Year 7 Maths Learning Map

- TERM 1 -

Generalised Number

This half term focuses on the structure of arithmetic in order to build a foundation for algebraic reasoning and in particular, expressions later in the term. We start with arithmetic reasoning and them move to multiplicative reasoning; understanding the laws of commutativity, associativity and distributivity. We explore the concept of the conservation of equality and the concept of zero pairs. This knowledge and these skills should be referred to and continued to be used when moving on to negative numbers in the latter half of this term.

Algebra

This builds on commutativity, associativity and negative numbers from term 1 introducing generalisations and variables. We develop the understanding and using of algebraic notation and develop a deeper understanding of the importance of the order of operations through variable and generalised arithmetic. We explore substitution into and expression including with negative numbers. We will learn how to expand single and multiple brackets and apply algebraic notation to a range of contexts which will include aspects of shape and worded scenarios.

LINKS TO PRIOR LEARNING

This term is an extension of arithmetic and number sense developed through the primary phase including the beginnings of negative numbers, these link to generalisations which will be used to form and solve expressions and equations. To be able to use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding. The algebra unit builds on commutativity, associativity and negative numbers from term 1.

- TERM 2 -

Co-ordinate Geometry

This term we will be plotting and reading co-ordinates in all four quadrants this will then develop into exploring squares and square numbers. This will then link to finding the area and perimeter of quadrilaterals and triangles as well as compound shapes.

Structure of Number (Decimals)

We will further develop the understanding of place value which was explored throughout the primary phase along with the use of approximation and estimation. Through a secure understanding of Place Value we will round numbers to given degrees of accuracy including decimal places and appreciate the infinite nature of decimals.

LINKS TO PRIOR LEARNING

Co-ordinates - The students have met coordinates in 4 quadrants in primary school but it's important that a) we connect to their primary school work b) we have a solid foundation from which to approach the rest of the half term. This uses the language of negative numbers and algebraic expressions from last half term (which the students will not have done in primary school).We are laying eggs for straight-line graphs and transformations.

Number - We have looked at the laws of arithmetic which apply whichever number system we use. We are now zooming in on particular number systems (registers), looking at the structures within each system and how the laws apply. Having a good understanding of place value is vital for working with decimals and understanding the connections between fractions and decimals.

- TERM 3 -

Structure of Number (Fractions)

This term we will be finding and using, products, prime numbers, factors, multiples, common multiples and factors, highest common factor and lowest common multiple. This will be based in on times table recall. Through use of modelling and understanding of equivalence we will be ordering, adding, subtracting, multiplying and dividing any fractions (including working with mixed numbers and improper fractions). we will finish the unit by converting between terminating decimals and fractions.

Probability

In this unit we will explore the concept of likelihood and the language associated with it. This may be the first time some students have considered this which often leads to rich discussion. This will lead on to modelling and calculating a numerical value of the probability of a given event. Finally we will look at the concept of fairness and how this influences outcomes.

LINKS TO PRIOR LEARNING

From KS2, pupils will be able to identify multiples and factors, including finding all factor pairs of a number, common factors of two numbers, identify common factors, common multiples and prime numbers.

Students will not have studied the topic of probability in KS2 however the concept is explored through wider curriculum links such as geography – e.g. more likely to snow in one country than another.