.2 with a tick ✓.

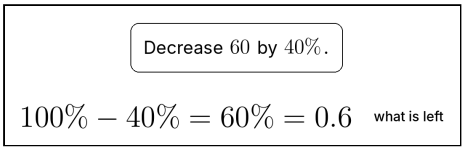
11



Say. Decrease 60 by 40 percent.

Draw. Clear the board. Write “Decrease 60 by 40\%.” in a box at the top.

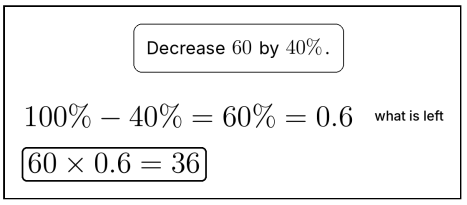
12



Say. A decrease leaves the rest. 100 percent minus 40 percent is 60 percent, that is what is left: 0.6.

Draw. Write 100\% − 40\% = 60\% = 0.6 on the next line. Beside it, write “what is left”.

13



Say. 60 times 0.6 is 36.

Draw. Write 60 × 0.6 = 36 and box it on the next line.

14

Your turn

Find the multiplier, then multiply once.

Say. Now it is your turn. Find the multiplier, then multiply once.

Draw. Point to today’s activity: Find the multiplier, then multiply once.