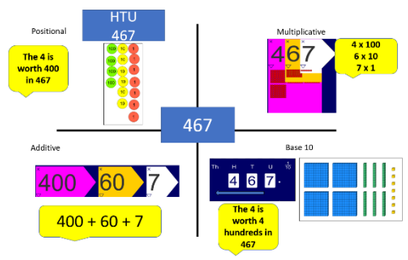
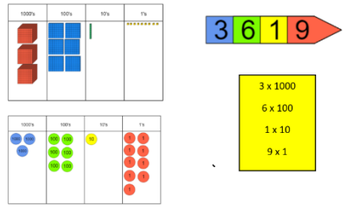
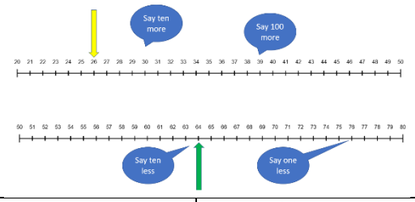
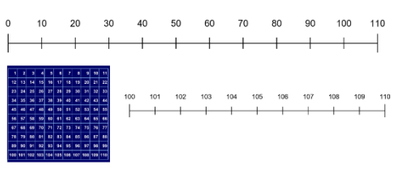
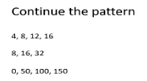
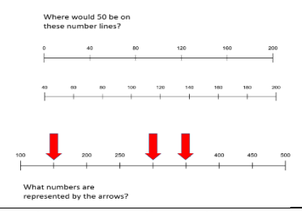
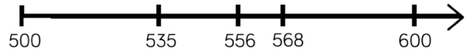
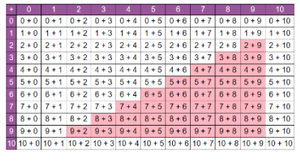
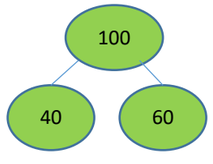
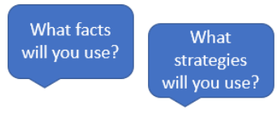
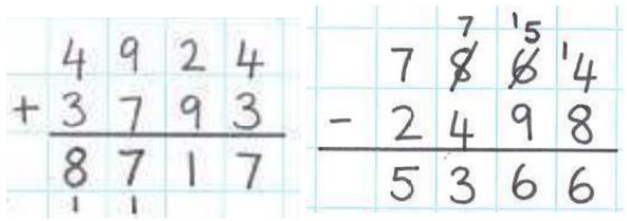
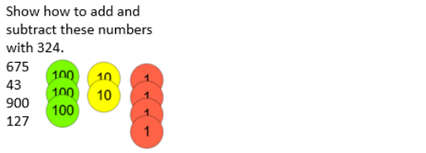
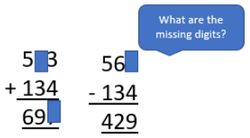
Medium Term Planning: Autumn term – Y3/4.

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.  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

Medium Term Planning: Autumn term – Y3/4.

<table>
<tr>
<td>4.</td>
<td>Addition and Subtraction:
Written methods 2 and 3 digit numbers, column methods.</td>
<td>Knows how to calculate with columnar methods.</td>
<td>Knows efficient methods for addition and subtraction up to and including four-digit numbers.</td>
<td>● 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.</td>
<td>●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.</td>
</tr>
<tr>
<td colspan="3">Links to resources and policy documents:
Columnar addition
625
+ 48
673
1
Regroup the 10
Columnar subtraction
Exchange from tens to ones, hundreds to tens
714
- 286
468
  </td>
<td colspan="2"> 
Which method?
400 + 300
600 – 200
492 + 36
492 – 236
 
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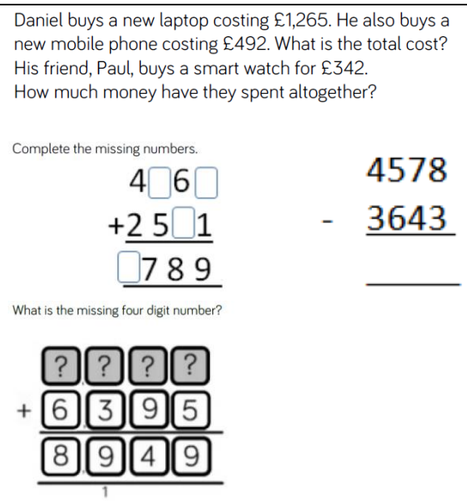
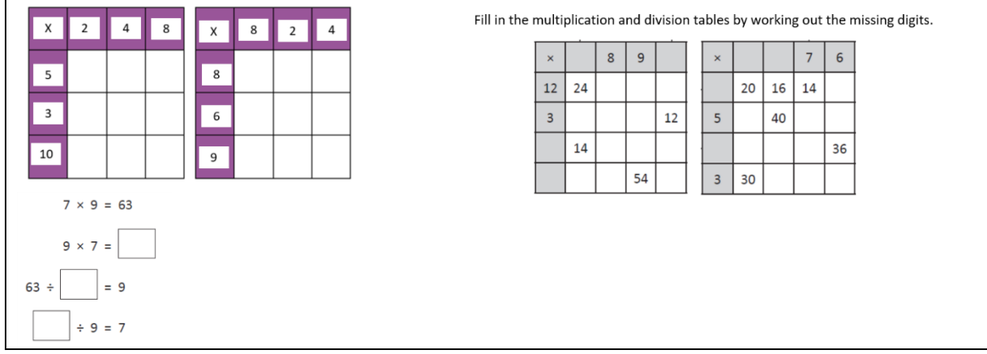
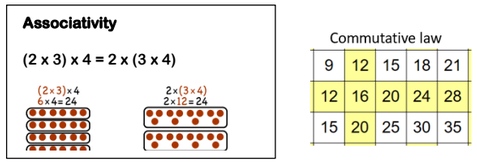
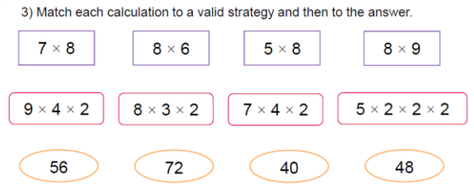
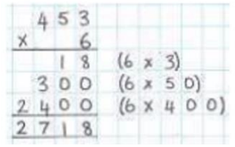
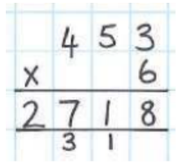
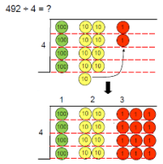
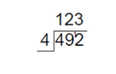
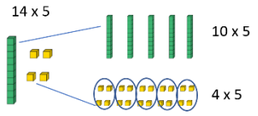
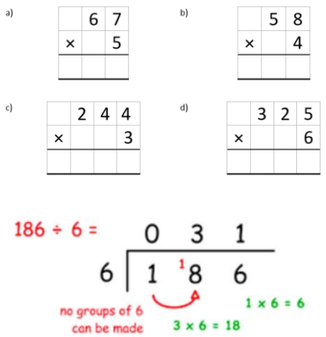
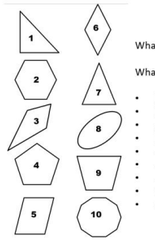
<td>  </td>
</tr>
<tr>
<td>5.</td>
<td>Multiplication and division:
Table facts mental methods.</td>
<td>Knows the 2, 4- and 8-times tables and the doubling patterns.
Knows how to multiply using partitioning.</td>
<td>Knows and applies table facts for recall of multiplication and division facts for multiplication tables up to 12 × 12.</td>
<td>● 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.</td>
<td>● 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.</td>
</tr>
<tr>
<td colspan="3">Links to resources and policy documents:
  </td>
<td colspan="2">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.
  </td>
<td>  </td>
</tr>
</table>

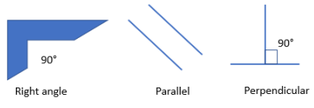
Medium Term Planning: Autumn term – Y3/4.

<table>
<tr><td>6.</td><td>Multiplication and division: written methods partitioning and rearranging the dividend</td><td>Knows how to partition numbers when multiplying.
Knows how to rearrange dividends into multiples of the divisor.</td><td>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.</td><td>● 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.</td><td>● 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.</td></tr>
<tr><td colspan="4">Links to resources and policy documents:
Grid method
23 x 8 =
20 x 8 =160
3 x 8 = 24
23 x 8= 184
<table><tr><td>x</td><td>20</td><td>3</td></tr><tr><td>8</td><td></td><td></td></tr></table>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?"<br>"I know 3 x 10 = 30 and 3 x 6 = 18."
30 18
10 6
48 ÷ 3 = 16
 
 
 
 

123
4 492</td><td colspan="2">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
 

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</td><td>1. Work out the following calculations. You can use the square grid to help.
 

</td></tr>
<tr><td>7.</td><td>Geometry: properties of shape, 2D and 3D</td><td>Know the mathematical names and properties of 2d and 3d shapes including parallel and perpendicular lines.</td><td>Knows how to describe and classify shapes using mathematical properties.</td><td>● 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.</td><td>● 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.</td></tr>
<tr><td colspan="4">Links to resources and policy documents:
 

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?
 
</td><td colspan="2"><table><tr><th>Shape</th><th>Number of sides</th><th>Number of right angles</th><th>Pairs of parallel lines</th></tr><tr><td>Square</td><td>4</td><td>4</td><td>2</td></tr><tr><td>Rectangle</td><td>4</td><td>4</td><td>2</td></tr><tr><td>Triangle</td><td>3</td><td>1</td><td>0</td></tr><tr><td>Pentagon</td><td>5</td><td>0</td><td>0</td></tr><tr><td>Hexagon</td><td>6</td><td>0</td><td>0</td></tr></table><table><tr><th>Shape</th><th>Faces</th><th>Edges</th><th>Vertices</th></tr><tr><td>Cube</td><td>6</td><td>12</td><td>8</td></tr><tr><td>Cuboid</td><td>6</td><td>12</td><td>8</td></tr><tr><td>Cone</td><td>1</td><td>0</td><td>1</td></tr><tr><td>Cylinder</td><td>2</td><td>0</td><td>0</td></tr></table></td><td>Try to draw a triangle for each section of the table.
<table><tr><th></th><th>Scalene</th><th>Isosceles</th><th>Equilateral</th></tr><tr><td>Has a right angle</td><td></td><td></td><td>Not possible</td></tr><tr><td>No right angle</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>8.</td><td>Measurement: converting between units of measure</td><td>Knows the relationships between the units of measure for each aspect.</td><td>Knows how to multiply and divide to convert between units of measure.</td><td>● To measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</td><td>● 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</td></tr>
</table>

Medium Term Planning: Autumn term – Y3/4.

<table>
<tr>
<td colspan="4">Links to resources and policy documents:

<table>
<tr><td>1km</td><td>1000 m</td></tr>
<tr><td>1m</td><td>100 cm</td></tr>
<tr><td>1cm</td><td>10 mm</td></tr>
<tr><td>1 kg</td><td>1000g</td></tr>
<tr><td>1 l</td><td>1000ml</td></tr>
</table>

A bag of sugar weighs 1.5kg. How much would half the bag weigh in grams? ___

Three strips of card are together 1 m long.
One strip is 22 cm long.
The next strip is 35 cm long.
<table>
<tr><td>22 cm</td><td>35 cm</td><td>?</td></tr>
</table>
How long is the last strip?</td>
<td>Use <, > or =
250g ● $\frac{1}{4}$ of 1kg
600ml ● 1 litre
743m ● $\frac{1}{2}$ of km

Make the scale balance
=40g
= 25g
= 10g

200ml are poured from the jug.
How much is left?

Show where 600mm + 2cm would be on the scale.</td>
<td>List in order, starting with the shortest distance.
5 km | 5 km 400 m | 5 ½ km | 500 m | 5900 m
The world best time for running a marathon is 2 hours 3 minutes and 23 seconds.
How many seconds is this in total?

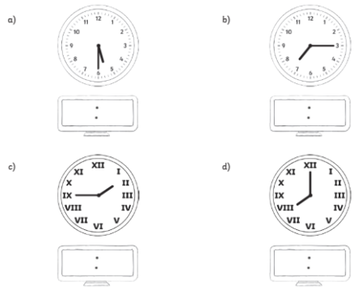
Write in the missing numbers.
<table>
<tr><td>1.5 cm</td><td>=</td><td>mm</td></tr>
<tr><td>1.5 m</td><td>=</td><td>cm</td></tr>
<tr><td>1.5 km</td><td>=</td><td>m</td></tr>
</table></td>
</tr>
<tr>
<td>9.</td>
<td>Measurement:
Time
12-hour clock am/pm</td>
<td>Knows how to read the time to the nearest minute.
Knows that the 12-hour clock can represent am or pm.
Knows the passing of time can be calculated as time durations.</td>
<td>Knows how to read, write and convert time between analogue and digital 12- and 24-hour clocks.</td>
<td>● 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</td>
<td>● 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</td>
</tr>
<tr>
<td colspan="4">
One minute interval.
Am and pm, morning , afternoon, noon, midnight

7 o'clock
7:00 pm
19:00

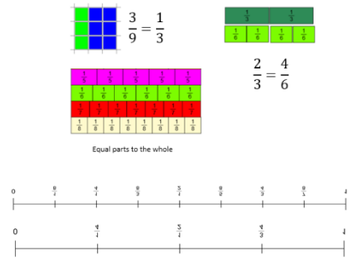
Half past 1
1:30 am
01:30

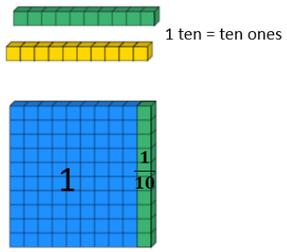
Ten past 2
10:10 pm
22:10</td>
<td>Draw these times on a clock face
26 minutes past one
14 minutes to seven
12 minutes past 9

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</td>
<td>Convert the following times on these analogue clocks to digital time.
 </td>
</tr>
<tr>
<td>10.</td>
<td>Fractions:
finding hundredths and families of common equivalents representing, comparing and ordering of unit fractions of shapes and numbers.</td>
<td>Knows that fractions are relative to the whole and can be represented in different ways</td>
<td>Knows how to connect hundredths to tenths and place value and decimal measure.
Knows how to connect tables knowledge to families of common equivalents.</td>
<td>● 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.</td>
<td>● 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.</td>
</tr>
</table>

Medium Term Planning: Autumn term – Y3/4.

<table>
<tr>
<td colspan="4"> 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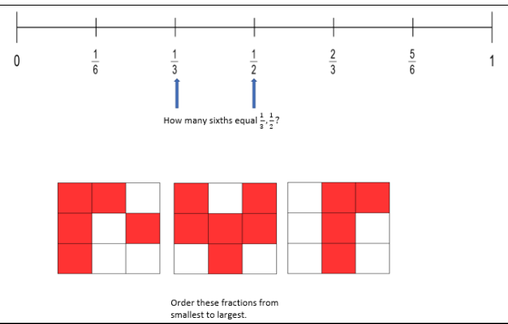
<td> 
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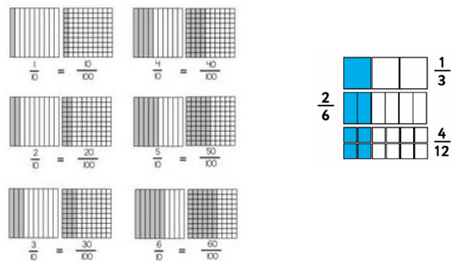
<td> 
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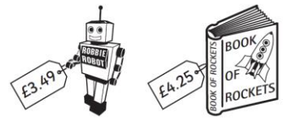
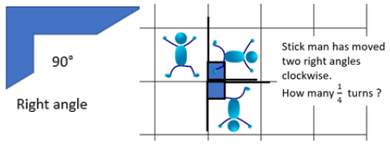
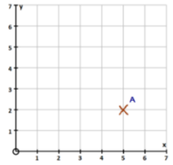
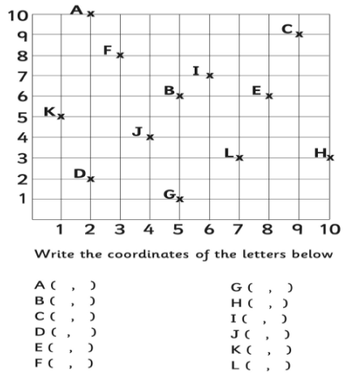
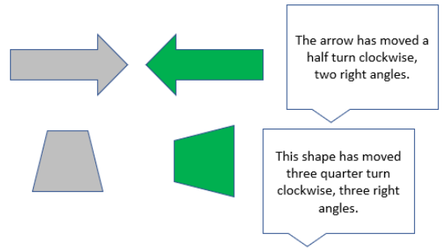
<tr>
<td>11.</td>
<td>Addition and subtraction: written methods including money in pounds and pence.</td>
<td>Knows how to calculate with columnar methods.</td>
<td>Knows how to add and subtract using standard written algorithms including in the context of money.</td>
<td>● To add and subtract numbers 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.</td>
<td>● 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.</td>
</tr>
<tr>
<td colspan="4">Links to resources and policy documents:
£3.22 + £5.71 = £8.93
£3.22 +£5.71 £8.93
£8.93 -£5.71 £3.22
Using £ notation and the decimal point
£ 678.00
- £ 126.00
752.00
Lining up the place value.
£ 345.00
+ £ 62.98
407.98</td>
<td>Which is the correct notation?
£567.54p
£567.54
Dan buys two presents.
How much change does he get from £10?
Show your working.
 
</td>
<td>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
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?
 </td>
</tr>
<tr>
<td>12.</td>
<td>Geometry: Position and direction</td>
<td>Knows how to describe position and movement using right angles for quarter turns.</td>
<td>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.</td>
<td>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.</td>
<td>● 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.</td>
</tr>
</table>

Medium Term Planning: Autumn term – Y3/4.







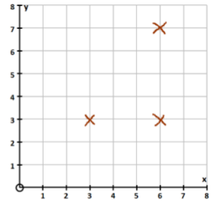


3. Katrina has marked three points on a grid.

Richard says,

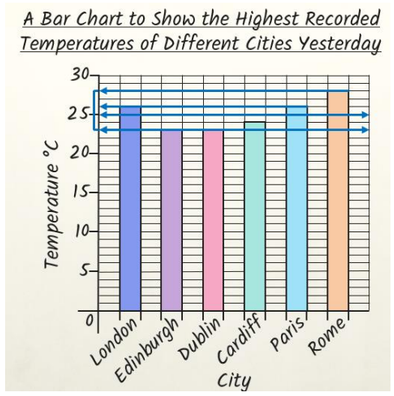
"You can make a square if you put another cross at (3, 8)"

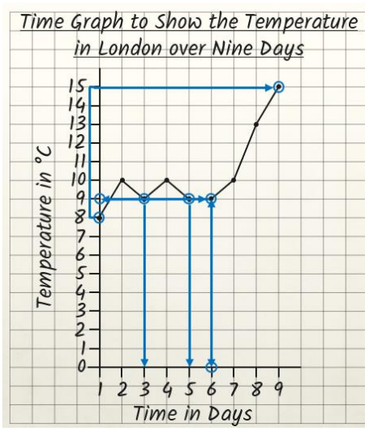
Is Richard correct? How do you know?

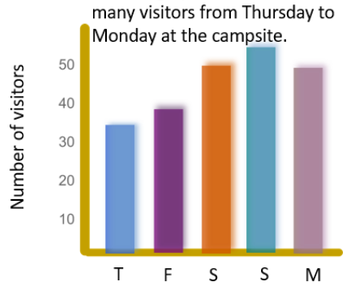


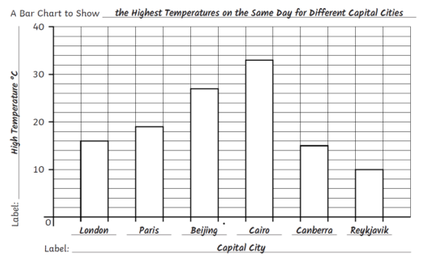
13.	Statistics: read, present and interpret pictograms and tables Discrete and continuous data	Knows how to read varying representations of discrete data. Knows how to use a simple scale.	Knows how to correctly present data using appropriate graphical methods	● To interpret and present data using bar 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?