Year 7 Maths Learning Journey

Autumn half term 2 – Algebraic Expressions

Content – Including 'Big Questions'

Core knowledge; Order of operations	Complete
Equal priority of addition and subtraction – "Does the order of addition and subtraction matter?"	
Equal priority of multiplication and division – "Why might BIDMAS be misleading?"	
Higher priority of multiplication over addition – "Is there another way to do this calculation?"	
Brackets raise the priority – "Why might we use brackets?"	
Writing expressions using the order of operations – "Why is it important to be clear on the order of operations?"	

Core knowledge; Expressions	Complete
Creating a need for algebra – "How can we show that an expression is always, sometimes or never true?"	
The rules of algebraic notation – "Could we write this in a different way?"	
Reading and writing expressions – "How many ways can we say this expression?"	
Collecting like terms – "Could we write this expression another way?"	
Simplification – multiplication and division – "Should we prioritise multiplication or division?"	
Zero pairs – "Is there a simple way of solving this?"	
Expanding brackets – "Are there other ways to manipulate expressions?"	
Building expressions – "How can we represent this algebraically?"	

Core knowledge; Further Expressions	Complete
Substitute or simplify – "Does it matter if I simplify first or substitute first?"	
Substitution – which expression is bigger? – "What will happen if I substitute different numbers?"	
Proof – "What do you notice? Why is it happening?"	

Year 7 Maths Learning Journey

Autumn half term 2 – Algebraic Expressions

Learning Checkpoints

Learning Check Title	Score	Dirt
Arithmetic Structure		
Multiplicative Structure		
Negative number properties		
Addition/Subtraction with negative numbers		
Multiplication/Division with negative numbers		

Key Vocabulary

Priority; The importance of one operation over another (the more important operations go first)

Commutative; Changing the order of the operators does not change the result such that a+b=b+a or a x b = b x a

Associative; a + (b + c) = (a + b) + c or a ∗ (b ∗ c) = (a ∗ b) ∗ c

Distributive; Multiplication is distributive since a(b + c) = ab + ac for all a, b and c real numbers

Zero pairs; Two Values whose Sum is zero (eg same absolute value but different directed value)

Algebra; The part of mathematics that deals with generalised arithmetic. Letters are used to denote variables and unknown numbers and to state general properties.

Generalisation; A statement that applies correctly to all relevant cases. e.g. the sum of two odd numbers is an even number. Algebraic notation can also be used to make a generalisation

Notation; A convention for recording mathematical ideas

Expression; A mathematical form expressed symbolically containing more than one term. Examples: 7 + 3; a2 + b2 .

Function machine; A model used to exemplify a string of operations within an expression

Variable (unknown); A quantity that can take on a range of values, often denoted by a letter, x, y, z, … etc

Constant; A number or quantity that does not vary. Example: in the equation y = 3x + 6, the 3 and 6 are constants, where x and y are variables.

Coefficient; A multiplier within an algebraic term. Example: in the term 4xy, 4 is the numerical coefficient. The coefficient is a factor of the term

Expand; To 'multiply out' an expression containing a bracket

Substitute; Numbers can be substituted into an algebraic expression in x to get a value for that expression for a given value of x

Simplify; To reduce to simplest terms

Conjecture; An educated guess (or otherwise!) of a particular result, which is as yet unverified.