Part, Whole, and Percent

Three pieces: the whole (all of it), the part (some of it), the percent (the share out of 100). One is always missing. Name it, then use the bar.

1 THE VOCABULARY
Words we use

Whole all of it, 100 percent.

Part some of it.

Percent of multiply by the percent as a decimal.

Proportion part over whole equals percent over 100.

- Watch out for these.
- Multiplying when the whole is the missing piece. Build up from 10 percent instead.
- Writing whole over part. The part goes on top.
- Forgetting to turn the percent into a decimal before multiplying.
- Skipping the first question: which piece is missing?

2 THE METHOD
Find the missing piece

1. NAME THE PIECES which number is the whole, which is the part, which is the percent, and which is missing?
2. PART MISSING whole times the percent as a decimal, or build from 10 percent.
3. PERCENT MISSING part over whole, then to a decimal, then two places right.
4. WHOLE MISSING find 10 percent (or 1 percent) from the part, then build to 100 percent.

WHY ONE MULTIPLIER DOES IT

The part is the whole times the same number every time: the percent as a decimal. That number is the unit rate from Unit 1, so every percent problem is a proportional relationship.



Elle, math-speak: A proportional relationship always multiplies by the same number, the unit rate.



Finn, plain English: Percent means out of 100. A percent is a unit rate for 100 instead of for 1: 30 percent means 30 for every 100.

3 THREE PROBLEMS
One of each kind

40% of 35: 10% is 3.5, so 40% is 14; or $35 \times 0.40 = 14$	the part is missing
$\frac{18}{24} = \frac{3}{4} = 0.75 = 75\%$	the percent is missing
30% is \$45, so 10% is \$15, so 100% is \$150	the whole is missing
$\frac{45}{\text{whole}} = \frac{30}{100}$	the same reasoning as a proportion

THE EXIT TICKET

15% of 60: 10% is 6, 5% is 3, so 9.

SAY IT OUT LOUD

Which piece is missing?