Reasoning about Number System and Measure

Counting
- Count in steps of 2 from 0 and from any number, forward and backward
- Count in steps of 3 from 0 and from any number, forward and backward
- Count in steps of 5 from 0, and from any number, forward and backward
- Count in steps of 10 from 0 and from any number, forward and backward
- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables (1,2,5 &10)

Recognising place value
- Recognise the place value of each digit in a two-digit number (tens, ones) EG 23 = 20+ 3 or 10+13
- Identify and represent numbers using different representations, including the number line
- Identify and represent numbers using scales of 1,2,5 and 10.
- Identify and represent numbers using scales where not all numbers are given.
- Estimate numbers including number lines and scales where not all numbers are given.
- Read and write numbers to at least 100 in numerals
- Read and write numbers to at least 100 in words.
- Recognise and use symbols for pounds (£) & pence (p) and know the value of coins.
- Combine amounts of money to make a particular value.

Comparing
- Compare and order numbers from 0 up to 100.
- Use <, > and = signs to compare numbers.
- Compare and order lengths, mass, volume/capacity and record the results using >, < and =
- Compare and sequence intervals of time

Problem Solving
- Use place value and number facts to solve problems.

Reasoning about Addition and Subtraction
- Recall at least four of the bonds for 10 and reason about associated facts.
- Recall and use addition and subtraction facts to 20 fluently
- Reason about addition and subtraction facts to 20 (EG. 6 + 4 = 10 so 16 + 4 = 20
- Derive and use related facts up to 100 (EG 60 + 40 = 100)

Add numbers using concrete objects, pictorial representations, and mentally, including:
- A two-digit number and ones (Without bridging EG. 45 + 3)
- A two-digit number and ones (Bridging EG. 54 + 9)
- A two-digit number and tens (EG. 54 + 20)
- Two two-digit numbers (EG. 48 + 35)
- Adding three one-digit numbers

Subtract numbers using concrete objects, pictorial representations, and mentally, including:
- A two-digit number and ones (Without bridging EG 45 - 3)
- A two-digit number and ones (Bridging EG 54 - 7)
- A two-digit number and tens (EG. 54 - 20)
- Two two-digit numbers (EG. 72 - 17)

Solve problems with addition and subtraction:
- Solve addition problems using concrete objects and pictorial representations, including those involving numbers, quantities and measures and applying their increasing knowledge of mental and written methods
- Solve subtraction problems using concrete objects and pictorial representations, including those involving numbers, quantities and measures and applying their increasing knowledge of mental and written methods
- Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
- Use reasoning about numbers and relationships to solve more complex problems and explain their thinking e.g. 17 + 62 = 51 + 4 + ?, multi-step addition /subtraction problems)
- Find different combinations of coins that equal the same amounts of money
- Solve simple problems in a practical context involving addition of money of the same unit.
- Solve simple problems in a practical context involving subtraction of money of the same unit, including giving change

Reasoning about Multiplication and Division
- Recall and use multiplication and division facts for the 2 times table.
- Recall and use multiplication and division facts for the 5 times table.
- Recall and use multiplication and division facts for the 10 times table.
- Recognise odd and even numbers
- Recall and use multiplication and division facts for 2,5 and 10 and make deductions outside known facts.
- Calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (×) and equals (=) signs
- Calculate mathematical statements for division within the multiplication tables and write them using the multiplication 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 using materials, arrays, repeated addition, mental methods, and multiplication facts, including problems in contexts.
- Solve problems involving division, using materials, arrays, repeated subtraction, mental methods, and division facts, including problems in contexts.
- Solve unfamiliar word problems that involve more than one step e.g. which would you rather 4 packets @ 5p or 3 packets @10p)

Reasoning about Fractions
- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and turns.
- Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).
- Recognise, find, name and write fractions 1/2, 1/3, 1/4, of a length, set of objects or quantity (Unit fractions)
- Recognise, find, name and write fractions 1/2, 1/3, 1/4, of a shape (Unit fractions)
- Recognise, find, name and write fractions 2/4, 3/4, of a length, set of objects or quantity (Non-unit fractions)
- Recognise, find, name and write fractions 2/4, 3/4, of a shape (Non-unit fractions)
- Write simple fractions for example, 1/2 of 6 = 3
- Recognise the equivalence of 2/4 and ½

Reasoning about Measures
Choose and use appropriate standard units to estimate and measure:
- Length/height in any direction (m/cm)
- Mass (kg/g)
- Temperature (°C)
- Capacity (litres/ml)

Read scales in 1s,2s,5s,10s, Read scales where not all numbers are given Estimate points in between

(To the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels)
- Tell and write the time to the nearest quarter hour including quarter past/to the hour.
- Draw the hands on a clock face to show the time to the nearest quarter hour.
- Tell and write the time to five minutes,
- Draw the hands on a clock face to show the time to five minute intervals.
- Know the number of minutes in an hour and the number of hours in a day.

Reasoning about Geometry – Properties of shape
- Identify and describe the properties of 2-D shapes, including the number of sides and lines of symmetry.
- Identify lines symmetry for 2D shapes 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, [for example, a circle on a cylinder and a triangle on a pyramid]
- Compare and sort common 2-D and 3-D shapes and everyday objects (describe similarities and differences)

Geometry – Position and direction
- Order and arrange combinations of mathematical objects in patterns and sequences.

Reasoning about Statistics
- Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. (Read scales in divisions of 1,2,5 and 10s, read scales where not all numbers on the scale are given)
- 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