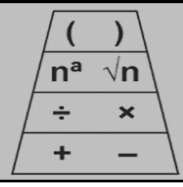
Year 7 Unit 1
Algebra

OPERATIONS		
order of operations	the laws regarding the **order** in which to **calculate** this is used in algebra too	

ALGEBRAIC NOTATION	
unknown value	a value which is **not known** represented by **a letter** in algebra
variable	a value which **can change** represented by **a letter** in algebra
coefficient	a number used to **multiply** a variable the number that comes **in front** of a **letter**, e.g. 3b means 3xb the **coefficient** is **3,** the **variable** is **b**
constant	something which **doesn't change** in a formula
indices	**power** of a variable or number
term	a **number or letter** on its own, or **numbers and letters** multiplied together *e.g. -2, 3x or $5a^2$*
like terms	terms which are the same apart from their numerical coefficients: they are the **same variable** and have the **same power**
expression	a set of **terms combined using** the operations **+, -, x or ÷**, there is **no "=" sign** *e.g. 4x-3, 5a - 3xy + 17*
equation	where **two expressions** are **equal** in value – there is always an **"=" sign** *e.g. 4b = 18*

ALGEBRAIC SHORTHAND: EXAMPLES	
b	**1 x *b***
3*b*	**3 x *b***
***b*³**	***b* x *b* x *b***
3*b*³	**3 x *b* x *b* x *b***
(3*b*)³	**(3 x *b*) x (3 x *b*) x (3 x *b*)**
$\frac{a}{b}$	***a* ÷ *b***

INSTRUCTIONS: EQUATIONS	
solve	**find the value** of an unknown or **variable**, use **inverse operations** and the **balancing method**
inverse	the **opposite**
balance *an equation*	use to **solve** an equation, do the **same** to **both sides of the "="** to **eliminate terms** from **both sides** and **keep it balanced**

INSTRUCTIONS: GENERAL	
evaluate	**find the value of**
form	to **write** or **produce**
substitute	**replacing letters with numbers** to calculate the **numerical value**
simplify	to reduce to its **simplest form**
expand	**multiply** terms inside a bracket by those outside the bracket
factorise	finding the **factors** of an expression the reverse of **expand**, it is when we write an expression using **brackets**
collect like terms (+/-)	you can **add** or **subtract** like terms using the **coefficients**
multiplying terms	**multiply coefficients**/numbers, **simplify variables** with **indices**
dividing terms	set up using a **vinculum**, **cancel common** factors, **simplify variables** with **indices**

SEQUENCES VOCABULARY	
sequence	a **pattern** of **terms/numbers** which **follow** a **rule**
term	each **value in a sequence** is called a term
position	the place it is **located** *e.g. in the sequence: 3, 5, 7, 9 the term '5' has a **position of 2** (as is the **2nd term**)*
term-to-term rule	a **rule** which allows you to **calculate the next term** in a sequence **if you know** the **previous term**
position-to-term rule	a **rule** which allows you to **calculate any term** that is in the **nth position** of the sequence ***(nth Term)***
generate	to **produce** or **create**

TYPES OF SEQUENCES	
linear sequences	a sequence where the **difference between terms increases or decreases** by the **same amount** each time also known as an **arithmetic** sequence use **DiNO** to find the **nth term:** find the **difference**, use as the **coefficient of 'n'** then +/- the '**one before**' **onto** the **end**
squares and cubes	**square numbers: 1, 4, 9, 16, 25, 36…** **cube numbers: 1, 8, 27, 64, 125…**
Fibonacci sequences	a sequence where the next number is found by **adding up the previous two terms** the Fibonacci sequence: **1,1,2,3,5,8,13 ...**
triangular number	a number that can make a **triangular dot pattern,** found by **adding on one more each time**