



Year 7 Maths Learning Journey

Summer - Half Term 1: Structure of number - Fractions

Content – Including ‘Big Questions’

Core knowledge; Multiples and Factors	Complete
1. Multiples and Factors – “What is a factor?”	
2. Prime numbers and prime factor decomposition – “Can all integers be written as the product of prime numbers?”	
3. Highest common factors – “Can you show multiple methods to find HCF?”	
4. Lowest common multiples – “Can you show multiple methods to find LCM ?”	
Core knowledge; Equivalence and ordering	Complete
5. Fraction as a quotient – “Is a fraction a number?”	
6. Equivalence of fractions and decimals – “Is there a decimal equivalence for all fractions?”	
7. Equivalent fractions – “How do we generate equivalent fractions?”	
8. Simplifying fractions – “Is simplifying fractions the same as finding equivalence?”	
9. Division of decimals – “Can I use equivalent fractions to divide decimals?”	
10. Ordering and comparing fractions – “Do I have to find a common denominator to compare fractions?”	
Core knowledge; Calculations with fractions – Adding/Subtracting	Complete
11. Adding and subtracting fractions - “How do I add a negative fraction?”	
12. Improper fractions – “Is an improper fraction still a fraction?”	
Core knowledge; Calculations with fractions – Multiplying/Dividing	Complete
13. Relationship between multiplying a fraction and division – “Is $a \times \frac{1}{n}$ the same as $\frac{a}{n}$?”	
14. Multiplying fractions – “What is the connection between multiplying fractions and 0.1×0.2 ?”	
15. Reciprocals – “What two numbers will multiply to make 1?”	

Learning Checkpoints

Learning Check Title	Score	Dirt
Multiples and Factors		
Equivalence and ordering		
Calculations with fractions – Addition and Subtraction		
Calculations with fractions – Multiplication and division		

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Key Vocabulary

Integer: a whole number that can be positive, negative or zero

Factor: When a number, or polynomial in algebra, can be expressed as the product of two numbers or polynomials, these are factors of the first.

Multiple: For any integers a and b , a is a multiple of b if a third integer c exists so that $a = bc$

Common: Values that are the same.

Highest Common Factor - The common factor of two or more numbers which has the highest value

Lowest Common Multiple - The common multiple of two or more numbers, which has the least value

Prime: A whole number greater than 1 that has exactly two factors, itself and 1.

Equivalent: equal in value, amount, function, meaning, etc.

Fraction - the result of dividing one integer by a second integer

Decimal – where the tenths, hundredths, thousandths etc. are represented as digits following a decimal point

Numerator: in the notation of common fractions, the number written on the top – the dividend (the part that is divided).

Denominator: In the notation of common fractions, the number written below the line

Vinculum - the horizontal line in a fraction which indicates that values are to be operated on as a single entity

Reciprocal: The multiplicative inverse of any non-zero number

Simplify: Reduce to its simplest form.

Cancel: when the numerator and denominator are both divided by their highest common factor the fraction is said to have been cancelled down to give the equivalent fraction in its lowest terms

Improper fraction : a fraction where the numerator is greater than the denominator

Unit fraction: A fraction that has 1 as the numerator and whose denominator is a non-zero integer

Mixed Number: A whole number and a fractional part expressed as a common fraction. Example: $2\frac{1}{4}$ is a mixed number. A mixed number is also referred to as a fraction.

Quotient: The result of a division.

Commutative: Addition and multiplication of real numbers are commutative where $a + b = b + a$ and $a \times b = b \times a$ for all real numbers a and b .

Associative: A binary operation $*$ on a set S is associative if $a * (b * c) = (a * b) * c$ for all a , b and c in the set S . Addition and multiplication of real numbers is associative

Distributive - One binary operation $*$ on a set S is distributive over another binary operation $\bullet$ on that set if $a * (b \bullet c) = (a * b) \bullet (a * c)$ for all a , b and $c \in S$

Equal Priority: When operations are given the same importance in the order of operations

Order of operations - Generally, multiplication and division are done before addition and subtraction, but this can be ambiguous, so brackets are used to indicate calculations that must be done before the remainder of the operations are carried out.