Year 8 Maths Learning Journey

Autumn half term 2 – Equations

Content – Including 'Big Questions'

Core knowledge; Arithmetic Structure	Complete
1. Using four operations with negative numbers – "What is the effect of the directed value?"	
2. Simplification **and zero pairs** – "What is the effect of the directed value?"	
3. Expanding brackets – "How is the distributive law being used?"	
4. Substitution – "What is the effect of the directed value?"	
Core knowledge; Forming Equations	**Complete**
5. **The meaning of** equation**,** expression **and** inequality – "What's the difference between equation, expression and inequality?"	
6. Maintaining equality – "Can I recognise the inverse function?"	
7. **Checking the solution of an equation** – "How can I use inverse functions?"	
Core knowledge; Solving Equations	**Complete**
8. Solving equations in the form ax + b = c - "How do a and b change c?"	
9. Solving equations involving brackets – "Do I always have to expand the brackets?"	
10. **Solving equations in the form a = bx** - "Can I recognise the inverse function?"	
11. Forming and solving one sided equations – "Can I use the vocabulary of algebra?"	
Core knowledge; Solving more complex equations and inequalities	**Complete**
12. Solving two-sided equations – "Can an unknown be on both sides of the equation?"	
13. **Forming and solving linear equations** – "Can I recognise a linear equation?"	
14. **Using formulae** – "Can I recognise the mathematical function?"	
15. Solve simple inequalities – "Which side is bigger?"	

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Learning Checkpoints

Learning Check Title	Score	Dirt
Arithmetic Structure		
Forming Equations		
Solving Equations		
Solving More Complex Equations and Inequalities		

Key Vocabulary

Term: either a single number or variable, or numbers and variables multiplied together.
Priority of operations: same as order of operations
Expression: algebraic expression consists of unknown variables, numbers and arithmetic operators.
Equation: A mathematical statement showing that two expressions are equal.
Is equal to: the symbol used to show that two terms or expressions have the same value. The symbol for this is =
Variable: A quantity that can take on a range of values, often denoted by a letter, x, y, z, t,
Constant: A number or quantity that does not vary.
Unknown: an unknown is a number we do not know
Substitute: Numbers can be substituted into an algebraic expression in x to get a value for that expression for a given value of x.
Solve: To solve something is to find a solution
Expand: to multiply each term in the bracket by the expression outside the bracket.
Zero pair: two values with equal absolute value but opposite directed value which will sum to zero
Coefficient: Often used for the numerical coefficient. More generally, a factor of an algebraic term.
Equivalent: equal in value, amount, function, meaning, etc.
Order of operations: his refers to the order in which different mathematical operations are applied in a calculation.