Calculation helps

Multiplication (x)

Year 1

Children experience counting equal group of objects in 2s, 5s and 10s.

Present practical problem solving activities involving counting equal sets or groups, as above.

How many frogs on the lily pads

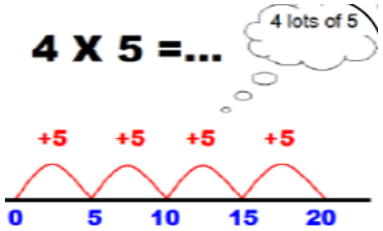
How many legs will 3 teddies have?

There are 3 sweets in one bag. How many sweets are in 5 bags altogether?

3 + 3 + 3 + 3 + 3 = 15

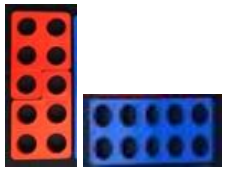
Year 2

Use repeated addition on a number line



Starting from zero, make equal jumps up on a number line to work out multiplication facts and write multiplication statements using x and = signs.

Use arrays



5 x 2 = 2 x 5

5 x 3 = 15

3 x 5 = 15

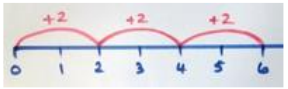
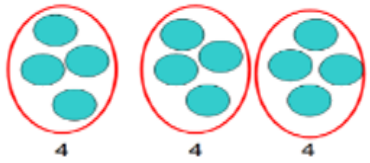
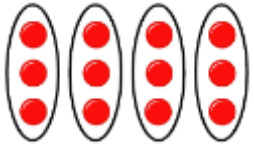
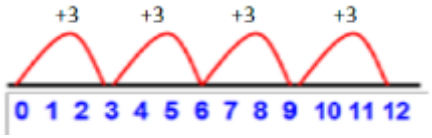
5 x 3 = 3 + 3 + 3 + 3 + 3 = 15

3 x 5 = 5 + 5 + 5 = 15

Use arrays to help teach children to understand the commutative law of multiplication, and give examples such as **3 x __ = 6**.

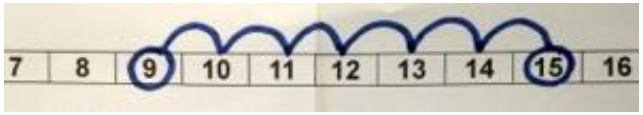
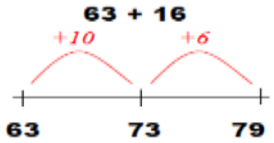
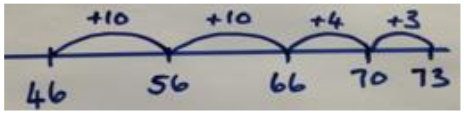
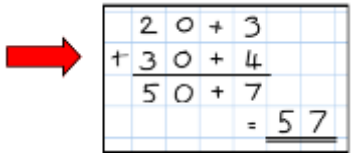
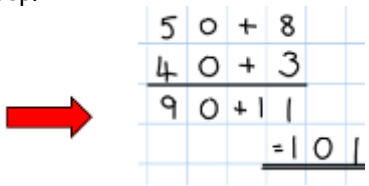
Calculation helps

Division (÷)

Year 1	Year 2
Discuss division as both grouping and sharing **Grouping** How many groups of 4 can be made with 12 stars? = **3**   **Sharing**  12 shared between 3 is 4  	**Group and share using the ÷ and = symbols** Use objects, arrays, diagrams and pictorial representations, and grouping on a number line.  12 ÷ 3 = 4 This represents **12 ÷ 3, posed as** how many groups of 3 are in 12? Pupils should also show that the same array can represent **12 ÷ 4 = 3** if grouped horizontally.   **15 shared between 3 (15 ÷ 3 = 5)** **15 grouped in to 5s (15 ÷ 5 = 3)** **Using a number line.** Group from zero in equal jumps of the divisor to find out "how many groups of _ in _ ?". Pupils could and using a bead string or practical apparatus to work out problems like „A CD costs £3. How many CDs can I buy with £12? " **This is an important method to develop understanding of division as grouping.**  **12 ÷ 3 = 4**

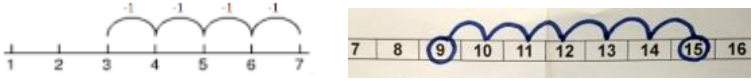
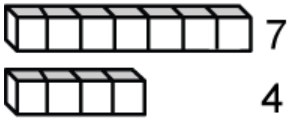
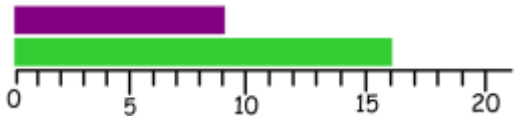
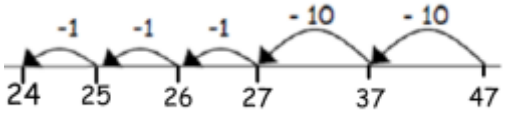
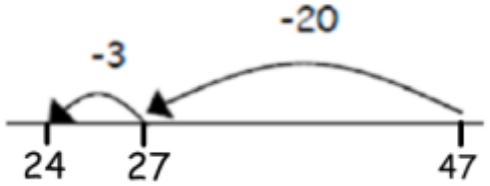
Calculation helps

Addition (+)

Year 1	Year 2
<u>Count all</u>  Record as 8 + 5 = 13 <u>Counting on</u>  Record as 8 + 5 = 13 Progress to showing this on a number line   Record as 9 + 6 = 15  Bead strings can be used to illustrate addition including bridging 10	Add 10s then add units using a number line.   46 + 27 = 73 (bridging tens when 10s are added) **Step 1)** Partition numbers then recombine Start with numbers that do not cross 10s boundary  **Step 2)** Pupils then progress to numbers which cross the tens boundary. NOTE: Children must be secure in their mental addition of numbers within 20 at this step.  Confident and accurate children can also use this method for numbers with 3 digits.

Calculation helps

Subtraction (-)

Year 1	Year 2
Take away  Count back on a number track, then number line in ones with numbers up to 20. 15 – 6 = 9  **Finding the difference/ distance between.**  7 is 3 more than 4 (7 - __ = 4) Children record this using (-) and (=) signs. E.g 7 – 3 = 4 Using a number line to count on showing the blocks alongside  16 - __ = 9 diffence between 9 and 16 = 7	**Take away** 47 – 23  Partition the 2nd number in to tens and units. Subtract the tens then the units. Move on to more efficient methods  s **Finding the difference** Difference between 73 and 58 (73 - __ = 58) Develop understanding of inverse 58 + ___ = 73  Bridging 10s