

# Prime Factorisation

5th Grade

Every number breaks into primes in exactly one way.

*A factor tree splits a number until only primes are left.*

## **SPLIT INTO ANY TWO FACTORS**

**1**

$36 = 4 \times 9$ . Any pair works — you end up in the same place.

## **KEEP SPLITTING**

**2**

$4 = 2 \times 2$  and  $9 = 3 \times 3$ . Circle a branch when it reaches a prime.

## **COLLECT THE PRIMES**

**3**

$36 = 2 \times 2 \times 3 \times 3$ .

## **WRITE IT WITH EXPONENTS**

**4**

$36 = 2^2 \times 3^2$ .

### **WORKED**

$$60 = 6 \times 10 = (2 \times 3) \times (2 \times 5) = 2^2 \times 3 \times 5$$

Start with  $4 \times 15$  instead and you still get  $2^2 \times 3 \times 5$

Every whole number above 1 has exactly one prime factorisation. That is why it is useful.