Year 7 Maths Learning Journey

Autumn Term 1 - Arithmetic Structure

Content including 'Big Questions'

Core knowledge; Arithmetic structure	**Complete**
Commutativity - "How does changing the order of addends effect the calculation?"	
Associativity - "How are associative and commutative laws similar?"	
Fact families - "Can you spot connections?"	
Meaning of equality including derived facts - "Why doesn't the = symbol show 'the answer'?"	
Core knowledge; Multiplicative structure	**Complete**
Models of multiplication - "How can we represent the concept of multiplication"	
Commutativity - "What is the effect of changing the order of the multiplicand and the multiplier?"	
Associativity (return with factors) - "Why might associativity be useful?"	
Relationship with division. Derived facts - "What is the relationship between multiplication and division?"	
Distributivity - "How does partitioning link to distributivity?"	
All axioms - "Can we use laws of multiplication to solve problems without calculating?"	
Core knowledge; Negative number properties	**Complete**
Negative numbers in context - "What is the difference between positive and negative numbers?"	
Absolute value - "How many ways can we order numbers?"	
Core knowledge; Addition/Subtraction with negative numbers	**Complete**
Adding on from and subtracting from negative numbers - "How does a numberline support addition and subtraction?"	
Adding negative numbers and Zero pairs - "what's the same and what's different in a zero pair?"	
Further adding of negatives including derived facts - "Do Commutative and Associative Laws still apply when using negative numbers?"	
Subtracting negatives including derived facts - "What's the difference between subtraction and a negative number?"	
Core knowledge; Multiplication/Division with negative numbers	**Complete**
Multiplication - "Does multiplication always make a value larger?"	
Division - "Does division always make a value smaller?"	
All axioms with negative numbers - "Do negative numbers make calculations more difficult?"	

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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

Ascending; Increasing value

Descending; Decreasing value

Addend; the parts in a part-whole model of addition.

Subtract; inverse of addition – finding the difference in magnitude

Negative; a value less than zero

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

Product; the result of multiplication

Inverse; the opposite function

Factor; integers we multiply together to make another number

Multiple; the result of multiplying a given number by any integer (a times table is an example of multiples of a number)

Array; a model using rows and columns to display repeated addition or multiplication

Quotient; The result of a division

Dividend; the number which is divided in a division is the dividend

Divisor; the number by which another number is divided

Directed Value – Which side of Zero a number is (positive or negative)

Absolute Value – The magnitude of a number (how far from Zero)