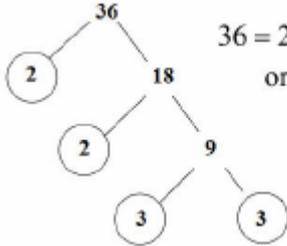


Year 8 Knowledge Organisers Unit 1

Topic: Prime factors

Topic/Skill	Definition/Tips	Example
1. Multiple	The result of multiplying a number by an integer. The times tables of a number.	The first five multiples of 7 are: 7, 14, 21, 28, 35
2. Factor	A number that divides exactly into another number without a remainder. It is useful to write factors in pairs	The factors of 18 are: 1, 2, 3, 6, 9, 18 The factor pairs of 18 are: 1, 18 2, 9 3, 6
3. Lowest Common Multiple (LCM)	The smallest number that is in the times tables of each of the numbers given.	The LCM of 3, 4 and 5 is 60 because it is the smallest number in the 3, 4 and 5 times tables.
4. Highest Common Factor (HCF)	The biggest number that divides exactly into two or more numbers.	The HCF of 6 and 9 is 3 because it is the biggest number that divides into 6 and 9 exactly.
5. Prime Number	A number with exactly two factors . A number that can only be divided by itself and one. The number 1 is not prime , as it only has one factor, not two.	The first ten prime numbers are: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
6. Prime Factor	A factor which is a prime number.	The prime factors of 18 are: 2, 3
7. Product of Prime Factors	Finding out which prime numbers multiply together to make the original number. Use a prime factor tree . Also known as 'prime factorisation'.	 $36 = 2 \times 2 \times 3 \times 3$ or $2^2 \times 3^2$
8. Square Number	The number you get when you multiply a number by itself .	1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225... $9^2 = 9 \times 9 = 81$
9. Square Root	The number you multiply by itself to get another number. The reverse process of squaring a number.	$\sqrt{36} = 6$ because $6 \times 6 = 36$
10. Solutions to $x^2 = \dots$	Equations involving squares have two solutions , one positive and one negative .	Solve $x^2 = 25$ $x = 5$ or $x = -5$ This can also be written as $x = \pm 5$

11. Cube Number	The number you get when you multiply a number by itself and itself again.	1, 8, 27, 64, 125... $2^3 = 2 \times 2 \times 2 = 8$
12. Cube Root	The number you multiply by itself and itself again to get another number. The reverse process of cubing a number.	$\sqrt[3]{125} = 5$ because $5 \times 5 \times 5 = 125$
13. Powers of...	The powers of a number are that number raised to various powers.	The powers of 3 are: $3^1 = 3$ $3^2 = 9$ $3^3 = 27$ $3^4 = 81$ etc.