**Year 7 Higher Learn By Heart
January Assessment.**

Extending your knowledge of year 7 Maths!

Top Tips:

* Use look, cover, write, check to learn the facts.
* Get someone to read the facts pausing at the bold words, do you know what comes next?
* Use a blank grid and see how much you can fill out with only the pictures to give you hints
* Make up questions to test yourself or get someone to test you on the facts.
* Once you know the facts, try to apply your knowledge using revision questions or Sparx.

**Higher Learn By Heart: Sequences**

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|  | A sequence can be recorded into a **table.**  |
|  | A **linear** sequence makes a **straight line** when plotted on a graph.  |
| + 66 $÷$ 3 = 2Rule = Add 2 | To find **missing values** in a sequence, work out the overall difference and use this to find the **term to term** rule.  |

**Higher Learn By Heart: Equality and Equivalence**

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| $$≡$$ | **Equivalent** expressions have the **same value** when any number is substituted in. In maths we call this an **identity** and use a $≡$ sign.  |
|  | When **collecting like terms**, we are creating a simpler equivalent expression.  |
| $$x$$ | A **variable** is a letter in an algebraic expression.  |
| 3 a2 | A **coefficient** is the number in front of the variable.  |

**Higher Learn By Heart: Algebraic Notation**

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| **‘n’**th | **Position** is the place in the sequence |
| 5n + 6 | A **position-to-term** rule or algebraic rule explains how to work out the term given the position. e.g. x 5 then add 6It is also known as the **‘nth term’** where **‘n’** is the **position number** in the sequence. |
| 5 (2) + 6 | To find a term in a sequence given an **algebraic rule**, **substitute** the **position number** into the rule. e.g. 5 x 2 + 6 would give the 2nd term |
| y = 3x + 6 | When **graphing a function**, the **x** values are the **input** and the **y** values are the **output**.  |
|  | A function with a **power of x** or **x as a denominator** will be a **non-linear function.**e.g. y = $3x^{2 }+5x$ y = $\frac{5}{x} $ |

**Higher Learn By Heart: Place Value**

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| $$10^{y}$$ | **Powers of ten** tell you how many times to **multiply** by 10. e.g. $10^{4}=10×10×10×10=10000$ |
|  | **Standard form** is a way to write **very big** or **very small** numbers using powers of 10 |
| $$x ×10^{y}$$ | A number in **standard form** must start with a number between **1 and 10** ($1\leq x<10).$ |
| $$51×10^{2}$$$$5.1 ×10^{3}$$ | When **calculating** with standard form, remember to **check your final answer** is in standard form.  |

**Y7 Higher Learn By Heart: Fractions, Decimals and Percentages**

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| Pie chart outline | **Pie Charts** represent **proportion** of a whole.Angles to remember:900 = $\frac{1}{4}$ of the data 1800 = $\frac{1}{2}$ of the data600 = $\frac{1}{6}$ of the data 450 = $\frac{1}{8}$ of the data  |
|  | On a **number line**, each section represents an **equal part**, the same as an equal part of a fraction.  |
| Checkmark with solid fillClose with solid fill | When representing **fractions in diagrams**, each section must be an **equal size**.  |
| **> 1** | **Fractions, decimals and percentages** can all be **above one.**e.g. $\frac{13}{10}$ = 1.3 = 130% |