Mathematics	Algebraic Thinking	Year 7	Term 1

Sequences

Term - each number or object in a sequence.

Difference – the result of a subtraction.

Consecutive – whole numbers that follow each other without gaps *e.g. 3, 4, 5 are consecutive.*

Linear sequence – a number pattern that increases or decreases by a **common difference** each time.
e.g. ***4, 7, 10, 13*** *is a linear sequence with a common difference of +3.*

Geometric sequence – a number pattern made by multiplying by the same value each time. They are non-linear.
e.g. **2, 4, 8, 16, 32**
x2 x2 x2 x2

Fibonacci – a non-linear sequence made by adding the 2 previous terms.
e.g. 1, 1, 2, 3, 5, 8, 13, 21, 34 …

Ascending – smallest to largest.

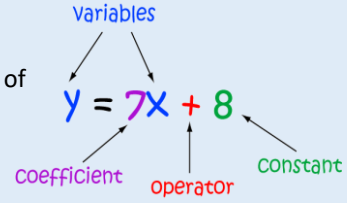
Descending – largest to smallest.

Algebraic Notation

Commutative – gives the same result regardless of the order *e.g.* 2 + 3 = 3 + 2

Variable – a symbol for a value we don't know. It can be a range of values.

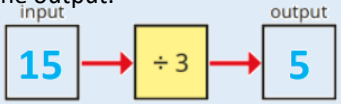
Coefficient – the amount of a variable.



Inverse – the opposite operation
e.g. the inverse of add is subtract
the inverse of multiply is divide

Squared – when a number is multiplied by itself.
e.g. 3^2 *"3 squared" means 3×3*

Function – a process that happens to an input to give the output.



The function is ÷ 3

Important notation:

$5y$ means $5 \times y$ $\quad\quad$ $\frac{y}{5}$ means $y \div 5$

Equality and Equivalence

Equality – having the same value.

Unknown – a symbol for a value we don't know yet that has a specific value that can be found.
e.g. $4 + x = 10$ *so* $x = 6$

Solve – to find the value of the unknown.

$\neq$ means **not** equal to