SoW Outline Summer 2020 Year 8

This document provides an overview and possible timetable for some key topics and skills practice that students could work on whilst normal lessons are disrupted.

This is based on the Hampshire Scheme of Learning, which is available to schools subscribing to Moodle Plus' (https://maths.hias.hants.gov.uk) and seeks to cover a wide range of key ideas across the domains of the maths curriculum.

It is important that teachers provided a range of tasks to support the objectives as appropriate to their students. This should include a variety of tasks that are accessible from home such as teacher prepared materials and problem-solving opportunities such as those provided by 'Nrich'.

https://nrich.maths.org/

In this way, we are aiming for all students to experience the best study aids and opportunities, given the circumstances under which we are all working.

In addition to this, we will offer one or two 'Problems of the Week' for each unit to support teachers and students with further study.

Summer 1

Week	Domain	Unit Objectives
1	Graphs: Linear and quadratic	• Interpret mathematical relationships both algebraically and graphically • Use linear and quadratic graphs to estimate values of y for given values of x and vice versa • Find approximate solutions to contextual problems from given graphs for a variety of functions.
2	Number: Standard form Decimal to Fraction conversion.	• Interpret and compare numbers in standard form, where n is a positive or negative integer or zero • Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8)
3	Geometry: Constructions and scale drawings	• Construct similar shapes by enlargement, with or without coordinate grids • Draw and measure line segments and angles in geometric figures, including interpreting scale drawings
4	Probability: Theoretical	• Generate theoretical sample spaces for single and combined events with equally likely, mutually exclusive outcomes and use these to calculate theoretical probabilities
5	Statistics: Scatter graph	• Describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs. • Identify and interpret correlation

Summer 2

Week	Domain	Unit Objectives
1	Number: Decimals and fractions	• Work inter changeably with terminating, recurring and non-terminating decimals and their corresponding fractions • Relate the language of ratios and the associated calculations with the arithmetic of fractions
2	Algebra: different graphs	• Explore cubic, exponential, reciprocal and piece-wise linear graphs. • Find approximate solutions to contextual problems using these graphs
3	Ratio and proportion: Part: Whole and percentage change	• Understand that a multiplicative relationship between two quantities can be expressed as a fraction or a ratio • Divide a given quantity into a ratio with more than two parts. • Express the division of a quantity into two or more part as a ratio using appropriate notation • Solve problems involving percentage change, including percentage increase, decrease and original value problems and simple interest in financial mathematics • Work with percentages greater than 100%
4	Geometry: Formulae for perimeters and areas	• Calculate and solve problems involving perimeters of 2-d shapes, including circles, areas of circles and composite shapes • Derive and apply formulae to calculate and solve problems involving perimeter and are of triangles, parallelograms, trapezia and the volume of cuboids (including cubes)
5	Number: Primes, LCM and HCF	• Use prime numbers, factors, multiples, common factors and multiples, highest common factor and lowest common multiple to solve problems ▢ Select and use appropriate calculation strategies to solve increasingly complex problems.
6	Compound measures and conversions	• Use compound measure such as speed, unit pricing and density to solve problems • Use scale factors, scale diagrams and maps • Change freely between related standard units
7	Algebra: Arithmetic sequences and simple factorising	• Recognise arithmetic sequences and find the nth term • Simplify and manipulate algebraic expressions by taking out common factors • Solve linear equations, including factorising