Prime factors

A factor divides exactly. A multiple is produced by multiplying.

Write 84 as a product of prime factors.

$84 = 2 \times 42$	Split off a factor of 2.
$84 = 2 \times 2 \times 21$	Split 42 again.
$84 = 2 \times 2 \times 3 \times 7$	Stop when every factor is prime.

$84 = 2^2 \times 3 \times 7$

Prime numbers

A prime has exactly two positive factors: 1 and itself. The number 1 is not prime.

Highest common factor and lowest common multiple

Use the prime powers to see what the two numbers share.

Find the HCF and LCM of 24 and 36.	
$24 = 2^3 \times 3$	Factorise 24.
$36 = 2^2 \times 3^2$	Factorise 36.
$2^2 \times 3 = 12$	HCF: take the smaller power of each common prime.
$2^3 \times 3^2 = 72$	LCM: take the largest power of each prime present.
$\text{HCF} = 12, \quad \text{LCM} = 72$	

JUNIOR CYCLE HIGHER LEVEL · CHAPTER PRACTICE

Factors and Multiples

Try the questions before opening the separate answer key. Show one step per line.

2.1 · Fluency

Write 90 as a product of prime factors.

2.2 · Variation

Find the HCF and LCM of 24 and 36.

2.3 · Choose a method

Two buses leave together, then every 18 and 24 minutes. When do they next leave together?

Check your work: are the sign, units and level of accuracy appropriate?