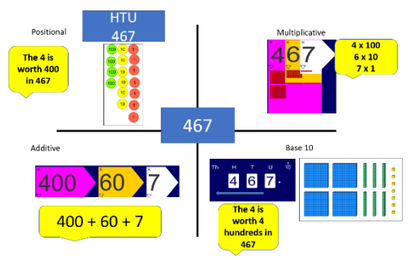
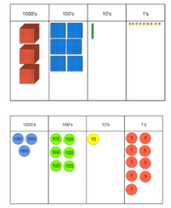
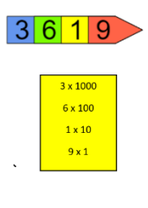
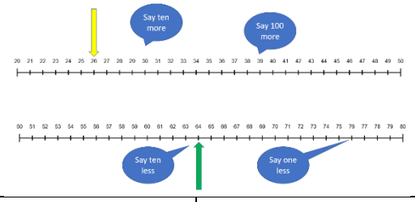
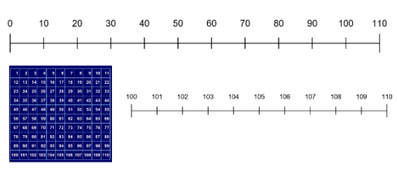
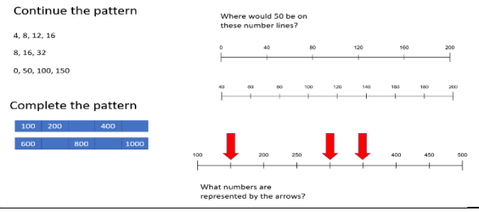
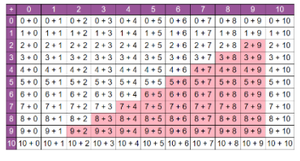
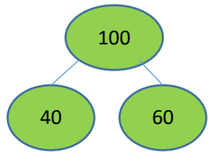
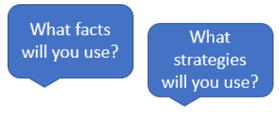
. WRPS Maths Medium Term Planning: Autumn Term Year 3 Year 4

Week.	Mathematical aspect	Non-negotiable end points Year 3.	Non-negotiable end points Year 4.	Curriculum statements – Year 3.	Curriculum Statements. Year 4.
1.	Number and place value: properties of place value,	Knows the properties of place value for three-digit numbers.	Knows the properties of place value for four-digit numbers.	● To recognise the place value of each digit in a three-digit number (hundreds, tens, ones). ● To compare and order numbers up to 1000. ● To read and write numbers up to 1000 in numerals and in words.	● To recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). ● To order and compare numbers beyond 1000.
Links to resources and policy documents:   				400 + 90 + 2 492 Four hundred and ninety two 500 + 40 + 7 547 Five hundred and forty seven 200 + 4 204 Two hundred and four	Arrange the given digits to make a number that meets the given criteria. Between 3000 and 3500: **2, 9, 3, 4** TH H T O
2.	Counting and estimating	Knows how to count in step sizes and estimate numbers up to 1000.	Knows the rules of rounding.	● To count from 0 in multiples of 4, 8, 50 and 100, finding 10 or 100 more or less than a given number. ● To identify, represent and estimate numbers using different representations	● To identify, represent and estimate numbers using different representations. ● To round any number to the nearest 10, 100 or 1000. ● To count in multiples of 6, 7, 9, 25, 1000. ● To find 1000 more or less than a given number.
 					Say whether each number on the number line is closer to 500 or 600. 500 535 556 568 600 Round 535, 556 and 568 to the nearest 100 Use the stem sentence: ____ rounded to the nearest 100 is ____ .
3.	Addition and Subtraction: mental methods	Knows bonds to 20 and 100. Knows how to add/subtract multiples of 10, 100 from three-digit numbers.	Knows efficient methods for addition and subtraction up to and including four-digit numbers.	●To add and subtract numbers mentally, including: ● a three-digit number and ones ● a three-digit number and tens ● a three-digit number and hundreds. ● To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	●To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Links to calculation policy mental methods: **Near doubles** **13+14 =** **Double 13= 26** **26+1 =27** **or** **Double 14 =28** **28-1=27** **Using known facts** **40 + 80 = 120 using 4 + 8 = 12** **So, 400 + 800 = 1200** **Remodelling strategy** 243 + 198 241 + 200 = 441  				Which digit changes and which stay the same? 543 + 1 543 - 1 543 + 10 543 - 10 543 + 100 543 - 100  376 + 4 695 + 8 376 + 20 695 + 30 376 + 400 695 + 600	Write <, > or = in each of the circles to make the number sentences correct: 3,456 + 789 ◯ 1,810 + 2,436 2,829 + 1,901 ◯ 2,312 + 2,418 7,542 + 1,858 ◯ 902 + 8,496 1,818 + 1,999 ◯ 3,110 + 707

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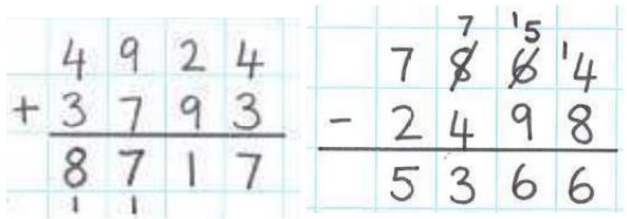
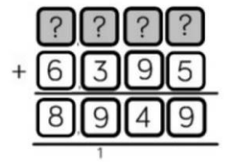
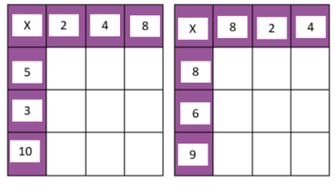
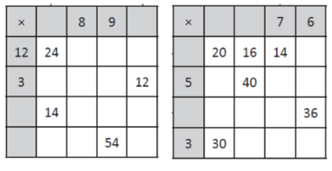
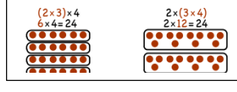
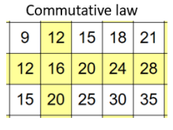
4.	Addition and Subtraction: Written methods 2 and 3 digit numbers, column methods.	Knows how to calculate with columnar methods.	Knows efficient methods for addition and subtraction up to and including four-digit numbers.	● To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	●To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ● To estimate and use inverse operations to check answers to a calculation.
Links to resources and policy documents: **Columnar addition** **Columnar subtraction** 625 + 48 = 673 (1) 184 − 286 = 468 Exchange from tens to ones, hundreds to tens Regroup the 10 				Show how to add and subtract these numbers with 324. 675 43 900 127 Which method? 400 + 300 600 – 200 492 + 36 492 – 236 5□3 + 134 = 69□ What are the missing digits? 56□ − 134 = 429	Daniel buys a new laptop costing £1,265. He also buys a new mobile phone costing £492. What is the total cost? His friend, Paul, buys a smart watch for £342. How much money have they spent altogether? Complete the missing numbers. 4□6□ + 25□1 = □789 4578 − 3643 = ____ What is the missing four digit number? 
5.	Multiplication and division: Table facts mental methods.	Knows the 2, 4- and 8-times tables and the doubling patterns. Knows how to multiply using partitioning.	Knows and applies table facts for recall of multiplication and division facts for multiplication tables up to 12 × 12.	● To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental methods.	● To recall multiplication facts for multiplication tables up to 12 × 12. ● To use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together three numbers. ● To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which *n* objects are connected to *m objects.*
Links to resources and policy documents:  Fill in the multiplication and division tables by working out the missing digits. 				3 x 4 x 2 = 24 Jane did 3 x 4 then doubled for x2. James did 4 x 2 = 8, then 8 x 3. **Associativity** (2 x 3) x 4 = 2 x (3 x 4)  Commutative law 	3) Match each calculation to a valid strategy and then to the answer. 7 × 8 8 × 6 5 × 8 8 × 9 9 × 4 × 2 8 × 3 × 2 7 × 4 × 2 5 × 2 × 2 × 2 56 72 40 48

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7 × 9 = 63 9 × 7 = ☐ 63 ÷ ☐ = 9 ☐ ÷ 9 = 7					
6.	Multiplication and division: written methods partitioning and rearranging the dividend	Knows how to partition numbers when multiplying. Knows how to rearrange dividends into multiples of the divisor.	Knows how to multiply/divide two-digit and three-digit numbers by one-digit numbers using expanded or formal written methods of short multiplication and division.	● To recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Explain the effect of multiplying by 10 and multiples of 10 ● To write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. ● To solve problems, including missing number problems, involving multiplication and division, including integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects.	● To multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ● To solve problems involving multiplying and adding, including using the distributive law and harder multiplication problems such as which *n* objects are connected to *m objects.*
Links to resources and policy documents: **Grid method** 23 x 8 = 20 x 8 =160 3 x 8 = 24 23 x 8= 184 x 20 3 8 **Short multiplication** Expanded 23 x 8 24 (8 x3) 160 (8 x20) 184 **Rearranging the dividend to find multiples of the divisor.** 48 ÷ 3 = "What do I know about the 3 x tables?" "I know 3 x 10 = 30 and 3 x 6 = 18." 48 ÷ 3 = 16 492 ÷ 4 = ? 123 4 492 453 x 6 = 2718 (6 x 3) (6 x 50) (6 x 400)				**Using known facts** **If 3 x 2 = 6, then 30 x 2 = 60, 60 ÷3 = 20 and 30 = 60 ÷ 2.** **Partitioning** **Informal recording of partitioned numbers** **15 x 5 = 75** **10 x 5 = 50** **5 x 5 = 25** 14 x 5 10 x 5 4 x 5 Solve these equations 75 x 5 = 36 x 4 = 22 x 8 = Partitioning Solve these equations 95 ÷ 5 = 56 ÷ 4 = 84 ÷ 2 = Rearranging the dividend	1. Work out the following calculations. You can use the square grid to help. a) 67 × 5 b) 58 × 4 c) 244 × 3 d) 325 × 6 186 ÷ 6 = 031 no groups of 6 can be made 3 × 6 = 18 1 × 6 = 6	
7.	Geometry: properties of shape, 2D and 3D	Know the mathematical names and properties of 2d and 3d shapes including parallel and perpendicular lines.	Knows how to describe and classify shapes using mathematical properties.	● To draw 2D shapes and make 3D shapes using modelling materials; recognise 3D shapes in different orientations and describe them with increasing accuracy. ● To identify horizontal, vertical, perpendicular and parallel lines in relation to other lines.	● To compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. ● To identify lines of symmetry in 2D shapes presented in different orientations. ● To complete a simple symmetric figure with respect to a specific line of symmetry.
Links to resources and policy documents:				Shape / Number of sides / Number of right angles / Pairs of parallel lines Square / 4 / 4 / 2 Rectangle / 4 / 4 / 2 Triangle / 3 / 1 / 0 Pentagon / 5 / 0 / 0 Hexagon / 6 / 0 / 0	

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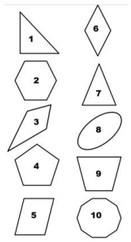
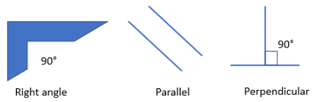
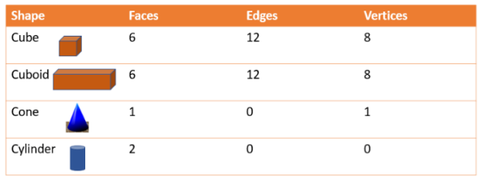
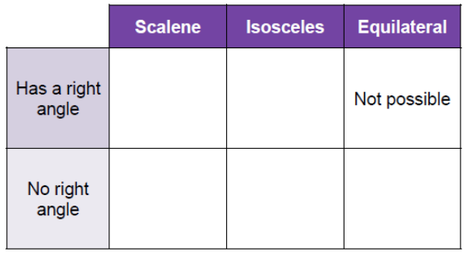
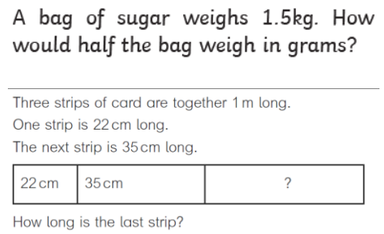
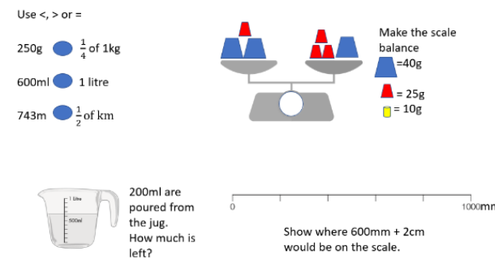
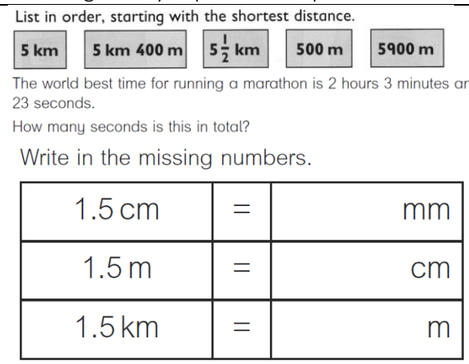
 What is the **name** of the shape? What kind of shape is it and what are the **properties** of the shape? • Is it a polygon? • Is it a regular or irregular polygon? • Are all the sides of equal length and are all the angles equal? • How many sides are there? • Are there any parallel sides..... how many pairs of parallel sides? • Are there any perpendicular sides.....how many? • Are there any right angles..... how many? • (With triangles) Are there any obtuse or acute angles? • Are there any lines of symmetry..... how many? 					Try to draw a triangle for each section of the table. 
8.	Measurement: converting between units of measure	Knows the relationships between the units of measure for each aspect.	Knows how to multiply and divide to convert between units of measure.	● To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	● To convert between different units of measure (for example, kilometre to metre; hour to minute). ● To estimate, compare and calculate different measures, including money in pounds and pence
Links to resources and policy documents: 					
9.	Measurement: Time 12-hour clock am/pm	Knows how to read the time to the nearest minute. Knows that the 12-hour clock can represent am or pm. Knows the passing of time can be calculated as time durations.	Knows how to read, write and convert time between analogue and digital 12- and 24-hour clocks.	● To tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. ● To estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as am/pm, morning, afternoon, noon and midnight. ● To know the number of seconds in a minute and the number of days in each month, year and leap year. ● To compare durations of events, for example to calculate the time taken by particular events or tasks	● To read, write and convert time between analogue and digital 12- and 24-hour clocks. ● To solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days

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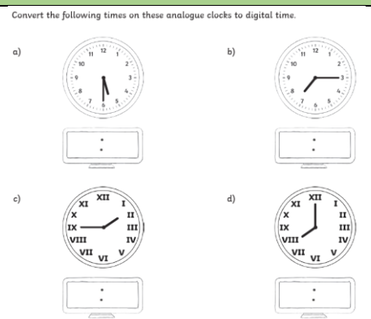
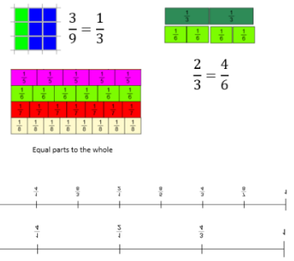
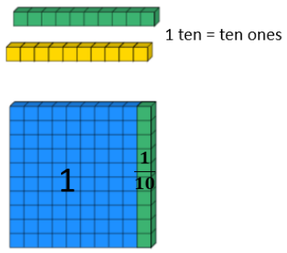
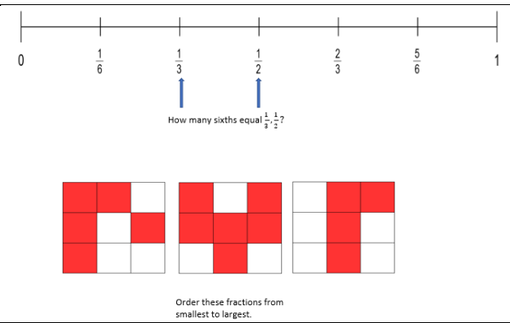
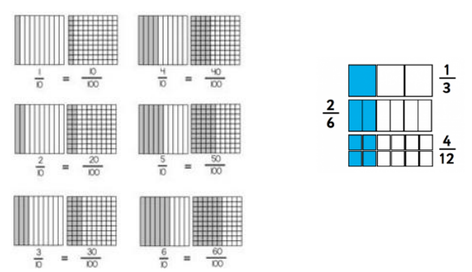
 One minute interval. Am and pm, morning , afternoon, noon, midnight 7 o'clock 7:00 pm 19:00 Half past 1 1:30 am 01:30 Ten past 2 10:10 pm 22:10				Draw these times on a clock face 26 minutes past one 14 minutes to seven 12 minutes past 9 Put these times on order starting at midnight *5 past two, am* *7 minutes to 6, pm* *Quarter to 9, am* *Half past 11, pm* *25 to 8, pm*	
10.	Fractions: finding hundredths and families of common equivalents representing, comparing and ordering of unit fractions of shapes and numbers.	Knows that fractions are relative to the whole and can be represented in different ways	Knows how to connect hundredths to tenths and place value and decimal measure. Knows how to connect tables knowledge to families of common equivalents.	● To recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ● To recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. ● To compare and order unit fractions, and fractions with the same denominators. ● To solve problems that involve all of the above.	● To count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten. ● To solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. ● To recognise and show, using diagrams, families of common equivalent fractions.
  				 	
11.	Addition and subtraction: written methods including money in pounds and pence.	Knows how to calculate with columnar methods.	Knows how to add and subtract using standard written algorithms including in the context of money.	● To add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction. ● To estimate the answer to a calculation and use inverse operations to check answers. ● To solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.	● To add and subtract numbers with up to four digits using the efficient written methods of columnar addition and subtraction where appropriate. ● To solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
Links to resources and policy documents: £3.22 + £5.71 = £8.93 £3.22 +£5.71 £8.93 £8.93 -£5.71 £3.22				Which is the correct notation? £567.54p £567.54	Fill in the missing number. 3197 + ☐ = 7410 Jim has approximated the answer to 91 964 + 17 540 as 92 000 + 17 500 = 109 500. ✓ the level of accuracy to which Jim is working: Nearest 10 Nearest 100 Nearest 1000

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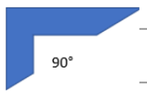
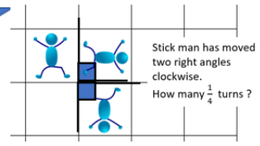
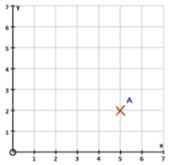
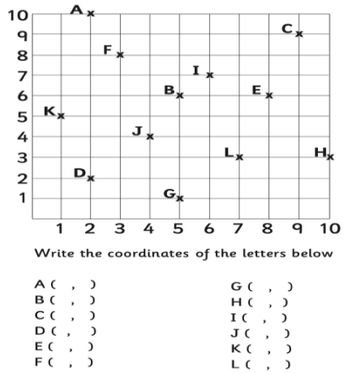
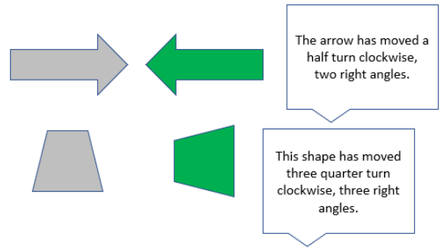
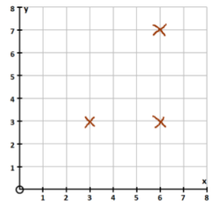
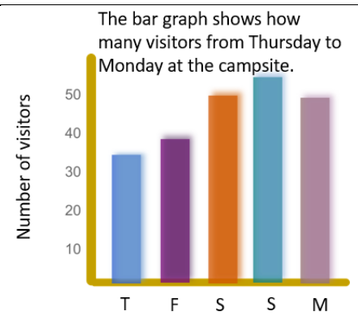
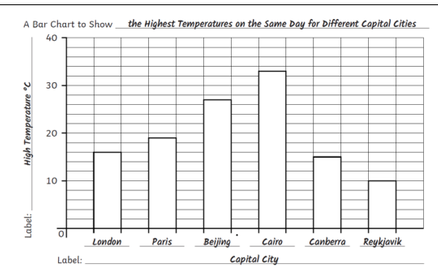
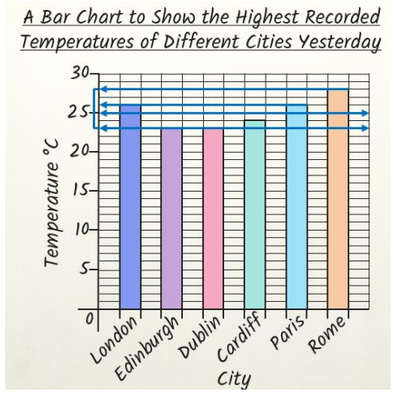
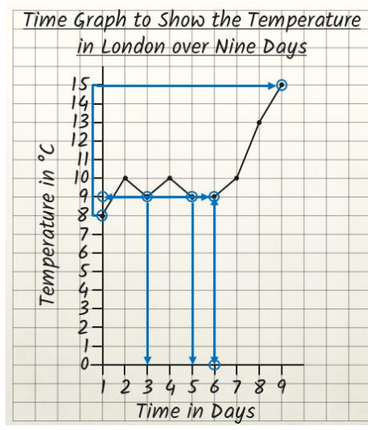
Using £ notation and the decimal point £ 678.00 - £ 126.00 752.00 Lining up the place value. £ 345.00 + £ 62.98 407.98				Dan buys two presents. How much change does he get from £10? Show your working. 	If we know 3,450 + 4,520 = 7,970, what other addition and subtraction facts do we know? ___ + ___ = ___ ___ − ___ = ___ ___ − ___ = ___ You have £5. 70 in your piggy bank and you save up another £6.40. How much money do you now have in total?
12.	Geometry: Position and direction	Knows how to describe position and movement using right angles for quarter turns.	Knows how to draw a pair of axes in one quadrant, with equal scales and integer labels. Knows how to read, write and use pairs of coordinates.	To describe position and movement using clockwise, anti-clockwise, left and right. (Last met in Y2) To describe position and movement using the correct terms.	● To describe positions on a 2D grid as coordinates in the first quadrant. ● To plot specified points and draw sides to complete a given polygon.
 Right angle    Write the coordinates of the letters below A (,) B (,) C (,) D (,) E (,) F (,) G (,) H (,) I (,) J (,) K (,) L (,)				3. Katrina has marked three points on a grid. Richard says, *"You can make a square if you put another cross at (3, 8)"* Is Richard correct? How do you know? 
13.	Statistics: read, present and interpret pictograms and tables Discrete and continuous data	Knows how to read varying representations of discrete data. Knows how to use a simple scale.	Knows how to correctly present data using appropriate graphical methods	● To interpret and present data using bar charts, pictograms and tables ● To solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables.	● To interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ● To solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs.
Links to resources and policy documents:					 Which capital city had the highest temperature? What was the difference in temperature between Paris and Beijing? Which two capital cities had a temperature difference of 11 degrees?

. WRPS Maths Medium Term Planning: Autumn Term Year 3 Year 4

Week.	Mathematical aspect	Non-negotiable end points Year 3.	Non-negotiable end points Year 4.	Curriculum statements – Year 3.	Curriculum Statements. Year 4.