Year 5 Summer term 2021

This document could be used by all schools to support teachers in planning learning in all domains of mathematics during the summer term 2021. It is based on the Hampshire Scheme of Learning (HSL), which is available to schools subscribing to Moodle Plus (https://maths.hias.hants.gov.uk). **It does not include all national curriculum statements.** Some additional maths team objectives included as suggestions. Teachers will need to adapt these plans based on prior planning and assessment.

The careful sequencing of domains encourages pupils to make links across domains and supports teachers' use of effective strategies supporting recall of learning, particularly spaced practice and retrieval practice, identified through cognitive psychology research (Weinstein, Sumeracki and Caviglioli, 2019). It is important that children are prompted to access their memories of prior teaching and learned knowledge during periods of remote teaching.

The number of lessons provides a suggested structure, based on hourly lessons.

It will be important for teachers to plan a sequence of a few key tasks and linked skills practise as a 'learning journey' for each unit of work. Pupils will need support to understand the problem and have examples of how to record their solutions. Further examples of similar problems to the key task, using variation techniques, will support pupils to develop confidence and independence with each task.

This document also shows where 'Ready -to- Progress' criteria (RTPs) from the DFE Teaching Mathematics: Guidance for Key Stage 1 and 2 (June 2020)* document could be used to support review, practice, and consolidation. The National Centre for the

Teaching of mathematics (NCETM) has produced resource materials to support the RTPs. Each RTP has linked resources, including power point slides, which could be used to support modelling of key mathematical concepts

*(DfE Mathematics Guidance: Key stage 1 and 2, June 2020, https://www.ncetm.org.uk/in-the-classroom/teaching-maths-through-the-pandemic/support-with-2020-dfe-guidance/

The NCETM supporting resource materials can be found at:

https://www.ncetm.org.uk/classroom-resources/exemplification-of-ready-to-progress-criteria/

Points to consider when using RTP resources:

They should be used flexibly, guided by pupils' response, repeating activities where pupils lack confidence. Materials from Year 5 may support addressing gaps and misconceptions for whole class, small groups or 1:1 focused intervention. The ready-to-progress criteria are intended as goals for the end of the year.

Find everyday opportunities to develop children's understanding of time.

Lessons	Content Domain	Objectives (HSL Unit 5.12)	DfE RTPs
10	Multiplication and division (including square, cube and prime numbers) (10)	• **Identify multiples and factors, including all factor pairs of a number and common factors of two numbers.** • **Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.** Construct arrays to show that prime numbers (p) have exactly one array (1 x p) • **Recognise and use square numbers and cube numbers and the notation for (^{2}) and (^{3}).** Construct arrays for square numbers to show that square numbers have an odd number of factors since one is repeated (e.g. 16 can be constructed as 1 x 16; 2 x 8 and 4 x 4 ~ factors are 1,2,4,8,16) • **Solve problems involving all four operations including using their knowledge of factors and multiples, squares and cubes.**	5MD-1 5MD-2 5MD-3

Lessons	Domains	Objectives (HSL Unit 5.13)	DfE RTPs
5	Geometry (position and direction) (5)	• Plot points on a coordinate grid in the first quadrant • **Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language and know that the shape has not changed.** **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.**	5G-1 5G-2

Lessons	Domains	Objectives (HSL Unit 5.14)	DfE RTPs
5	All four operations (5)	• **Solve multi-step problems involving all four operations in context, deciding which operations and methods** (including mental and efficient jottings and diagrams) **to use and why.** • Use a range of appropriate numbers to solve problems in context. This should include whole numbers and part numbers (fractions, decimals, percentages) • Solve estimation to check answers to calculations and determine , in the context of a problem, levels of accuracy (interpret remainders and rounding).	

Lessons	Domains	Objectives (HSL 5.15)	DfE RTPs
10	Addition and subtraction (secure the formal methods) / statistics (10)	• **Add and subtract whole numbers with more than 4 digits, including using formal written methods** • **Add and subtract mentally with increasingly large numbers (e.g. 12,462 – 2,300 = 10,612)** • **Use rounding to check answers and determine, in the context of a problem, levels of accuracy** • **Solve addition and subtraction multi-step problems in contexts deciding which operations to use and why** • **Solve comparison, sum and difference problems using information presented in a line graph** • **Complete, read and interpret information in tables.**	

Lessons	Domains	Objectives (HSL 5.16)	DfE RTPs
15	Fractions/ geometry (10)	• **Compare and order, add and subtract, fractions whose denominators are all multiples of the same number.** • **Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths** • **Recognise mixed numbers and improper fractions and convert from one form to the other. Write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5)** • **Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams** • **Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles** • **Draw given angles and measure them in degrees** • **Identify angles at a point and one whole turn (360°)** • **Identify angles at a point on a straight line and ½ a turn (180°)** • **Identify other multiples of 90°** and link to fractions of a whole turn **Use the properties of rectangles to deduce related facts and find missing lengths and angles**	5F-1 5F-2 5F-3 4MD-1 5MD-1 5G-1 5G-2
	Percentages (5)	• **Recognise the per cent symbol (%) and understand that it relates to the 'number of parts per 100'** • **Write percentages as a fraction with 100 as the denominator and as a decimal fraction.** • **Solve problems which require knowing percentage and decimal equivalents.** • Solve problems involving simple percentages (multiples of 10%, include 1% and 50% ~ link to division by 10, 100 and 2)	

Lessons	Domains	Objectives (HSL 5.17)	DfE RTPs
10	Multiplication and division (secure formal methods) (10)	• **Identify multiples and factors** • **Establish whether a number is prime up to 100 and recall prime numbers up to 19** • **Multiply numbers up to 4-digits by a one-or two-digit number using a formal written method** • **Divide numbers up to 4-digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context** • **Multiply and divide whole numbers and those involving decimals by 10, 100, 1000** • **Recognise and use square number and cube numbers, with the correct notation (^{2}) and (^{3})** • **Solve problems involving all four operations, including any combination of these.** • **Solve problems involving multiplication and division, including scaling by simple fractions (**half as big**) and problems involving simple rates**	5MD-3 5MD-4

Lessons	Domains	Objectives (HSL 5.18)	DfE RTPs
10	All four operations (context: measure and decimals) (10)	• **Convert between different units of metric measure (km/m; cm/m; cm/mm; g/kg; l/ml)** • **Understand equivalences between metric units and common imperial units (inches, pounds, pints)** • **Solve problems involving converting between units of time** • **Complete, read and interpret information in timetables** • **Measure and calculate the perimeter of composite rectilinear shapes in cm and m** • **Calculate and compare the area of rectangles (including squares) , using standard units (cm^2 and m^2)** • **Estimate the area of irregular shapes** • **Estimate volume using 1cm^3 blocks to build cubes and cuboids** • **Estimate capacity (e.g. using water)** • **Use all four operations to solve problems involving measure using decimal notation including scaling** • **Read, write , order and compare numbers with up to three decimal places** • **Solve problems involving numbers with up to three decimal places** • **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)** **Round decimals with two decimal places to one decimal place and to the nearest whole number.**	5MD-3 5MD-4