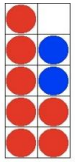
<table>
<tr><th>Yr 1</th><th>Addition</th><th>Subtraction</th><th>Multiplication</th><th>Division</th><th>Fractions</th></tr>
<tr><td rowspan="2">Written Calculation Strategies</td><td colspan="2">read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
represent and use number bonds and related subtraction facts within 20
add and subtract one-digit and two-digit numbers to 20, including zero
solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.
Doubling</td><td colspan="2">▪ solve one-step problems involving multiplication and division, by calculating the answer using Concrete objects, Pictorial representations

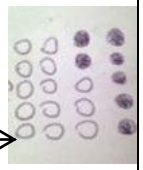
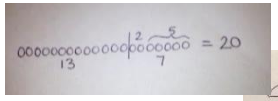
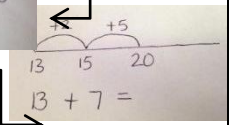
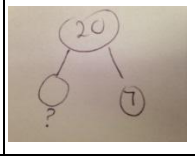
▪ Arrays with the support of the teacher.
▪ Grouping and sharing
▪ Halving</td><td rowspan="2">Recognise, find and name a half as one of two equal parts of an object, shape or quantity
Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</td></tr>
<tr><td>Revisit and consolidate Reception strategies.
Use concrete manipulatives and pictorial representations alongside written calculations and symbols.

Model and illustrate calculations using tens frames:

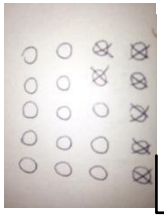
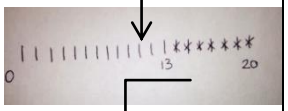
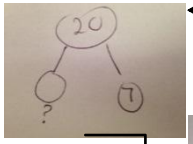
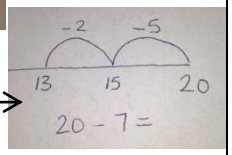
Introduce regrouping using tens frames and egg boxes
eg 9 + 3 = (9 + 1) + 2, filling up the first egg box by adding 1, and then knowing that 10 and 2 makes 12.
 

Adding a single digit to a 2 digit number, explored first with concrete manipulatives, such as bead strings, then pictorial representations, & finally on an empty number line.
 

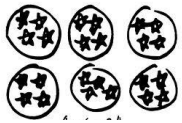
13 + 7 =
 
 
 
  </td><td>Revisit and consolidate Reception strategies.

Use concrete manipulatives and pictorial representations alongside written calculations and symbols.

When initially teaching subtraction, model the actual ‘taking-away’ with manipulatives and crossing out of pictures.

20 – 7 =
 
 
 
 
  </td><td>-Count groups of objects in different contexts

See Reception concrete examples of multiplication, Year 1 will consolidate and then move to pictorial representations

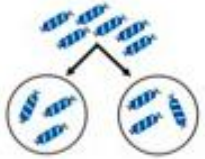
Eg understand multiplication as groups of objects or pictures
 

-as repeated addition
 

–as arrays
 

–as scaling

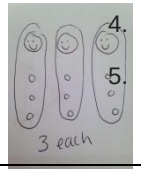
Eg if this piece of ribbon is 2cm, how long will a piece be that is three times as long?</td><td>Division is introduced as sharing
Eg how many raisins each? Physically sharing between pupils

Sharing equally using objects and then pictures
 

-Then grouping objects to share them

Eg if we each have 3 raisins, can we have another one each, are there enough?

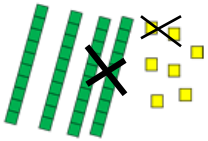
-Place objects in rows/arrays
Eg we have 12 buttons, to share with three pupils
 

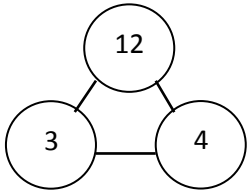
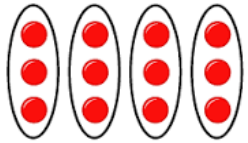
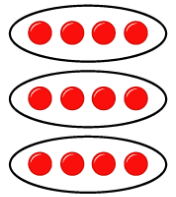
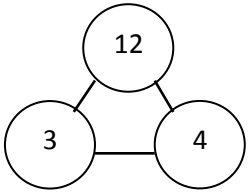
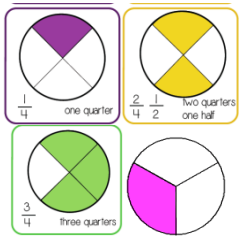
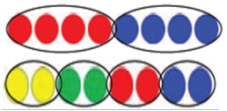
 

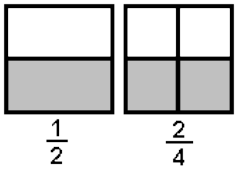
How many do we have</td></tr>
</table>

			The multiplication symbol is not introduced in year 1, multiplication is referred to as *groups of, lots of, times*	*each?* *Or 9 buttons to share with three people?*	

Key Techniques:
Mental recall follows concrete and pictorial understanding. Reciting of number facts must have a secure foundation of understanding.
Before the introduction of a number lines for addition and subtraction, children must be secure when partitioning numbers to 10 in different ways, with an emphasis on understanding the importance of 5.
However, the use of a number line for calculating may be modelled by the teacher alongside concrete and pictorial representations.

<table>
<tr><th>Yr 2</th><th>Addition</th><th>Subtraction</th><th>Multiplication</th><th>Division</th><th>Fractions</th></tr>
<tr><td></td><td colspan="2">solve problems with addition and subtraction
show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</td><td colspan="2">Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs</td><td>recognise, find, name and write fractions 1/3 , 1/4 , 2/4 and 3/4 of a length, shape, set of objects or quantity.</td></tr>
<tr><td></td><td>▪ solve problems with addition and subtraction:
• using concrete objects and pictorial representations, including those involving numbers, quantities and measures
• applying their increasing knowledge of mental and written methods
6 tens + 3 tens = 9 tens
Think: I can use the addition fact 6 + 3 = 9.
60 + 30 = 90
▪ recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
 
▪ add and subtract numbers using concrete objects, pictorial representations, and mentally, including:
▪ a two-digit number and ones (see year one)
▪ a two-digit number and tens</td><td>▪ 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.
47 – 22 = 25
 
 
Remove rods and ones, to see what's left (build on year one)

Move to,
47 – 19, where regrouping and renaming takes place</td><td>▪ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
 
4 x 6 = 24
 
6 x 4 = 24
  </td><td> 
12 ÷ 3 = 4
 
12 ÷ 4 = 3
  </td><td> 
 
Ensure that 2/4 and ¾ are the first non-unit fractions children meet

Write simple fractions for example,
▪ 1/2 of 6 = 3 recognise the equivalence of 2/4 And 1/2 .
  </td></tr>
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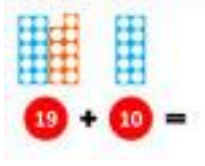
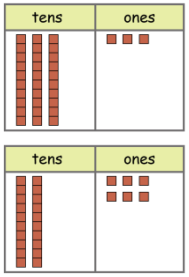


29

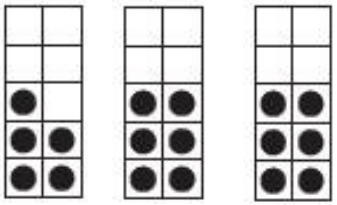
- two two-digit numbers

e.g. 33 + 26 =

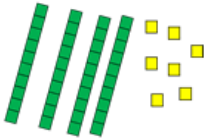


adding three one-digit numbers

5 + 6 + 6 =

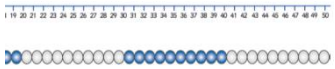


Could double 6 then add on 5 or fill the tens frames to reach total of 17.



Model on numberline,

47 – 7 - 2 - 10



Key Techniques: Use tens frames, number lines, numicon, number bugs, bead strings to support mathematical connections.

Work towards recording in columns to support next steps in Year 3