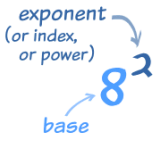
Bedford Free School Yr.9 Autumn Term

Place value		
Population	The number of people or objects in a whole group.	The population of the UK is the number of people in the UK.
Integer	Positive or negative whole number, including 0.	-4, 16, 305, 0
Sum	Add values together	The sum of 2, 6 and 1 is 9.
Evaluate	Calculate the value of something.	If I evaluate 12x3-10, I get 26.
Numerals	A symbol that stands for a number.	300 is 'three hundred' in numerals.
Digits	A single symbol that stands for a number. Our numbers are made from a collection of digits.	592 is a 3-digit number.
Million	1 followed by six zeroes	1,000,000
Billion	1 followed by nine zeroes	1,000,000,000
Trillion	1 followed by twelve zeroes. It is equivalent to a million millions!	1,000,000,000,000
Partition	Splitting a number into smaller parts, added together	419 = 400 + 10 + 9 3708 = 3000 + 700 + 8
Inequality	When two expressions are not equal in value	14-6 > 3+2
<	Less than	5 < 7
>	Greater than	7 > 5
Ascending	From smallest to greatest (going up)	1, 6, 10, 14
Descending	From greatest to smallest (going down)	16, 13, 9, 8, 1
Exponent	The exponent of a number says how many times to use that number in a multiplication. It is written as a small number to the right and above the base number.	
Index	Index is another word for exponent.	
Power	Power is another word for exponent.	
Base	The number that is going to be raised to an index or power.	
Googol	1 followed by a hundred zeroes.	Too long to write!

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Sequences		
Nth term	The rule to a sequence	e.g 2,4,6,8,…the rule is 2n e.g 3,5,7,9…the rule is 2n + 1
Term	The number in the sequence	5,7,9,11…the 2nd term is 7
Square numbers	Multiply numbers by itself	1,4,9,16,25,36……
Triangular numbers	Numbers made by making a triangular pattern from dots	1,3,6,10,15,21…
Cube numbers	Multiply a number by itself three times	E.g 1^3 = 1x1x1 = 1
Fibonacci sequence	**series** of **numbers** where a **number** is found by adding up the two **numbers** before it.	0, 1, 1, 2, 3, 5, 8, 13, 21
Trial and improvement	Trial and Improvement is a method of solving equations when you can't do it by normal algebraic methods.	
Probability		
Relative frequency	he ratio of the occurrence of a singular event and the total number of outcomes.	
Event	**Event** is a one or more outcome of an experiment	
Outcome	**Outcome**: a possible result of a probability experiment	
Trial	Performance of a random experiment is called a trial	
Theoretical	Probability based on reasoning written as a ratio of the number of favourable outcomes to the number of possible outcomes.	
Sample space	The **sample space** of an experiment is the set of all possible outcomes of that experiment.	
Mutually Exclusive	Two events that cannot happen at the same time	Flipping a coin and getting a tail and head.

Approximation	
Approximation	Giving a value roughly equal to the actual value
To round,	Underline the relevant place value column Circle the next digit Decide whether to round up or down If it's an integer, add in placeholder zeroes up to the decimal point
If you've circled a 5 or higher	add one to the underlined digit
If you've circled a 4 or lower	keep the underlined digit the same
Round to the nearest whole number or integer	Round to the units column
Decimal place	A digit after the decimal point. Sometimes abbreviated to d.p.
Round to 1 decimal place	Round to the tenths column
Round to 2 decimal places	Round to the hundredths column
≈	Approximately equal to
Non-zero digit	1, 2, 3, 4, 5, 6, 7, 8 or 9.
Significant figures	All non-zero digits, and some zeroes if they tell you something about the accuracy of the measurement or rounding. Abbreviated to s.f. or sig fig
Non-significant figures	Leading zeroes, and trailing placeholder zeroes

To identify the first significant figures in a decimal	start counting from the first non-zero digit, and do not skip any numbers even if they are zero
Upper bound	The maximum possible value of a measurement
Lower bound	The minimum possible value of a measurement
Rules of calculating with bounds	UB of sum = UB +UB UB of product = UB x UB UB of difference = UB – LB UB of quotient = UB ÷ LB Vice versa for LB

Number theory	
Divisibility test for 5	if the number ends in 5 or 0
Divisibility test for 10	if the number ends in 0
Divisibility test for 2	if the number ends in an even number
Divisibility test for 4	if the final two digits are a multiple of 4
Divisibility test for 3	if the sum of the digits is a multiple of 3
Divisibility test for 9	if the sum of the digits is a multiple of 9
Divisibility tests for other numbers	perform both divisibility tests for a co-prime factor pair of the number
Factor	a number that divides exactly, without leaving a remainder
Factor pair	a pair of factors that if multiplied together, give the number
Common factor	a factor of all the numbers listed
Highest common factor	the biggest number that divides exactly into all the numbers
Product of prime factors	Prime numbers that are multiplied to give the number
Prime numbers up to 20	2,3,5,7,11,13,17,19
Prime number	An integer with precisely two factors.
Co-prime	Numbers are co-prime if their highest common factor is 1 (e.g. 3 and 8)
Composite number	An integer with more than two factors
The numbers 0 and 1	Are neither prime nor composite.
Multiple	is the result of multiplying any number by an integer
Common multiple	a multiple of all the numbers listed
Lowest common multiple (LCM)	smallest number that is a multiple of all the numbers listed
HCF from a Venn diagram	multiply the numbers in the overlapping section
LCM from a Venn diagram	multiply all the numbers in the Venn diagram

Angles		
Similar	Two shapes are Similar when the only difference is size (and possibly the need to move, turn or flip one around).	
Pythagoras	A theorem used to find missing lengths of a right angled triangle	$a^2+b^2=c^2$ c is the longest side called the hypotenuse
Sum of angles in a triangle	The three angles always add to 180°	

Trigonometry	Ratios used to find missing angles and lengths in a right angled triangle	$\text{Sine} = \frac{opposite}{hypotenuse}$ $s = \frac{o}{h}$ $\text{Cosine} = \frac{adjacent}{hypotenuse}$ $c = \frac{a}{h}$ $\text{Tangent} = \frac{opposite}{adjacent}$ $t = \frac{o}{a}$