



Multi-digit division

The standard algorithm, and what the leftovers mean

- Today: divide big numbers accurately — and decide what to do with a remainder.

$5040 \div 12$

- Try it in your head for ten seconds.

Turn & talk: is the answer 42 or 420?

Every place gets a digit

- Divide $\rightarrow$ multiply $\rightarrow$ subtract $\rightarrow$ bring down. Repeat.
- If a partial dividend is too small to divide, write a **0** and keep going.

$5040 \div 12 = 420$

- $50 \div 12 = 4$ (48, r2)
- $24 \div 12 = 2$
- $0 \div 12 = 0$ ← write the zero

Dropping that zero turns 420 into 42.

What do I do with the remainder?

- 1250 students, buses of 48 $\rightarrow$ 26 r2 $\rightarrow$ **27 buses** (round UP — nobody walks)
- 980 books, full boxes of 32 $\rightarrow$ 30 r20 $\rightarrow$ **30 boxes**, 20 left (round DOWN)

The context decides, not the math.

Your turn

- Compute $1274 \div 14$.
- Thumbs up when you have it.

Always check

- Estimate first: $4224 \div 32 \approx 4200 \div 30 \approx 140$
- Multiply back: $\text{quotient} \times \text{divisor} + \text{remainder} = \text{dividend}$

A lost place value shows up instantly.

Now you

- → In-class practice sheet