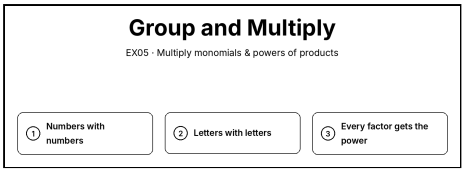
Group and Multiply: teacher script

EX05-V1 · EX05 Multiply monomials & powers of products · teachers only. Without a screen, read each Say line and draw each Draw step on the board. About 58 seconds as a video.

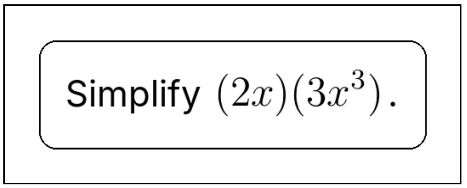
01



Say. Group and multiply. In a product, multiply numbers with numbers and letters with letters. And when a product is raised to a power, every factor gets the power.

Draw. Write the title “Group and Multiply” and the steps: 1. Numbers with numbers; 2. Letters with letters; 3. Every factor gets the power.

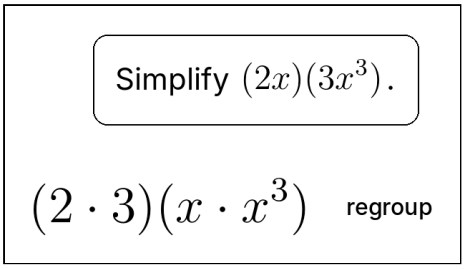
02



Say. Simplify two x times three x cubed.

Draw. Clear the board. Write “Simplify (2x)(3x³).” in a box at the top.

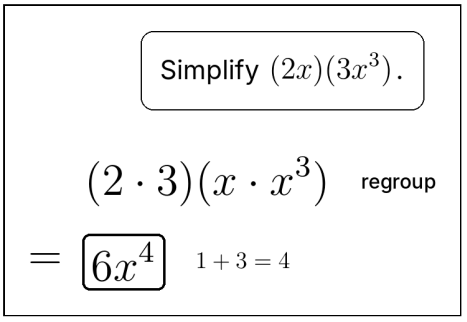
03



Say. You can multiply in any order, so regroup: two times three, and x times x³.

Draw. Write (2 · 3)(x · x³) on the next line. Beside it, write “regroup”.

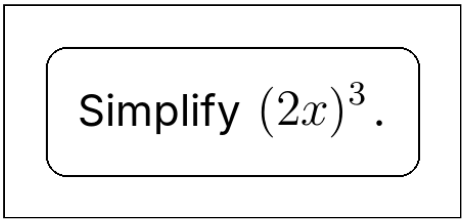
04



Say. That makes 6x⁴.

Draw. Write = 6x⁴ and box it on the next line. Beside it, write “1 + 3 = 4”.

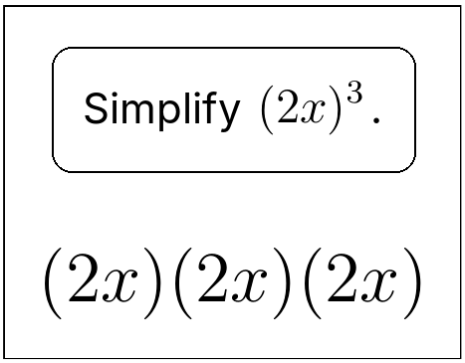
05



Say. Now two x, all cubed.

Draw. Clear the board. Write “Simplify (2x)³.” in a box at the top.

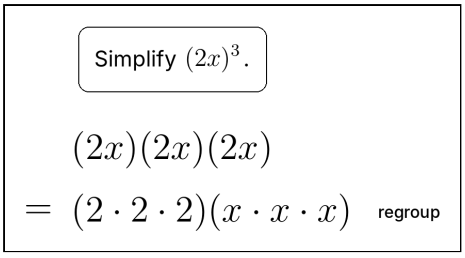
06



Say. Write it out: three factors of two x.

Draw. Write (2x)(2x)(2x) on the next line.

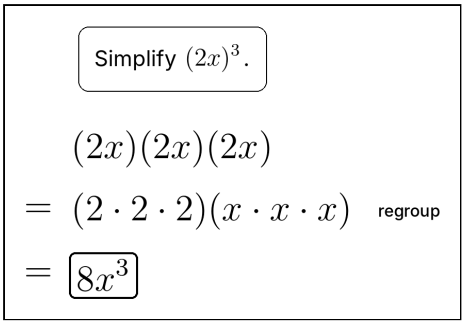
07



Say. Regroup the numbers and the letters.

Draw. Write = (2 · 2 · 2)(x · x · x) on the next line. Beside it, write “regroup”.

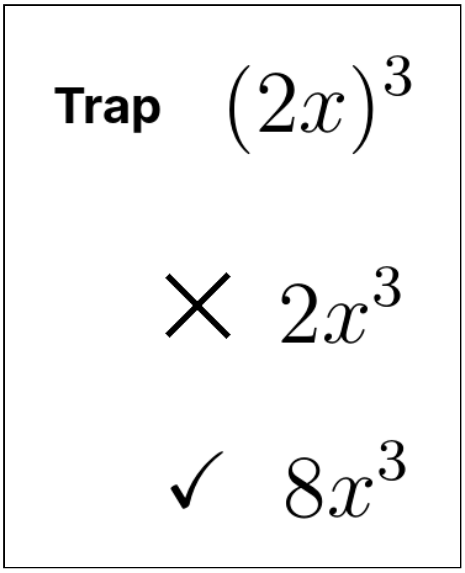
08



Say. Two cubed is eight, so $8x^3$.

Draw. Write = $8x^3$ and box it on the next line.

09



Say. Watch for the trap: cubing only the letter. Two x, all cubed, is not $2x^3$: the two is cubed too.

Draw. Clear the board. Write “Trap” and $(2x)^3$. Below, write $2x^3$ and cross it out ×. Then write $8x^3$ with a tick ✓.

10

Trap $(2+x)^3$

$\times\ 8+x^3$

✓ $x=1\colon\ (2+1)^3=27\neq 9=8+1^3$

Say. But this only works for products. Two plus x, all cubed, is not 8 + x³: try x = 1, which gives 27 and 9.

Draw. Clear the board. Write “Trap” and (2 + x)³. Below, write 8 + x³ and cross it out ×. Then write x = 1: (2 + 1)³ = 27 ≠ 9 = 8 + 1³ with a tick ✓.

11

Your turn

Numbers with numbers, letters with letters, every factor gets the power

Say. Now it is your turn. Regroup, and give every factor the power.

Draw. Point to today’s activity: Numbers with numbers, letters with letters, every factor gets the power