Year 5 – Medium Term Plan

Guidance

- *The Units below* **MUST** *be taught in this order.*
- *Use the* **Meridian calculation policy**.
- *Complete the summative assessments at the times stated on the assessment calendar.*
- *Formally assess the children's understanding continuously to inform* **instant interventions** *and* **adapt** *lessons to meet their needs.*
- *There is* **additional time** *built into the units for teachers to break one lesson into two, add in additional lessons, carry out* **intervention or enrichment lessons** *or do anything else as needed for their class.*
- *Any time left at the end of each term should be used for* **closing the gap** *and giving children the opportunity to* **apply** *their learnt skills to a real-life context, a shop, an estate agent, a car salesroom, a factory, planning a holiday etc. and open-ended investigations.*
- *Lesson starters may be used to consolidate previous learning in all areas, including* **number**, **shape** *and* **measure**. *Initially, these will be used to* **apply skills learnt from Years 3 and 4** *until the subject areas are covered in Year 5.*

Subject Knowledge Support

White Rose Schemes of Work - Maths resources for teachers | White Rose Maths

NCETM Subject Knowledge Audits Primary Subject Knowledge Audit | NCETM

Autumn					
Number and Place Value (3-4 weeks)	**Decimals (PV) (1 week)**	**Addition and Subtraction (2-3 weeks)**	**Addition and subtraction of decimals (1-2 weeks)**	**Multiplication and division Unit 1 (2-3 weeks)**	**Measure – area & perimeter (1-2 weeks)**
National Curriculum Statements: ✓ read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit ✓ count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 ✓ interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero ✓ round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 ✓ solve number problems and practical problems that involve all of the above ✓ read Roman numerals to 1000	**National Curriculum Statements:** ✓ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ✓ read, write, order and compare numbers with up to three decimal places ✓ round decimals with 2 decimal places to the nearest whole number and to 1 decimal place **Lesson Sequence:** 1. L.P: To understand tenths and hundredths 2. L.P: To understand thousandths 3. L.P: To compare decimals 4. L.P: To order decimals 5. L.P: To round decimals	**National Curriculum Statements:** ✓ add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) ✓ add and subtract numbers mentally with increasingly large numbers ✓ use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy ✓ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ✓ estimate and use inverse operations to check answers to a calculation **Lesson Sequence:**	**National Curriculum Statements:** ✓ solve problems involving number up to three decimal places ✓ practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, 0.83 + 0.17 = 1) (non-statutory) **Lesson Sequence:** 1. L.P: To add decimals (with same number of decimal places). 2. L.P: To add decimals (with different number of decimal places). 3. L.P: To subtract decimals with the same number of decimal places.	**National Curriculum Statements:** ✓ identify multiples and factors, including finding 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 ✓ solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes ✓ solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates ✓ multiply and divide whole numbers and	**National Curriculum Statements:** ✓ measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres ✓ calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes **Lesson Sequence:** 1. L.P: To measure perimeter. 2. L.P: To calculate perimeter. 3. L.P: To calculate the perimeter of composite rectilinear shapes. 4. L.P: To calculate area. 5. L.P: To calculate the area of

(M) and recognise years written in Roman numerals. **Lesson Sequence:** 1. L.P: To read and write numbers up to 100,000 2. L.P: To read and write numbers up to 1,000,000 3. L.P: To add and subtract powers of 10 up to 1,000,000. 4. L.P: To partition numbers 5. L.P To partition numbers (involving non-standard) 6. L.P: To place numbers up to 10,000 on a number line 7. L.P: To place numbers up to 100,000 on a number line 8. L.P: To place numbers up to 1,000,000 on a number line 9. L.P: To round to the nearest 10 and 100. 10. L.P: To round to the nearest 1,000 and 10,000. 11. L.P: To round to the nearest 100,000 and 1,000,000 12. L.P: To compare numbers 13. L.P: To order numbers 14. L.P: To understand negative numbers 15. L.P: To solve negative number problems in context. 16. L.P: To understand Roman Numerals (up to 100) 17. L.P: To understand Roman Numerals (up to 1,000)		1. L.P: To adjust when adding. 2. L.P: To add using the compact method. 3. L.P: To choose the most efficient method for addition. 4. L.P: To solve addition word problems. (multi-step) 5. L.P: To adjust when subtracting. 6. L.P: To subtract using the compact method. 7. L.P: To subtract numbers with place holders using the compact method. 8. L.P: To use efficient methods for subtraction. 9. L.P: To solve subtraction word problems. 10. L.P: To solve addition and subtraction word problems. (single and multi-step) 11. L.P: To use the inverse operation.	4. L.P: To subtract decimals with a different number of decimal places. **5.** L.P: To identify decimal sequences.	those involving decimals by 10, 100 and 1000 ✓ establish whether a number up to 100 is prime and recall prime numbers up to 19 **Lesson Sequence:** 1. L.P: To identify multiples. 2. L.P: To identify common multiples. 3. L.P: To identify factors. 4. L.P: To identify common factors. 5. L.P: To identify prime and composite numbers. 6. L.P: To use the inverse operation. 7. L.P: To multiply by 10, 100 and 1,000. 8. L.P: To divide by 10, 100 and 1,000. 9. L.P: To multiply and divide by multiples of 10, 100 and 1,000.	composite rectilinear shapes. 6. L.P: To estimate the area of irregular shapes.

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Spring		
Number Multiplication and Division Unit 2 – (2-3 weeks) **Lesson Sequence:** 1. L.P: To explore the scaling structure of multiplication. 2. L.P: To use the compact method for multiplication (3digit by 1 digit) 3. L.P: To identify square numbers. 4. L.P: To identify cube numbers. 5. L.P: To use the compact method for multiplication (4 digit by 1 digit) 6. L.P: To use long multiplication (2X2 digits) – no exchange. 7. L.P: To use long multiplication (2X2 digits) – with exchanges 8. L.P: To use the compact method for multiplication (3digit by 2 digit) 9. L.P: To use the compact method for multiplication (4 digit by 2 digit) 10. L.P: To solve problems using multiplication https://nrich.maths.org/1129?utm_source=primary-map 11. L.P: To explore division. Look at the structures of scaling and repeated subtraction. 12. To recap short division with no remainders (4÷1) 13. To use short division (4÷1 with remainders) 14. To use short division exchanging through 0 (4÷1 with remainders) 15. To use efficient division methods. 16. To identify the role of remainders in word problems. 17. To solve problems using division 18. To solve problems using multiplication and division 19. https://nrich.maths.org/10490?utm_source=primary-map	**Fractions (6 -7 weeks)** **Lesson sequence:** **Block A (support steps)** 1. To understand a fraction 2. To make a whole 3. To find fractions equivalent to a unit fraction 4. To find fractions equivalent to a non-unit fraction 5. To recognise equivalent fractions 6. To convert improper fractions to mixed numbers 7. To convert mixed numbers to improper fractions 8. To compare fractions with the same denominator 9. To compare fractions with the same numerator 10. To compare and order fractions less than 1 11. To compare and order fractions greater than 1 12. To add and subtract fractions with the same denominator 13. To add fractions within 1 14. To add fractions greater than 1 15. To add to a mixed number 16. To add two mixed numbers 17. To subtract fractions 18. To subtract from a mixed number 19. To subtract from a mixed number breaking the whole 20. To subtract 2 mixed fractions **Block B (support steps)** 21. To multiply unit fraction by an integer 22. To multiply non-unit fraction by an integer 23. To multiply mixed numbers by an integer 24. To calculate fractions of a quantity 25. To calculate fractions of an amount 26. To calculate fractions of an amount 27. To find the whole 28. To use fractions as operators	**Decimals & Percentages (2-3 weeks)** **Lesson sequence:** 1. To understand decimals up to 2 decimal places 2. To find equivalent fractions and decimals (tenths) 3. To find equivalent fractions and decimals (hundredths) 4. To find equivalent fractions and decimals 5. To understand thousandths as fractions 6. To understand thousandths as decimals 7. To understand percentages 8. To understand percentages as fractions 9. To understand percentages as decimals 10. To find equivalent fractions, decimals and percentages (tenths/hundredths) 11. To find equivalent fractions, decimals and percentages (solve problems which require knowing percentage and decimal equivalence of ½ ¼ 1/5 2/5 4/5 and those fractions with a denominator of a multiple of 10 or 25 taken from National Curric.)

National Curriculum Statements: ıultiply numbers up to 4 digits by a one- or two-digit number sing a formal written method, including long multiplication or two-digit numbers ıultiply and divide numbers mentally drawing upon known acts ivide numbers up to 4 digits by a one-digit number using the ormal written method of short division and interpret emainders appropriately for the context ecognise and use square numbers and cube numbers, and the otation for squared (^{2}) and cubed (^{3}) 4 x 1 digit multiplication https://nrich.maths.org/1129?utm_source=primary-map After short division: https://nrich.maths.org/10490?utm_source=primary-map	**National Curriculum Statements:** ✓ compare and order 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 and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 = 1 1/5] ✓ read, write, order and compare numbers with up to three decimal places ✓ recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 =6/5 = 1 1/5] ✓ add and subtract fractions with the same denominator and denominators that are multiples of the same number ✓ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	**National Curriculum Statements:** ✓ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths ✓ read and write decimal numbers as fractions [for example, 0.71 = 71/100] ✓ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents ✓ round decimals with two decimal places to the nearest whole number and to one decimal place ✓ read, write, order and compare numbers with up to three decimal places ✓ recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal ✓ solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25

Summer		
Geometry (3 - 4 weeks) Up to 20 lessons	**Measure (3 - 4 weeks)** Up to 20 lessons	**Statistics (1 week)** up to 5 lessons
National Curriculum Statements: ✓ identify 3-D shapes, including cubes and other cuboids, from 2-D representations ✓ know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles ✓ draw given angles, and measure them in degrees ✓ identify: (a) angles at a point and one whole turn (total 360 degrees) (b) angles at a point on a straight line and half a turn (total 180 degrees) (c) other multiples of 90 degrees ✓ use the properties of rectangles to deduce related facts and find missing lengths and angles ✓ distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ✓ 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. **Lesson Sequence:** Mathematics guidance: key stages 1 and 2 (covers years 1 to 6) (publishing.service.gov.uk) pages 265-268 Angles | NCETM 1. To understand and use degrees (including turns) 2. To calculate angles up to 180°. 3. To calculate angles up to 360°. 4. To calculate angles in shapes. 5. To measure angles up to 180°. 6. To measure angles up to 360°. 7. To draw angles	✓ convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) ✓ understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints ✓ estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] ✓ solve problems involving converting between units of time ✓ use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **Lesson Sequence:** Converting units | NCETM L1: To understand Kilograms and kilometres L2: To understand millimetres and millilitres L3: Convert units of length L4: Convert between metric and imperial units L5: To understand cubic centimetres L6: To compare volume L7: To estimate volume L8: To estimate capacity L9: To understand hours, weeks, months and years L10: To tell the time to the nearest 5 minutes L11: To tell the time to the nearest minute L12: To convert time (between 12hr and 24hr) L13: To convert time (between 24hr and 12hr)	**National Curriculum Statements:** ✓ complete, read and interpret information in tables, including timetables ✓ solve comparison, sum and difference problems using information presented in a line graph **Lesson Sequence:** 1. L.P: To interpret one-way and two-way tables. 2. L.P: To interpret bar charts. 3. L.P: To interpret pictograms. 4. L.P: To interpret line graphs. 5. L.P: To interpret dual line graphs.

8. To identify 2D shapes 9. To identify regular and irregular shapes 10. To identify the features of 3D shapes 11. To identify 3D shapes from their nets 12. To reason about 3D shapes 13. To identify lines of symmetry 14. To reflect shapes 15. To read and plot coordinates 16. To reflect using coordinates. 17. To translate shapes 18. To translate using coordinates.	L14: To convert units of time L15: To interpret timetables L16: To calculate with timetables L17: To solve measurement problems using all four operations L18: To solve two-part measurement problems using all four operations Using N.C. strand - To use all four operations to solve problems involving measure (for example length, mass, volume, money) using decimal notation, including scaling	