

As outcomes, Year 8 pupils should, for example:

Use vocabulary from previous year and extend to: prime factor decomposition...

Apply [tests of divisibility](#) for 12, 15, 18... by applying two simpler tests. For example, for:

- 15 the number is divisible by 3 and divisible by 5;
- 18 the number is even and divisible by 9.

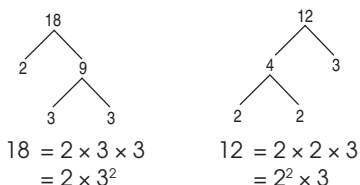
Use a **calculator** to explore divisibility. For example:

- Is 2003 a prime number?

2003/7	286.1428571
2003/11	182.0909091
2003/13	154.0769231

Find the prime factor decomposition of a number.

Use factor trees to find [prime factors](#) and write non-prime numbers as the products of prime factors. For example, $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$.



Divide by prime numbers, in ascending order, to find all the prime factors of a non-prime number. Write the number as a product of prime factors.

2	24
2	12
2	6
3	3
	1

$24 = 2 \times 2 \times 2 \times 3$
 $= 2^3 \times 3$

2	180
2	90
3	45
3	15
5	5
	1

$180 = 2 \times 2 \times 3 \times 3 \times 3 \times 5$
 $= 2^2 \times 3^3 \times 5$

Use factors when appropriate to calculate, as in:

$64 \times 75 = 64 \times 25 \times 3 = 1600 \times 3 = 4800$

$\sqrt{576} = \sqrt{(3 \times 3 \times 8 \times 8)} = 3 \times 8 = 24$

[Link to cancelling fractions \(pages 60-3\).](#)

As outcomes, Year 9 pupils should, for example: