HCF or LCM: flowchart

Planner week 6 · Which one? Follow the arrows

HCF or LCM

What does the question want?
biggest that goes into both, or when they next happen together?

Biggest into both → **HCF: highest common factor**

Find the HCF of 12 and 18. Sharing into equal groups.

1. Factors of 12: 1, 2, 3, 4, 6, 12
2. Factors of 18: 1, 2, 3, 6, 9, 18
3. Biggest in both: **6**

✓ HCF ≤ the smaller number

Next together → **LCM: lowest common multiple**

Find the LCM of 4 and 6. When will they happen together again?

1. Multiples of 4: 4, 8, 12, 16 …
2. Multiples of 6: 6, 12, 18 …
3. First in both: **12**

✓ LCM ≥ the bigger number

Are the numbers big?
too big to list

No → **Check**
HCF ≤ smaller ≤ LCM

Yes

Prime factors and a Venn diagram: 60 = 2 × 2 × 3 × 5 · 84 = 2 × 2 × 3 × 7
Shared primes in the middle · HCF = middle = 2 × 2 × 3 = **12** · LCM = everything = 5 × 12 × 7 = **420**

The big question

Do I need the **biggest number that goes into both** (HCF) or the **first time they meet** (LCM)?

Sharing into groups → HCF
Buses, lights, beeps → LCM

Watch out

- Mixing up factors and multiples.
- Small numbers: just list them.
- Check: your LCM divides by both numbers.
- Powers: HCF takes the lowest powers, LCM the highest.