Year 7 : Cycle 1: Mathematics 100% sheet

Section 1: 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.** For example: 3b means 3xb the **coefficient** is **3,** the **variable** is **b.**
Constant	Something which **does not change** in a formula.
Order of operations	The laws regarding the order in which to calculate BODMAS.

Section 2: Algebraic notation	
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*

Section 3: Sequences	
Sequence	**The 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 $5a^2$*
Position	Terms which are the same apart from their numerical coefficients: they are the **same variable** and have the **same power.**
Term-to-term rule	A set of **terms combined using** the operations **+, -, x or ÷**, there is **no "= "sign.** *e.g. 4x-3, 5a - 3xy + 17*
Position-to-term rule	Where **two expressions** are **equal** in value – there is always an **"= "sign.** *e.g. 4b = 18*

Section 4: Command words for algebra	
Evaluate	**To find the value of.**
Form	To **write** or **produce.**
Substitute	**To replace letters with numbers** to calculate the **numerical value.**
Simplify	To reduce to its **simplest form.**
Expand	**To multiply** terms inside a bracket by those outside the bracket.

Section 5: Command words for algebra	
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.
Solve	Find the value of an unknown or variable; use inverse operations and the balancing method.

Section 6: Types of sequences	
Linear sequences	A sequence where the **difference between terms increases or decreases** by the **same amount** each time. Use **DiNO** to find the **nth term:** find the **difference**, use as the **coefficient of 'n'** then +/- the '**one before**' **onto** the **end.**
Square numbers	A square number is a **number multiplied by itself**. **Square numbers: 1, 4, 9, 16, 25, 36…**
Fibonacci sequence	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 ...**
Triangle numbers	A number that can make a **triangular dot pattern,** found by **adding on one more each time.**
Cube numbers	A cube number is a **number multiplied by itself twice**. **Cube numbers: 1, 8, 27, 64, 125…**

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Section 7: Number sense	
Integer	A **whole number** - can be positive or negative.
Place value	The **value** of a digit in a number based on **where it lies.**
Decimal	**Not** a whole number, it has a **decimal point** in it - can be positive or negative.
Terminating decimal	Decimals which have a **finite** number of place values.
Recurring decimal	Decimals with **repeating** digits or **repeating patterns** of digits.

Section 8: Number sense	
Negative	A number that is **less than zero;** they can be decimals.
Positive	A number that is bigger than zero; they can be decimals.
Ascending	Numbers ordered from **smallest to largest.**
Descending	Numbers ordered from **largest to smallest.**
Quotient remainder	The **result** of a division - **dividend ÷ divisor** = **quotient.** The amount **left over** when a divisor does not fit into a dividend exactly.

Section 9: Area	
Area	The amount of **space** a **2D shape** takes up.
Area of a rectangle	Area = **base x height**
Area of a triangle	Area = $\frac{\text{base x height}}{2}$
Composite area	Work out the **area** of each shape; **add** together.
Square units	The unit in which we measure area.

Section 10: Approximation and estimation	
Rounding	Writing a number **less accurately** so it is easier to work with below 5, **stay the same,** 5 or above, **round up.**
Decimal place	The position of a digit after the **decimal point.**
Money	When working in pounds (£) and pence, all answers should be given to **2 decimal places.**
Significant figures	1st significant figure: the **first digit** in a number which is **not a zero.**
Estimate a calculation	The **process** of rounding numbers to **one significant figure** and then **calculating** to get an **approximate** answer.

Section 11: Multiples, factors, and primes	
Highest common factor (HCF)	The **highest factor** which belongs to two or more numbers.
Prime number	An integer greater than 1 that has **exactly two factors, 1 and itself.**
Prime numbers	**2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31…**
Prime factor	A **factor** of a number which is also **prime.**

Section 12: Multiples, factors, and primes	
Multiple	The result of **multiplying** a number by an integer, *for example the* 3rd *multiple of 7 is* ***21.***
Lowest common multiple	The **lowest common number** in the **multiplication tables** of two or more different numbers.
Product of prime factors	A set of **prime factors** which **multiply** to give a number.
Simplify	To reduce to its **simplest form.**
Index form	Giving an answer in its simplest form and containing powers.

Section 13: Operations	
Addition	Vocabulary: **add, more than, sum, total, all together, more than.**
Subtraction	Vocabulary: **subtract, less, difference, take away, fewer than.**
Multiplication	Vocabulary: **multiply, lots of, product.**
Division	Vocabulary: **divide, split, share.**