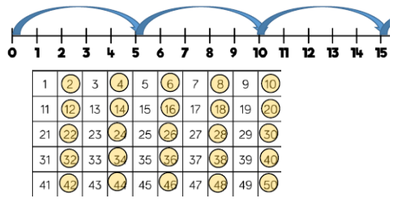
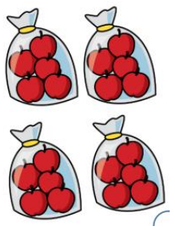
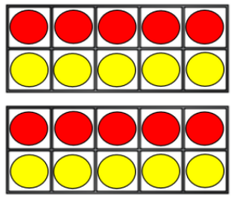
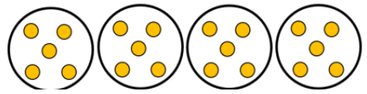
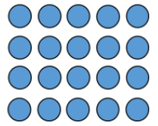
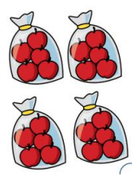
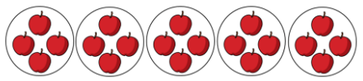
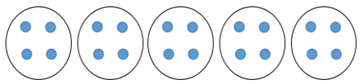
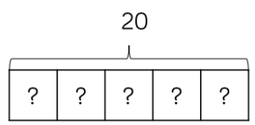
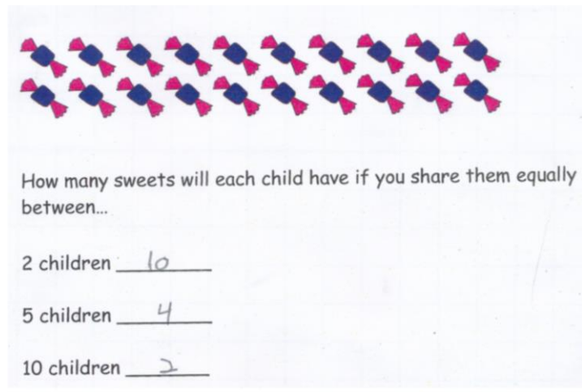
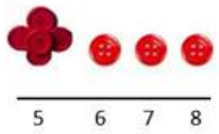
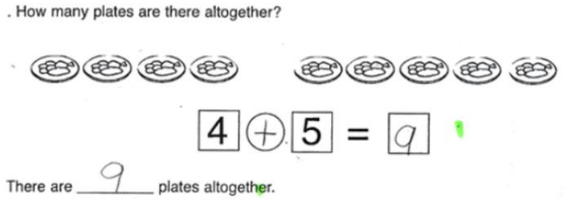
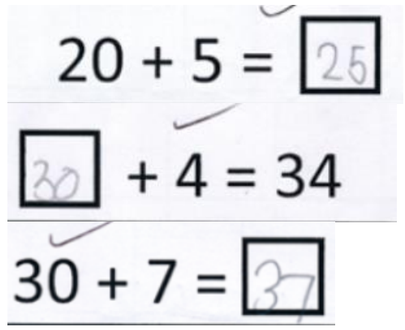
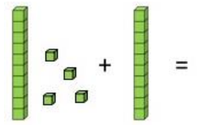
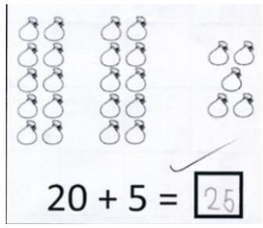
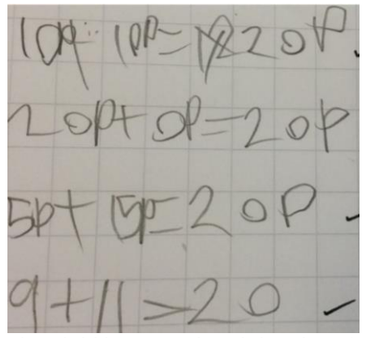
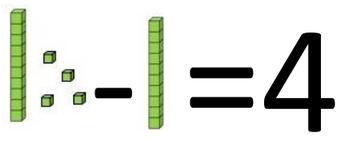
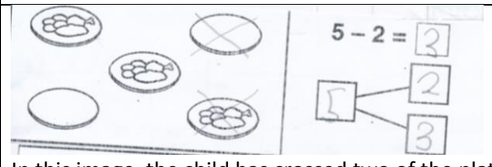
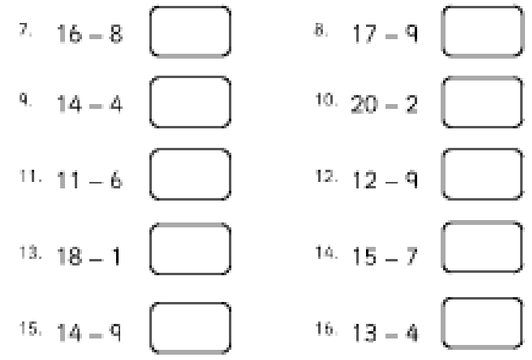
Calculation in Year 1

Objective	Using concrete resources	Using pictures	Using arrays
Count in multiples of 2, 5 and 10 from 0.	Count daily in multiples, using real objects for support e.g. pairs of socks, marbles in groups of 5 or coins of the same value.  2 4 6 8 … 10 20 30 40… 5 10 15 20…	Jump forwards in the multiple on a number line or 100 squares. Look for **patterns** e.g. When counting in 5's, it ends in a 5 and 0. Once the multiples are identified, count with and without the resource. 	**Array:** **Shapes or objects arranged in a <u>rectangle</u> are called an array. Egg boxes or muffin trays are good examples of arrays. Teachers use these to help children to 'see' multiplication.** When using arrays to count in multiples of 2's, 5's and 10's, objects should be arranged in lines to reflect that multiple.  2, 4, 6, 8
Solve one-step problems involving multiplication by calculating the answer with support.	Solve multiplication problems involving two steps. One bag holds 5 apples. How many apples do 4 bags hold? Children can use **concrete resources** (cubes, counters, playdoh) to solve the two-step problem. The children will need to firstly **group** the 'apples' into groups of 5, then **separate** these into 4 groups. They will be encouraged to count in their multiples to find the answer. 	  Children can draw pictures to support their learning. Each picture shows 5 x 4 = 20. Children should count in their **multiples** to find the answer.	 $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$ Shapes arranged in lines of 5 to reflect the multiple used within this two-step word problem. 5, 10, 15, 20. Children can record their answers using **repeated addition** and the multiplication sign. 5 + 5 + 5 + 5 = 20 **(Repeated addition)**
Solve one-step problems involving division by calculating the answer with support.	Solve division problems involving two steps. There are 20 apples altogether. They are shared equally between 5 bags. How many apples are in each bag? Children can use **concrete resources** (cubes, counters, playdoh) to solve the two-step problem. The children will need to firstly count out 20 objects **accurately**. Then **separate** these into 5 bags (pots, spaces, bags). They will then need to count how many objects are in each 'bag'. Encourage the use of the language **'equal'** and **'fair'**. 	  $20 \div 5 = 4$ Children can draw pictures to support their learning. Each picture shows 20 ÷ 5 = 4. Children should count in their **multiples** to find the answer.  Some children may use a bar model to prove their answer is correct.	Shapes arranged in lines of 10 to **reflect the multiple** used within this **one-step word problem.** 10, 20. The children could also count in their 2's. Children are introduced to the division sign in Year 2. 

Calculation in Year 1

Objective	Using concrete resources	Using pictures	Abstract
Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs.	 Start with the larger number on the bead string and then count on to the smaller number 1 by 1 to find the answer.  Children begin to learn the different symbols. We use the language of **addition, subtraction and equals**. We use **concrete resources** (cubes, counters, playdoh etc) to model adding and then counting the **total** of objects.	 In this image, the children would be encouraged to count the objects **carefully** to **identify** how many there are. They would then need to identify that they are adding as we want to know how many there are **altogether**. If the problem used language such as 'how many are left?' the children would need to subtract.	**Abstract** means to solve maths problems using only numbers.  Notice that some of the missing numbers are at the start of the problem.
Add one-digit and two-digit numbers to 20, including zero.	 14 + 10 = 24 We often use **dienes** as a **concrete** resource (sometimes referred to as '**chips and peas'**) to support the children in adding tens and ones.  **Is equivalent to 10.**  **Is equivalent to 1.** We encourage the children not to count in 1's when using the 10 (chip) as we know it is 10. The children would be encouraged to say '10 and 4 is 14, add another 10 is 24',	Use a number line to count on in ones.   Children can use pictures to add. They can also draw their own picture. The picture on the right shows 20 objects arranged into rows, with 5 objects near. The children would be encouraged to **count the rows in 2's,** then the further 5 objects in 1's. In school, we would discuss the fact there are 2 **tens** and 0 **ones**, and 5 **ones**. Totalling 25.	**Abstract** means to solve maths problems using only numbers.  This child has completed the objective by adding **amounts**.
Subtract one-digit and two-digit numbers to 20, including zero.	We use **concrete resources** (cubes, counters, playdoh etc) to model subtracting by counting the total, then subtracting an amount and counting the total left. We can also complete subtraction problems using dienes. 	 In this image, the child has crossed two of the plates out to show that they are **subtracting** two. They will have then counted **how many are left**. This child has also demonstrated their understanding by using a **part part whole model.**	**Abstract** means to solve maths problems using only numbers. 

Calculation in Year 1