Year 5 - Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Autumn	**Number:** Place Value			**Number:** Addition & Subtraction			**Number:** Multiplication & Division				**Measure:** Area & Perimeter		**Geometry:** Shape	Consolidate
Spring	**Number:** Fractions					**Geometry:** Angles			**Number:** Decimals & Percentages				Consolidate	
Summer	**Measure:** Convert		**Geometry:** Position & direction	**Statistic:** Interpret info in tables & timetables. Line graph problems		**Measure:** Volume	**Number:** Addition & Subtraction Recap	**Number:** Multiplication & Division Recap	**Number:** Fractions Recap		Consolidate	**Note: attendance statistics lessons will be completed during Sports Week.**		

Place value - Starters 10mins	**Counting** **Week 1** Review Count in multiples of 6. Count in multiples of 7. *Use counting sticks, hundred squares and/or gattegno charts to model counting in multiples of 7s and 6s*	**Counting** **Week 2** Count forwards and backwards in steps of powers of 10 from any given number up to 1 000 000.	**Counting** **Week 3** Count forwards and backwards in steps of powers of 10 from any given number up to 1 000 000.	
Autumn				

NCETM PD Materials		**National Curriculum**
Week 1-3 Place Value **Number- Review of Place Value** and Column addition and Subtraction (up to 4-digits) Spine 1 – 1.22 teaching point 5 to 6 **Number -Place Value** Spine 1 – 1.26 – teaching point from 1 to 6	**Reasoning and problem-solving questions to be completed in this unit- see NCETM reasoning questions.** **Mastery assessment – deep understanding of maths.** 8 questions of varied difficulties to use at the end of the unit. **NCETM- ready to progress year 5- Slides 2 – 5** **Stem sentences to be part of learning walls & recorded in books. Use ping pong effect with**	*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

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<table>
<tr><td>Spine 1- 1.27 Negative numbers Teaching Point 2 to 6

Solve number problems are in all teaching points in Spine 1 (1.22)</td><td colspan="2">children & choral response for recalling maths strategies.</td><td colspan="2">*Read Roman numerals to 1000 (M) and recognise years written in Roman numerals</td></tr>
<tr><td>Week 4 Addition & Subtraction-Starter-10 mins</td><td colspan="2">Using partitioning to add with increasingly larger numbers (move on to bigger numbers as needed) Week 4

432 + 123 = 400 + 100
30 + 20
2+ 3</td><td>Using partitioning to add with increasingly larger numbers (move on to bigger numbers as needed) Week 5

432 + 123 = 400 + 100
30 + 20
2+ 3</td><td>Count on a number line to subtract (move on to bigger numbers as needed). Week 6

300 – 99 =

99 + 1 = 100
100 + 200 = 300

So… 200 + 1 = 201</td></tr>
<tr><td>Week 4 – Addition & Subtraction

Number -Addition and Subtraction

Spine 1 – 1.22 (Year 4) Teaching point 5 and 6 (Revisit if needed according to class)

Spine 1 – 1.29 (Year 5) Teaching point 1 and 2
Teaching point 3 - difference.
Teaching point 6 – estimate, approximate, inverse.
Spine 1 – 1.28 Teaching point 1-4
Common structures & the part part whole relationship
Spine 1 -1.28 multi- step problems</td><td colspan="2">Reasoning and problem-solving questions to be completed in this unit-resources available on NCETM reasoning site.

Mastery assessment – deep understanding of maths. 8 questions of varied difficulties to use at the end of the unit.

Stem sentences to be included & recorded in books.

Use ping pong effect with children & choral response for recalling maths strategy.

Extra resources are available on White Rose.</td><td colspan="2">*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.</td></tr>
<tr><td>Week 7 Multiplication & Division
Starter – 10mins</td><td>X 10, 100 and 1000 mentally. Week 7

Children need to understand that the answer increases in multiplication. The Dienes and the 1, 10, 100, 1000 show</td><td>X 10, 100 and 1000 mentally. Week 8

Children need to understand that the answer increases in multiplication. The Dienes and the 1, 10, 100, 1000 on place value board</td><td>Divide by 10, 100 and 1000 mentally. Week 9

Children need to understand that the answer decreases in division. The Dienes and the 1, 10, 100, 1000 on place value</td><td>Divide by 10, 100 and 1000 mentally. Week 10

Children need to understand that the answer decreases in division. The Dienes and the 1, 10, 100, 1000 on place value board show visually what happens as the digits move right.</td></tr>
</table>

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	visually what happens as the digits move left.	*show visually what happens as the digits move left.*	*board show visually what happens as the digits move right.*
Week 7 Multiplication & Division **Number- Multiplication & Division** Spine 2- 2.21 Teaching points 1-6 (factors, multiples, prime) Spine 2-2.9 (square numbers) Spine 2- 2.13 (multi, divide, 10,100) Spine 2 – 2.19 (10,100,1000) Spine 2 – 2.20 Teaching point 4-5 (1-3 is covered in volume) (cube numbers) Spine 2 – 2.18 Teaching point 1-2 (equivalence) Spine2 – 2.22 Teaching point 1-2 Combining multiplication with addition & subtraction.	**Reasoning and problem-solving questions to be completed in this unit- resources available on the NCETM reasoning site.** **Mastery assessment – deep understanding of maths.** 11 questions of varied difficulties to use at the end of the unit. **NCETM- ready to progress year 5- slides 13-21** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy.** Additional resources available on White Rose.		*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 (nonprime) numbers *Establish whether a number up to 100 is prime 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, including long multiplication for two-digit numbers *Multiply and divide numbers mentally drawing upon known facts *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 and 1000recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) *Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes *Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equal's sign *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Week 11 Area & Perimeter **Starter – 10mins**	***Recognise factor pairs to aid mental calculations*** ***Week 11*** *4x3 = 12* *40 x 3 = 120* *400 x 3=1200*		***Counting in fractions past 1*** ***Week 12*** ***Fraction number linear lines***
Week 11 Area & Perimeter **Measure - Area and Perimeter** Area and Perimeter (Year 4) Spine 2 – 2.16 Teaching point 4-6	**Reasoning and problem-solving questions to be completed in this unit- resources available on the NCETM reasoning site.**		*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

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Geoboards Base 10 -Indian man Oak Academy- Maths Year 5; section 38 Area- 5 lessons	**Mastery assessment – deep understanding of maths.** 2 questions of varied difficulties to use at the end of the unit. **NCETM- ready to progress year 5- slides 30&31** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy.** Additional resources available on White Rose.	centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
Week 13 Geometry **Starter – 10mins**	**Multiples and Factors Week 13** *Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.*	
Week 13 Geometry Review 2-D shapes then move on to 3-D shapes- use empty packaging – Toblerone, toothpaste box etc. Identifying nets and creating their own. Oak Academy - Year 5 Geometry – Unit 6 – 2D & 3D shapes – Lesson 9 to build simple 3D shapes. Identify 3-D shape, including cubes and other cuboids, from 2-D representations.	**Reasoning and problem-solving questions to be completed in this unit.** **Mastery assessment – deep understanding of maths.** 2 questions of varied difficulties to use at the end of the unit. **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy.**	*Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
Week 14 Consolidate **Starter – 10mins**		
Spring		
Week 1- Fractions **Starter – 10mins**		

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Week 1 – Number: Fractions Spine 3- 3.6 Teaching point 1-5 Multiplying whole numbers & fractions Spine 3- 3.7 Teaching points 1-2 (recap only) & teaching point 3 Spine 3- 3.8 Teaching points 1-5 common denominator: more adding & subtracting	**Reasoning and problem-solving questions to be completed in this unit- check out Ncetm reasoning site.** **Mastery assessment – deep understanding of maths.** 18 questions of varied difficulties to use at the end of the unit. **Ncetm- ready to progress year 5- slides 22-27** **Stem sentences to be included & recorded in books. Use ping pong effect with children & choral response for recalling maths strategy.**	*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, 5 2 + 5 4 = 5 6 = 1 5 1] *Compare and order fractions whose denominators are all multiples of the same number *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
Week 6- Geometry **Starter – 10mins**		
Week 6 – Geometry: Angles Ncetm- Power point- Angles Year 5, Unit 10 Split pin angle measure to make. Oak Academy- Maths Year 5; section 51 Angles- 15 lessons	**Reasoning and problem-solving questions to be completed in this unit- check out NCETM reasoning site.** **Mastery assessment – deep understanding of maths.** 2 questions of varied difficulties to use at the end of the unit. **NCETM- ready to progress year 5- slides 28-29** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy.**	*Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles *Draw given angles, and measure them in degrees (o) *Identify: *Angles at a point and one whole turn (total 360o) *Angles at a point on a straight line and 2 1 a turn (total 180o) *Other multiples of 90o *Use the properties of rectangles to deduce related facts and find missing lengths and angles
Week 9- Decimals/% **Starter – 10mins**		

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Week 9- Number: Decimals/% Spine 1-1.24 Teaching points 1-7 Recap from year 4 Teaching point 8 can be used as a starting point in year 5 Spine 2- 2.19 Teaching points 1-5 Calculation; multiply & divide decimal fractions by whole numbers	**Reasoning and problem-solving questions to be completed in this unit- check out NCETM reasoning site.** **NCETM- ready to progress year 5- slides 26-27** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategies.**	*Read and write decimal numbers as fractions [for example, 0.71 = 100 71) *Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalent *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 *Solve problems involving number 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 2 1, 4 1, 5 1, 5 2, 5 4 and those fractions with a denominator of a multiple of 10 or 25.
Week 13 Consolidate		
Starter - 10 mins		
Summer		
Week 1 - Measure **Starter – 10mins**		
Week 1- Measure: Conversion NCETM- Power point- Conversion Year 5, Unit 9 Oak Academy- Maths Year 5; section 50 Conversion- 10 lessons	**Reasoning and problem-solving questions to be completed in this unit- check out NCETM reasoning site.** **Mastery assessment – deep understanding of maths.** 4 questions of varied difficulties to use at the end of the unit. **NCETM- ready to progress year 5- slides 9-10** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy**	*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 *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.

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Week 3 Geometry **Week 3-Starter – 10mins**		
Week 3: Geometry- Position & direction Oak Academy- Maths Year 5; section 51 Angles- 15 lessons	**Reasoning and problem-solving questions to be completed in this unit- check out NCETM reasoning site.** **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy**	*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.
Week 4: Statistics **Starter – 10mins**		
Week 4 – Statistics Attendance Data for whole school	Whole school attendance statistic.	*Solve comparison, sum and difference problems using information presented in a line graph *Complete, read and interpret information in tables, including timetables.
Week 6: Measure **Starter – 10mins**		
Week 6- Measure: Volume Spine 2- 2.20 Teaching points 1-3 Multiplication with three factors & volume Oak Academy- Maths Year 5; section 42 Volume- 5 lessons	**Reasoning and problem-solving questions to be completed in this unit- NCETM site.** **Mastery assessment – deep understanding of maths.** 2 questions of varied difficulties to use at the end of the unit. **Stem sentences to be included & recorded in books.** **Use ping pong effect with children & choral response for recalling maths strategy**	*Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water] *Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

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Week 7: Addition & subtraction **Starter – 10mins**		
Week 7 – Number: Addition & Subtraction Recap		Notes and guidance (non-statutory) Pupils practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency. They practise mental calculations with increasingly large numbers to aid fluency (for example, 12 462 – 2300 = 10 162).
Week 8: Multiply & division **Starter – 10mins**		
Week 8- Number: Multiply & Division Recap		Notes and guidance (non-statutory) Pupils practise and extend their use of the formal written methods of short multiplication and short division. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations. They use and understand the terms factor, multiple and prime, square and cube numbers. Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, 98 ÷ 4 = 4 98 = 24 r 2 = 24 2 1 = 24.5 ≈ 25). Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres. They 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 2 x 35; 3 x 270 = 3 x 3 x 9 x 10 = 92 x 10). Pupils use and explain the equals sign to indicate equivalence, including in missing number problems (for example, 13 + 24 = 12 + 25; 33 = 5 x).
Week 9- Fractions **Starter – 10mins**		

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Week 9- Number: Fractions Recap		Notes and guidance (non-statutory) Pupils should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions. They extend their knowledge of fractions to thousandths and connect to decimals and measures Pupils should make connections between percentages, fractions and decimals (for example, 100% represents a whole quantity and 1% is 100 1 , 50% is 100 50 , 25% is 100 25) and relate this to finding 'fractions of'.
Week 11 Consolidate		
Starter – 10 mins		