Maths Framework - Milestone 1

Intent
• An understanding of the important concepts and an ability to make connections within mathematics. • A broad range of skills in using and applying mathematics. • Fluent knowledge and recall of number facts and the number system. • The ability to show initiative in solving problems in a wide range of contexts, including the new or unusual. • The ability to think independently and to persevere when faced with challenges, showing a confidence of success. • The ability to embrace the value of learning from mistakes and false starts. • The ability to reason, generalise and make sense of solutions. • Fluency in performing written and mental calculations and mathematical techniques. • A wide range of mathematical vocabulary. • A commitment to and passion for the subject.

Threshold Concepts	Skills	
Know and use numbers This concept involves understanding the number system and how they are used in a wide variety of mathematical ways.	Counting	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. • Count, read and write numbers to 100 in numerals. • Given a number, identify one more and one less. • Count in steps of 2, 3, 5 and 10 from 0 or 1 and in tens from any number, forward and backward.
	Representing	• Identify, represent and estimate numbers using different representations, including the number line. • Read and write numbers initially from 1 to 20 and then to at least 100 in numerals and in words.
	Comparing	• Use the language of: equal to, more than, less than (fewer), most and least. • Compare and order numbers from 0 up to 100; use <, > and = signs.

	Place value	• Recognise the place value of each digit in a two-digit number (tens, ones).
	Solving problems	• Use place value and number facts to solve problems.
Add and subtract This concept involves understanding both the concepts and processes of addition and subtraction.	Complexity	• Solve one-step problems with addition and subtraction: • Using concrete objects and pictorial representations including those involving numbers, quantities and measures. • Using the addition (+), subtraction (-) and equals (=) signs. • Applying their increasing knowledge of mental and written methods.
	Methods	• Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: • One-digit and two-digit numbers to 20, including zero. • A two-digit number and ones. • A two-digit number and tens. • Two two-digit numbers. • Adding three one-digit numbers. • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
	Checking	• Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
	Using number facts	• Represent and use number bonds and related subtraction facts within 20. • Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
Multiply and divide This concept involves understanding both the concepts and processes of multiplication and division.	Complexity	• Solve one-step (two-step at greater depth) problems involving multiplication and division.
	Methods	• Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and

		equals (=) signs. • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Solve problems involving multiplication and division using mental methods.
	Checking	• Use known multiplication facts to check the accuracy of calculations.
	Using multiplication and division facts	• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables. • Recognise odd and even numbers. • Use multiplication and division facts to solve problems.
Fractions This concept involves understanding the concept of part and whole and ways of calculating using it.	Recognising fractions	• Recognise, find and name a half as one of two equal parts of an object, shape or quantity. • Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. • Recognise, find, name and write fractions 1/2, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity.
	Equivalence	• Recognise the equivalence of 2/4 and 1/2.
	Solving problems	• Write simple fractions for example, 1/2 of 6 = 3.
Understand the properties of shapes This concept involves recognising the names and properties of geometric shapes and angles.		• Recognise and name common 2D and 3D shapes. • Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line. • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. • Identify 2-D shapes on the surface of 3-D shapes. • Compare and sort common 2-D and 3-D shapes and everyday objects.
Describe position,		• Describe position, direction and movement, including whole, half, quarter and

direction and movement This concept involves recognising various types of mathematical movements.		three-quarter turns. • Order and arrange combinations of mathematical objects in patterns and sequences. • Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).
Use measures This concept involves becoming familiar with a range of measures, devices used for measuring and calculations.		• Compare, describe and solve practical problems for: 　•lengths and heights 　•mass/weight 　•capacity and volume 　•time. 　• Measure and begin to record: 　•lengths and heights 　•mass/weight 　•capacity and volume 　•time (hours, minutes, seconds). • Recognise and know the value of different denominations of coins and notes. • Sequence events in chronological order using language. • Recognise and use language relating to dates, including days of the week, weeks, months and years. • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. • Use standard units to estimate and measure length/height (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. • Compare and order lengths, mass, volume/capacity and record the results using

		>, < and =.
		• Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.
		• Find different combinations of coins that equal the same amounts of money.
		• Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
		• Compare and sequence intervals of time.
		• Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
		• Know the number of minutes in an hour and the number of hours in a day.
Use statistics This concept involves interpreting, manipulating and presenting data in various ways.		• Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. • Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. • Ask and answer questions about totalling and comparing categorical data.
Use algebra This concept involves recognising mathematical properties and relationships using symbolic representations.		• Solve addition and subtraction problems involving missing numbers.