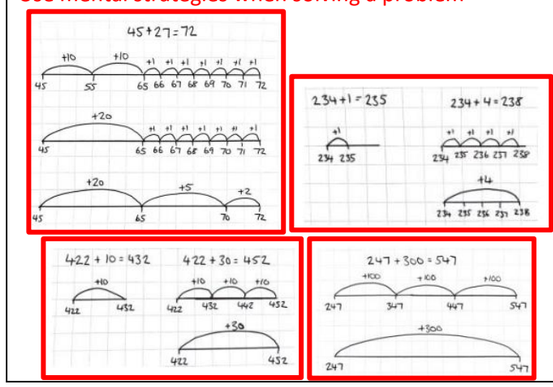
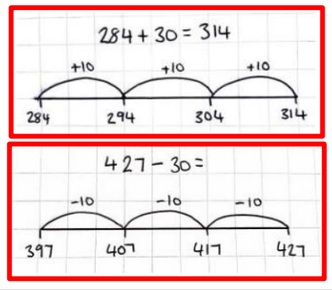
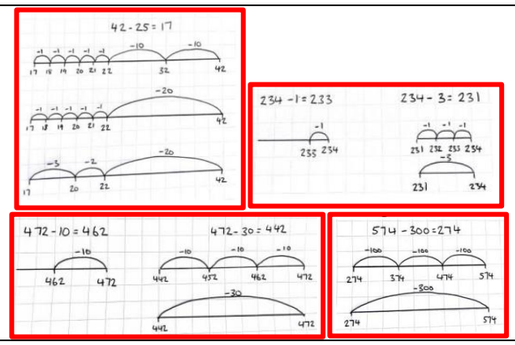
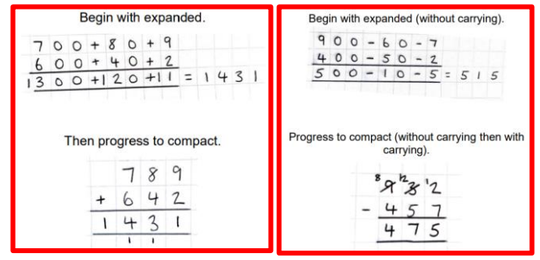
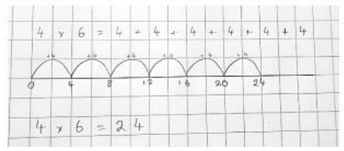
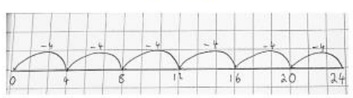
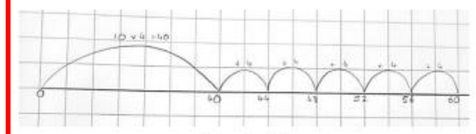
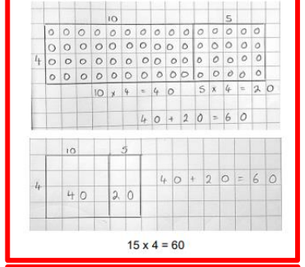
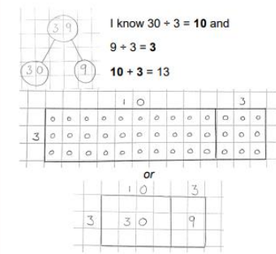
Year 3 Maths Milestones

Milestone 1	Milestone 2	Milestone 3	End of year
Number: Number and place value			
Key Number Facts: Know the sequence of counting in 50's Know the sequence of counting in 100's			
		3.9/3.11 Count from zero in multiples of 4, 8, 50 and 100.	3.14 Count from zero in multiples of 4, 8, 50 and 100.
3.1 Recognise the place value of each digit in the 3-digit number (hundreds, tens and ones) up to 1000.	3.5 Recognise the place value of each digit in a three-digit number (hundreds, tens and ones)	3.11 Recognise the place of each digit in a three-digit number (hundreds, tens, and ones).	
3.1 Y2: Compare and order numbers from zero up to 100; using >, < and = signs 3.1 Compare and order numbers up to 1000. Compare numbers up to 1000 Order numbers up to 1000 on a number line		3.10 Compare and order numbers up to 1000. Explain how they have ordered numbers (reasoning) Use a number line to estimate and position numbers up to 1000.	
3.1 Identify, represent and estimate numbers using different representations particularly including number lines.		3.10 Identify, represent, and estimate numbers using different representations. Represent 3-digit numbers using a range of concrete resources	
3.1 Y2: Read and write numbers to at least 100 in numerals and in words.	3.7 Read and write numbers up to 1000 in numerals and in words.	3.10 Read and write numbers up to 1000 in numerals and words.	
3.1 Find 10 or 100 more or less than a given number.	3.5 Find 10 or 100 more or less than a given number		
3.1 Solve number problems and practical problems involving these ideas. Solve number problems using partitioning up to 100 Solve number problems using partitioning up to 1000			
Number: Addition and subtraction			
Key Number Facts: Know or derive all the complements to 100 $x + y = 100$; $x =?$ and $y =?$ Know pairs of multiples of 100 that total 1000 1 + 9 = 10 (Year 1) 10 + 90 = 100 (Year 2) 100 + 900 = 1000 (Year 3) Add and subtract numbers with up to 3 digits (e.g. 253 + 75 = 328)			
3.1 Y2: Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.			
3.1/3.2 Add and subtract numbers mentally, including: o A 3-digit number and ones o A 3-digit number and tens o A 3-digit number and hundreds Use mental strategies when solving a problem 	3.7 Add and subtract numbers mentally including: o a three-digit number and ones, o a three-digit number and tens, o a three-digit number and hundreds. o Add and subtract numbers with up to three digits (using partitioning, using number bonds, using rounding and adjusting) 		3.13 Add and subtract numbers mentally including: o a three-digit number and ones, o a three-digit number and tens, o a three-digit number and hundreds. Discuss and show which mental methods they would use and why

			
			3.13 Add and subtract numbers with up to three digits, using formally written methods of columnar addition and subtraction. Add numbers using column addition, supported by dienes and using regrouping. Subtract numbers using column subtraction, supported by dienes and using exchange. Identify when to use mental strategies or a formal written method.  ***Ensure number sentences chosen would not be more suited to a more efficient mental strategy.***
3.1 Estimate the answer to a calculation and use inverse operations to check answers.	3.7 Estimate the answer to a calculation and use inverse operations to check answers. Estimate the answer to a problem		3.13 Estimate the answer to a calculation and use inverse operations to check answers. Represent problems using the bar model to show part/part/whole and relationship between addition and subtraction. Use bar models to check their answers, drawing bar models for the inverse operation.
	3.7 Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.	3.10 Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction. Use key number facts, including number bonds, to solve problems.	3.13 Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction
Number: Multiplication and division			
Key Number Facts: Know the 3x, 4x and 8x table and the related division facts Understand that doubling means x 2 Understand that halving means ÷ 2 Know that… 50 x 2 = 100 ; 25 x 4 = 100 ; 20 x 5 = 100			
3.3 Y2: Recall and use multiplication and division facts for the 2,5 and 10 multiplication tables. Represent multiplication and division facts as arrays using a grid and a number line		3.9/3.11 Y2: Recall and use multiplication and division facts for the 2,5 and 10 multiplication tables. Represent tables facts for x2, x5 and x10 in different ways (array, number line and bar model)	3.14 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Represent and use multiplication and division facts for the 3x, 4x and 8x table

Show division as grouping 3.3 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Count in multiples of 3s and 4s Unstructured number line, e.g: *4 x 6 = □*  Counting back on a number line, e.g: *24 ÷ 4 = □* 		3.9/3.11 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Represent and use multiplication and division facts for the 3x, 4x and 8x table Make links between times tables facts and have effective strategies for working out facts Developing fluency of recall of 3/4/8 tables Using efficient jumps on a number line when working with larger calculations, e.g: *15 x 4 = □*  15 x 4 = 60 **Arrays and bar model, e.g:** *24 ÷ 4 = □* 	Make links between times tables facts and have effective strategies for working out facts Fluent recall of 3/4/8 tables Box array, e.g: *15 x 4 = □*  15 x 4 = 60 Partitioning and box arrays, e.g: *39 sweets shared between 3 children. How many sweets each?*  39 ÷ 3 = 13
3.3 Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, using mental strategies. Write and calculate multiplication and division statements (3s and 4s) using arrays and number lines alongside the number sentence.		3.9/3.11 Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, using mental strategies.	3.14 Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, using mental and progressing to formal written methods. Solve multiplication problems using formal written methods.
3.3 Solve problems, including missing number problems involving multiplication and division Solve problems involving multiplication and division		3.9/3.11 Solve problems, including missing number problems involving multiplication and division. 2/5/10/3/4/8 times tables Solve problems using division as grouping Solve problems involving multiplication and division, initially involving no remainders and then including remainders. Begin to interpret remainders in context. Solve problems, including missing number problems, involving multiplication and division	3.14 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. Apply known multiplication and division facts to solve problems. Solve multiplication and division problems involving missing number. Solve multiplication and division problems involving integer scaling problems.
Number: Fractions			

Key Number Facts:

- $\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}$
- $\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{5}{5}$ = 1 whole
- $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{6}{6}$ = 1 whole
- $\frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{7}{7}$ = 1 whole
- $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{8}{8}$ = 1 whole
- $\frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} + \frac{1}{9} = \frac{9}{9}$ = 1 whole
- $\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{10}{10}$ = 1 whole
- Understand fraction facts related to whole number facts

1 + 5 = 6 (Year1) linked to $\frac{1}{6} + \frac{5}{6} = \frac{6}{6}$ (Year 3)

3.4 Count up and down in tenths; recognise that tenths arise from dividing and object into ten equal parts and in dividing one-digit numbers or quantities by 10. Count up and down in tenths	3.5 Count up and down in tenths; recognising that tenths arise from dividing an object into ten equal parts and in dividing one-digit numbers or quantities by 10.	3.10 Count up and down in tenths, recognising that tenths arise from dividing an object in ten equal parts and in dividing one-digit numbers or quantities by 10. Use representations to show compositions of 100 and 1000 and links between the two. Count in multiples of 100; link to knowledge of ml/l	3.15 Count up and down in tenths, recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10. Recall and use key facts to 1000 in the context of length (e.g. ½, ¼, ¾ of 1000, linked addition and subtraction facts, linked multiplication and division facts). Relate tenths to number line in context of length (e.g. 1m is the whole, one tenth = 10cm)
3.4 Recognise, find, and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Revise ½, ¼, 1/3 and introduce 1/5 and 1/10 Know and understand the role of the denominator Know how many equal parts are needed to make a whole		3.9 Recognise, find, and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. (relate to key multiplication/division facts e.g. x3, x4, x8 linked to finding thirds, quarters, eights and non-unit fractions)	3.14 Recognise, find, and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Use bar models to support calculating unit and non-unit fractions of an amount.
	3.6 Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	3.9 Recognise and use fractions as numbers; unit fractions and non-unit fractions with small denominators.	3.14 Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.
3.4 Recognise and show, using diagrams, equivalent fractions with small denominators. Recognise equivalent fractions using 1/10, 1/5, 1/2/ 1/4	3.6 Recognise and show, using diagrams, equivalent fractions with small denominators.		3.14 Recognise and show, using diagrams, equivalent fractions with small denominators. (using 'fraction families' as bar models to support)
	3.6 Add and subtract fractions with the same denominator within one whole e.g. 5/7 +1/7= 6/7. Draw bar models to add and subtract fractions		3.14 Add and subtract fractions with the same denominator within one whole e.g. 5/7 +1/7= 6/7. Draw bar models to add and subtract fractions (within one whole)
3.4 Compare and order unit fractions and fractions with the same denominators. Order and compare unit fractions and fractions with different denominators – would you rather have 1/3 or ½ of the same chocolate bar?	3.6 Compare and order unit fractions and fractions with the same denominators.		3.14 Compare and order unit fractions and fractions with the same denominators. (using a number line and bar models to support)
	3.6 Solve problems that involve all of the above.		3.14 Solve problems that involve all of the above.
Measurement			

<table>
<tr><td colspan="4">Key Number Facts:

60 seconds = 1 minute
How many days in each month / year / leap year.
Find complements to 60.
50p x 2 = £1.00 £50 x 2 = £100
25 p x 4 = £1.00 £25 x 4 = £100
20p x 5 = £1.00 £20 x 5 = £100
1000 g = 1kg 1000ml = 1l
1000 m = 1km
1000 ÷ 2 = 500 1000 ÷ 4 = 250
½ l/kg/km = 500
¼ l/kg/km = 250
¾ l/kg/km = 750
</td></tr>
<tr><td>3.2 Measure, compare, add and subtract length (m / cm / mm)
Measure accurately with a ruler
Add and subtract to solve problems involving measure</td><td>3.5 Measure, compare, add and subtract lengths (mm/cm/m); mass (kg/g)
Know that there are 10mm in 1cm, 100cm in 1m, 1000mm in 1m
Derive associated facts for length – 50cm in 1/2m, 25cm in 1/4m, 75cm in 3/4m and represent on a bar model
Measure and compare length
Add and subtract in the context of length
Know that there are 1000g in 1kg
Derive associated facts for mass – 500g = ½ kg, 250g = ¼ kg, 100g = 1/10 kg
Measure and compare mass
Add and subtract in the context of mass</td><td>3.10 Measure, compare, add and subtract volume/capacity (l / ml)
Solve problems involving measure
• Read scales to identify different amounts of liquid in different containers
• Develop mental strategies for adding and subtracting multiples of 100, 200, 500 etc. linked to context of measures
• Convert between l/ml and use these to compare/order volume/capacity
• Convert between l/ml and use these to add/subtract volume/capacity</td><td>3.15 Measure, compare, add and subtract lengths (m/cm/mm).
Recall and use key facts to 1000 in the context of length (e.g. ½, ¼, ¾ of 1000, linked addition and subtraction facts, linked multiplication and division facts).
Measure, compare, add and subtract lengths to solve problems.</td></tr>
<tr><td>3.2 Measure the perimeter of simple 2-D shapes.</td><td colspan="2"></td><td>3.15 Measure and compare the perimeter of simple 2-D shapes.</td></tr>
<tr><td>3.2 Y2: Find different combinations of coins that equal the same amounts of money.
Recall key facts in relation to money e.g. £1 = 100p
Different ways to make a total</td><td colspan="3"></td></tr>
<tr><td>3.2 Add and subtract amounts of money to give change using both £ and p in practical contexts.
Add amounts of money
Find change from a pound</td><td colspan="2"></td><td>3.15 Add and subtract amounts of money to give change, using both £ and p in practical contexts.
Find totals using different coins and notes.
Add and subtract amounts of money to give change from larger amounts of money (e.g. up to £10/£20 notes)</td></tr>
<tr><td></td><td>3.5 Y2: Tell and write the time to five minutes, including quarter past/to the hour, and draw hands on a clock face to show these times.

3.5/3.8 Tell and write the time from an analogue clock, including using roman numerals from I to XII, and 12-hour and 24-hour clocks.
Tell and write the time from an analogue clock (12 hour)
Recall key facts of time – 60 minutes in an hour, 30 minutes in ½ an hour, 15 minutes in ¼ hour
Tell and write the time using 12-hour and 24-hour clocks</td><td></td><td>3.15 Tell the time from an analogue clock, including using Roman numerals I to XII, 12-hour and 24-hour clocks.</td></tr>
<tr><td></td><td>3.5/3.8 Estimate and read time within increased accuracy to the nearest minute; record and compare</td><td></td><td>3.15 Estimate and read the time with increasing accuracy to the nearest minute; record and compare</td></tr>
</table>

	time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. Read the time to the nearest minute		time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., midnight and noon. Read the time to the nearest minute.
	3.5/3.8 Know the number of seconds in a minute, days in each month, year and leap year.		3.15 Know the number of seconds in a minute and the number of days in each month, year, and leap year
	3.8 Compare durations of events, for example to calculate the time taken by particular events or tasks.		3.15 Compare durations of events, for example to calculate the time taken by particular events or tasks.
Geometry: Properties of shape			
3.4 Y2: Identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line. Use sorting diagrams (Carroll and Venn) to classify a range of 2D shapes. Introduce horizontal and vertical lines and pairs of perpendicular and parallel lines.			
3.4 Y2: Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. Use sorting diagrams (Carroll and Venn) to classify a range of 3D shapes.			
3.4 Draw 2D shapes and make 3D shapes using modelling materials. Draw 2D shapes Identify half and quarter of a given 2D shape Make 3D shapes		3.12 Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. Sort and classify 2D shapes in different ways (Carroll and Venn diagrams) Sort and classify 3D shapes in different ways (Carroll and Venn diagrams) Describe properties of prisms and pyramids. Construct prisms and pyramids.	
	3.6 Recognise angles as properties of shape or a description of a turn.		
3.4 Identify right angles, recognise that two right angles make a right turn, three make three quarters of a turn and four make a complete turn.	3.6 Identify right angles, recognise that two right angles make a half-turn, three make three-quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. Identify whether angles are greater or less than a right angle.		
3.4 Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.		3.12 Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. Solve problems involving horizontal and vertical lines and pairs of perpendicular and parallel lines.	
Statistics			
		3.10 Interpret and present data using bar charts, pictograms, and tables.	
		3.10 Solve one-step and two-step questions such as "How many more?" and "How many fewer?" using information presented in scaled bar charts, pictograms, and tables.	