Year 6 Spring term 2021

This document could be used by all schools to support teachers in planning for remote teaching during the spring 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 sequence of domains outlined have been suggested to support a smooth transition to remote teaching of units of work. 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.

The Hampshire Maths Team will provide a ‘problem of the week’ example to support this approach linked to the plan below. Teachers will need to adapt these examples to meet the needs of the range of leaners in their class.

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 6 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.

Video lessons

The NCETM, White Rose Maths and Oak Academy have key stage 1 and 2 video lessons with linked resources such as power points and follow up tasks that can support remote education.

The NCETM maths videos can be found at <https://www.ncetm.org.uk/in-the-classroom/teaching-maths-through-the-pandemic/primary-video-lessons/>

The Oak Academy maths videos can be found at <https://teachers.thenational.academy/subjects/maths>

White Rose Maths videos can be found here: <https://whiterosemaths.com/homelearning/>

Spring 1

**Find everyday opportunities to develop children’s understanding of time.**

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| **Lessons** | **Content Domain** | **Objectives (HSL Unit 6.6)** | **DfE RTPs** |
| 10 | Fractions, Percentages and Ratio | * Know that 1/10 = 0.1 and 1/100 = 0.01
* **Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.**
* **Associate a fraction with division** (3/8 = 3÷8) **and calculate decimal fraction equivalents e.g. 0.375) for a simple fraction (e.g. 3/8)**
* **Identify the value of each digit to three decimal places and multiply and divide numbers by 10,100,1000 where the answers are up to three decimal places.**
* **Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.**
* **Solve problems involving ratio and proportion**
* **Solve problems involving unequal sharing and grouping using knowledge of factors and multiples.** They might use the notation a:b to record their work.
 | 5F-15F-25F-3 |
| 5 | Geometry (angle / pie charts | * **Interpret and construct pie charts and use these to solve problems,** including comparison problems.
* Draw given angles, and measure them in degrees (⁰)
* **Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.**
 | 5G-1 |
| **Video Resources** |
| Oak AcademyUnit 4: Fractions <https://teachers.thenational.academy/units/fractions-8ae5>Unit 9: Percentages and statistics <https://teachers.thenational.academy/units/percentages-and-statistics-fd0a>Unit 5: Missing angles and length <https://teachers.thenational.academy/units/missing-angles-and-lengths-84fd>White Rose Maths: <https://whiterosemaths.com/homelearning/year-6/>NCETM :<https://www.ncetm.org.uk/classroom-resources/vl-upper-key-stage-2-fractions-video-lessons/>NCETM <https://www.ncetm.org.uk/classroom-resources/vl-upper-key-stage-2-linking-fractions-decimals-and-percentages-video-lessons/> |

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| **Lessons** | **Domains** | **Objectives (HSL Unit 6.7)** | **DfE RTPs** |
| 10 | Subtraction and addition / NPV / patterning and linear sequences (focus on mental strategies) | * **Solve addition and subtraction multi-step problems in context, deciding which operations and methods to use and why.**
* **Perform mental calculations, including with mixed operations and large numbers.**
* **Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy**
* **Generate and describe linear number sequences**
* **Solve problems which require answers to be rounded to specified degrees of accuracy.**
* **Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.**
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| 5 | Fractions | * **Add and subtract fractions with the different denominators and mixed numbers, using the concept of equivalent fractions.** Use diagrams to support reasoning.
* **Solve problems which require answers to be rounded to specified degrees of accuracy.**
* **Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.**
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| **Video Resources** |
| Oak AcademyUnit 3: Calculation problems: <https://teachers.thenational.academy/units/calculation-problems-84d5>Unit 4: Fractions: <https://teachers.thenational.academy/units/fractions-8ae5>White Rose Maths<https://whiterosemaths.com/homelearning/year-6/>NCETM<https://www.ncetm.org.uk/classroom-resources/vl-upper-key-stage-2-number-addition-and-subtraction-video-lessons/> |

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| **Lessons** | **Domains** | **Objectives (HSL Unit 6.8)** | **DfE RTPs** |
| 5 | Statistics (line graphs including temperature and negative numbers, mean average) (5) | * **Use negative numbers in context and calculate intervals across zero**
* **Interpret and construct line graphs and use these to solve problems.**
* **Calculate and interpret the mean as an average**
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| **Video Resources** |
| Oak AcademyUnit 9 Percentages and statistics: <https://teachers.thenational.academy/units/percentages-and-statistics-fd0a> |

Spring 2

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| **Lessons** | **Domains** | **Objectives (HSL 6.9)** | **DfE RTPs** |
| 10 | Measurement (length/volume and capacity/ reading scales / imperial conversions) | * **Understand and use equivalences between metric units and common imperial units such as pounds and pints.**
* **Convert between miles and kilometres.**
* **Calculate, estimate and compare volume of cubes and cuboids using standard units including cm3 and m3 and extending to other units such as mm3 and km3**
* **Identify 3-D shapes, including cubes and other cuboids, from 2-D representations**
* Multiply three numbers together, understanding that this can be done in any order and link this to the volume of cubes and cuboids.
* **Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate in the context of capacity, length and volume.**
* Read a range of scales.
 | 5MD-1 |
| 5 | Algebra (including formulae | * **Use simple formulae**
* **Recognise when it is possible to use formulae for area and volume of shapes**
* **Express missing number problems algebraically**
* **Enumerate all possibilities of combinations of two variables.**
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| **Video Resources** |
| Oak AcademyUnit 3: Calculation problems: <https://teachers.thenational.academy/units/calculation-problems-84d5>Unit 8: Decimals and measures <https://teachers.thenational.academy/units/decimals-and-measures-435d> |

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| **Lessons** | **Domains** | **Objectives (HSL 6.10)** | **DfE RTPs** |
| 10 | All four operations (secure the formal and informal methods) / statistics | * **Solve problems involving addition, subtraction, multiplication and division, deciding which operations and methods to use and why**
* **Solve problems involving the calculation and conversion units of measure (g/kg ; ml/l) using decimal notation up to three decimal places .Link to place value understanding of scaling up and down by 1000 (x / ÷)**
* **Use knowledge of the order of operations to carry out calculations involving the four operations**
* Know that distributivism can be expressed as a (b + c) = ab + ac. (e.g. 13 x 8 = 8(10 +3))
* Understand the terms factor, multiple and prime, square and cube numbers and use them to construct equivalence statements (for example, 4 x 35 = 2 x 2x 35; 3 x 270 = 3 x 3 x 9 x 10 = 92 x 10).
* **Identify common factors, common multiples and prime numbers.  Express missing number problems algebraically**
* **Find pairs of numbers that satisfy pairs of numbers involving two unknowns**
* **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.**
* **Calculate the mean as an average**
* Solve comparison, sum and difference problems using information presented in a line graph or pie chart
* Complete, read and interpret information in tables.
 | 5MD-35MD-4 |
| **Video Resources** |
| Oak AcademyUnit 3: Calculation Problems <https://teachers.thenational.academy/units/calculation-problems-84d5>White Rose maths<https://whiterosemaths.com/homelearning/year-6/>NCETM<https://www.ncetm.org.uk/classroom-resources/vl-upper-key-stage-2-number-addition-and-subtraction-video-lessons/> |

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| **Lessons** | **Domains** | **Objectives (HSL 6.11)** | **DfE RTPs** |
| 10 | Geometry (position and direction) | * **Compare and classify geometric shapes based on their properties and sizes and find unknown angles.**
* **Describe positions on the full coordinate grid (all four quadrants)**
* **Draw and translate simple shapes on a coordinate plane and reflect them in the axes.**
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| 5 | Fractions | * **Multiply simple pairs of proper fractions (show on an array), writing the answer in its simplest form e.g. ¼ x ½ = 1/8**
* **Divide proper fractions by whole numbers e.g. 1/3 ÷ 2 = 1/6**
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| **Video Resources** |
| Oak AcademyUnit 6: Coordinates and shape: <https://teachers.thenational.academy/units/coordinates-and-shape-4f3d>Unit 7: Fractions <https://teachers.thenational.academy/units/fractions-120c>White Rose Maths<https://whiterosemaths.com/homelearning/year-6/>NCETM<https://www.ncetm.org.uk/classroom-resources/vl-upper-key-stage-2-fractions-video-lessons/> |