Name _____ Date _____

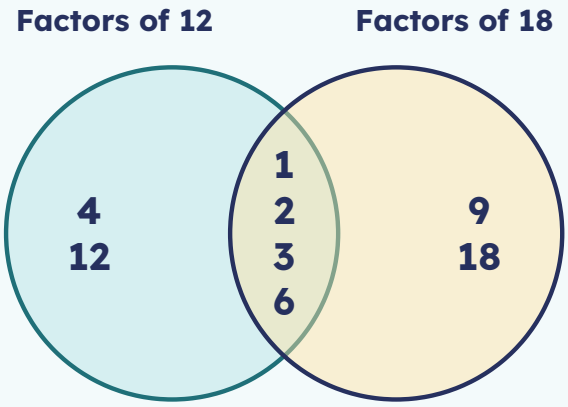
Common factors

Find the factors two numbers share, and the highest one.

1 Learn



A **factor** divides into a number exactly, with nothing left over. A **common factor** divides into **both** numbers. The biggest one is the **highest common factor** (HCF).



The middle holds the **common factors**: 1, 2, 3 and 6.

The highest is **6**, so the HCF of 12 and 18 is **6**.

Find the common factors of 12 and 18

1. Factor pairs of 12: **1 × 12, 2 × 6, 3 × 4**. Factors: 1, 2, 3, 4, 6, 12.
2. Factor pairs of 18: **1 × 18, 2 × 9, 3 × 6**. Factors: 1, 2, 3, 6, 9, 18.
3. Ring the numbers in **both** lists: 1, 2, 3, 6. The highest common factor is **6**.

Flip's tip: find factors in **pairs**, starting with 1 × the number. Try 2, 3, 4… in order. When the pairs start to repeat, stop: you've found them all.

Warm up: complete the factor pairs of 24.

1 × ☐ **2 ×** ☐ **3 ×** ☐ **4 ×** ☐

Grown-ups: factors divide into a number; multiples are in its times table. A quick check: factors of 12 are never bigger than 12. If your child lists 24 as a factor of 12, ask "Does 24 fit into 12?"

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2 Try it together a child and a grown-up, about 10 minutes



Button rectangles

You need: about 20 small things (buttons, dry pasta or coins) and a pencil.

1. Count out **12**. Make a rectangle with equal rows. 2 rows of 6 is the factor pair **2 × 6**.
2. Make every rectangle you can with 12 (a single line counts: 1 × 12). Write the factor pairs.
3. Do the same with **18**.
4. Which row lengths worked for **both**? Those are the common factors.



2 rows of 6



3 rows of 4

Number	Factor pairs (rectangles)	All its factors
12		
18		

Common factors of 12 and 18: _____ HCF: _____

Grown-ups: next, pick two numbers from 10 to 30 (from a calendar or a number plate) and find their common factors together.

3 Practise

A. Draw a ring round every factor of **16**.

1 2 3 4 5 6 8 10 12 16 32

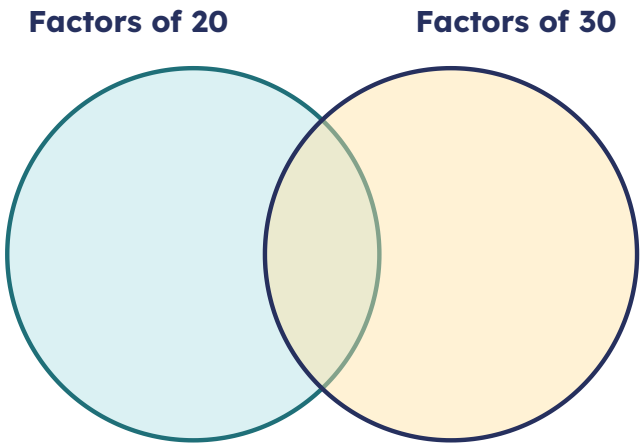
B. Find the highest common factor of each pair.

Numbers	8 and 12	15 and 25	14 and 21	16 and 24	9 and 10
HCF					

Common factors

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C. Write the factors of 20 and of 30 in the Venn diagram. Find the HCF.



HCF of 20 and 30: ☐

D. True or false? Write **T** or **F**.

4 is a factor of 20.		1 is a factor of every whole number.	
20 is a factor of 4.		The HCF of 6 and 12 is 12.	

E. Write two numbers that have a highest common factor of **5**. Explain how you know.

Challenge

Ava says the common factors of 12 and 18 are **1, 2, 3, 4, 6 and 9**. Is she right? Which numbers should she take out, and why?

I can... Tick when you can.

- ☐ find all the factors of a number by working in pairs
- ☐ find the factors that two numbers share
- ☐ find the highest common factor of two numbers