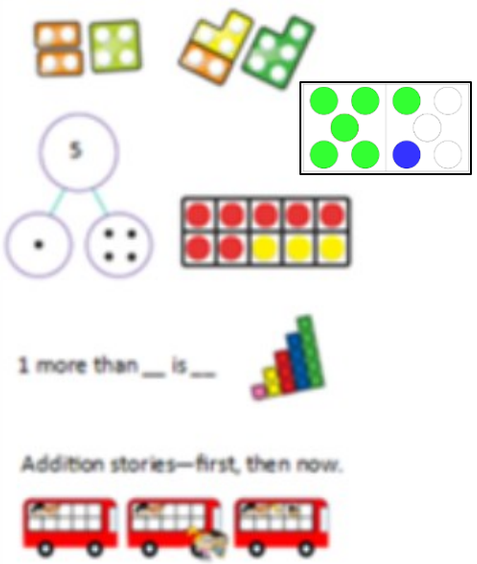
Calculation Journey - Addition

EYFS

- Composition of numbers within 10 and bonds to 10 using concrete resources—addition facts.



Year 1

One digit number with two digit (within 20)

Instant recall of one digit number and one digit (not bridging 10)

Instant recall of 10 and one digit number (using knowledge of place value

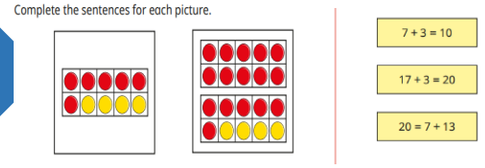
10 + 6 =16

10 + 4 =14

Use known facts to add ones

15 + 3 = 18 **14 + 5 =19**

- **Use number bonds of 10 to find number bonds of 20**
-



Year 2

Add 3 one -digit numbers



Encourage efficient methods – number bonds of 10 / doubles

Two digit number and ones

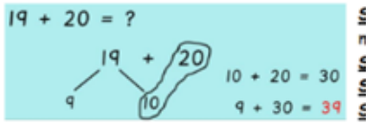
23+4=27

Recognize ones add up to less than 10 & use known facts

Two-digit number and tens

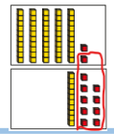
Partition the 2 digit number

Add the tens, ones don't change



Two 2-digit numbers (across a 10)

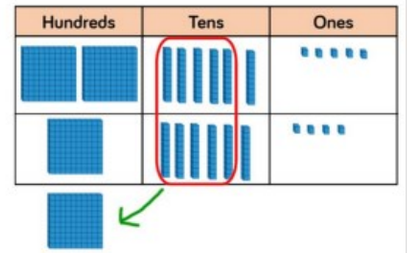
Children will use base 10 to represent two 2-digit numbers – lining up tens and ones. Children add the ones first, identifying a 10.



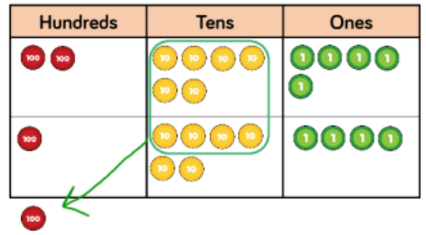
Year 3

Add numbers with up to 3 digits

Base 10 and place value counters are the most effective manipulatives when adding numbers up to 3 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column.

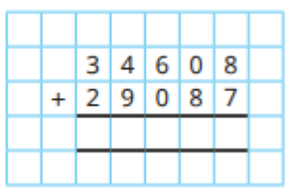



```
 265
+164
 429
  1
```



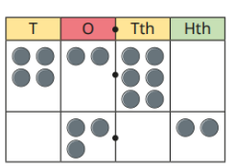
Year 6

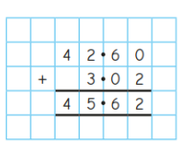
- Add up to 6-digit numbers



```
  3 4 6 0 8
+ 2 9 0 8 7
```

- Add decimals - 1 to 3 decimal places.
- Add decimals with different place values.

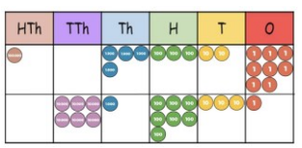




```
  4 2 6 0
+   3 0 2
  4 5 6 2
```

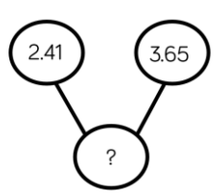
Year 5

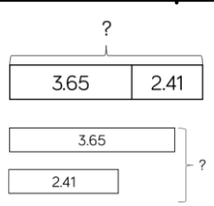
- Add numbers with more than 4 digits.

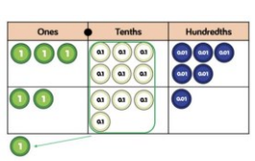


1	0	4	3	2	8	
+	6	1	7	3	1	
1	6	6	0	5	9	
		1				

- Add with up to 3 decimal places








```
  3.65
+ 2.41
  6.06
   1
```

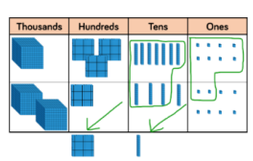
Year 4

Add numbers with up to 4-digit.

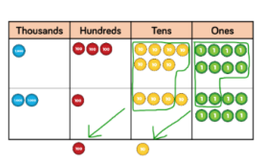
Base 10 and place value counters are most effective manipulatives.

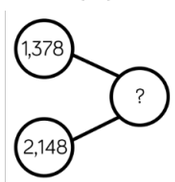
Children will set out their calculation alongside so they can see links to the written column menthid.

1,378 + 2,148 = 3,526




```
  1 3 7 8
+ 2 1 4 8
  3 5 2 6
    1 1
```



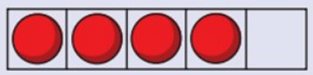


Calculation Journey - Subtraction

EYFS



Support children to build towers or use a five frame so they can see the amount decreasing.

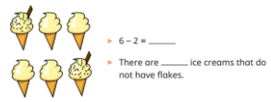


Development Matters – Reception – Understand the 'one more than/one less than' relationship between consecutive numbers.



Year 1

- Subtraction within 10 with concrete objects and pictorial representations



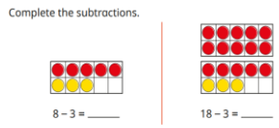
- Subtract by crossing out

Write a story to match the pictures.

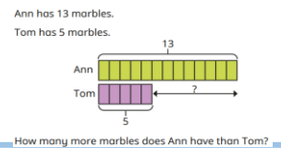


Draw a part-whole model for your story.

- Subtract by using related facts

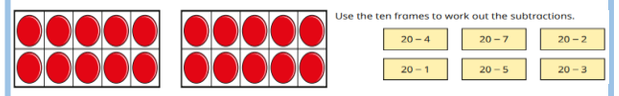


- Subtraction by finding the difference

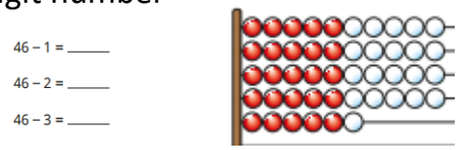


Year 2

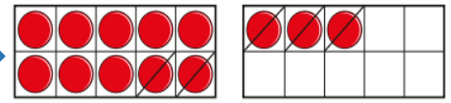
- Subtract from a 10



- Subtract a 1-digit number from a 2-digit number



- Subtract a 1-digit number from a 2-digit number across a 10

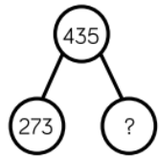


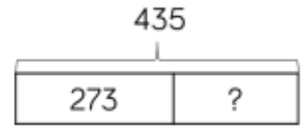
Year 3

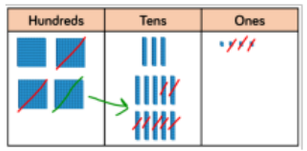
Subtract 3-digit numbers

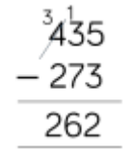
Base 10 and place value counters are most effective manipulatives.

Children write out their calculation alongside concrete resources so they can see the links.









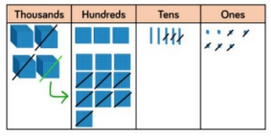
Year 4

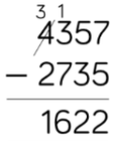
Subtract with up to 4-digits

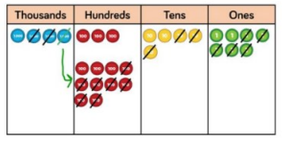
Base 10 and place value counters are most effective manipulatives.

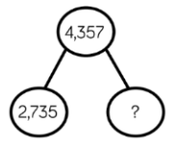
Children will set out their calculation alongside so they can see links to the written column method.

4,357 – 2,735 = 1,622



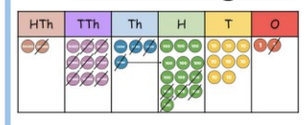


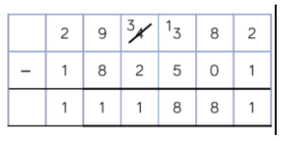




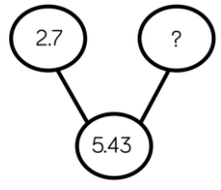
Year 5

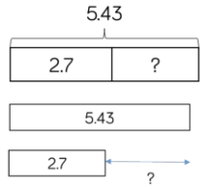
- Subtract numbers with more than 4 digits.

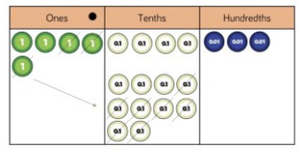


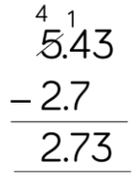


- Subtract with up to 3 decimal places.



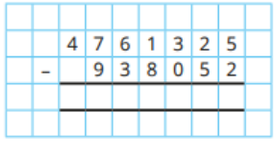






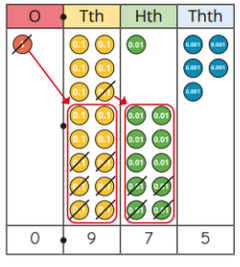
Year 6

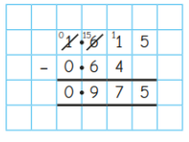
- Subtract up to 6-digit numbers.



- Subtract decimals - 1 to 3 decimal places.
- Subtract decimals with different place values.

Esther uses place value counters to work out 1.615 – 0.64



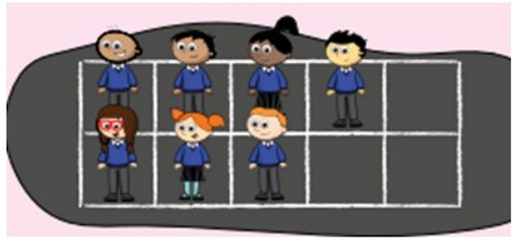


Calculation Journey - Multiplication

EYFS







Finding pairs, double facts, counting in 2s, grouping

Year 1

- Count in 2s, 10s and 5s.

How many socks are there in total?



There are _____ socks in total.

- Recognise equal groups



- Adding equal groups

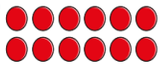
Ask children to line up some bikes or scooters. As a class, count how many bikes/scooters there are.



Ask how many wheels there are altogether. Encourage children to write the number sentence to match the bikes.

- Doubling

Complete the sentences to match the array.



_____ + _____ = _____

Double _____ is _____

Year 2

- Make equal groups

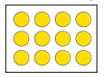
Put 12 counters into different equal groups.



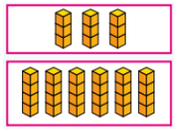
- Add equal groups – children to focus on how many groups and how many are in each group



- Use arrays – children will write a multiplication sentence to match a given array focusing on how many are in each column and row



- Doubling – children identify doubling as '2 lots of' - relating to their 2 times table

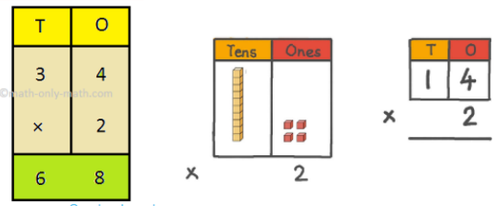


Year 3

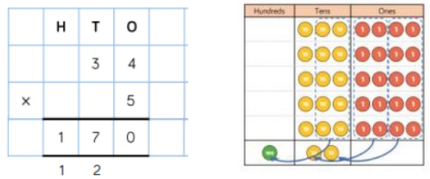
Multiply 2-digit numbers by 1-digit numbers – no exchange

Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should be able to use times tables knowledge.

Multiplying 2-Digit Number by 1-Digit Number

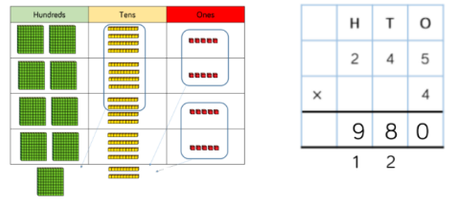


Multiply 2-digit numbers by 1-digit numbers – with exchange



Year 4

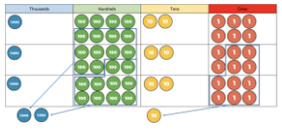
Multiply 3-digit numbers by 1-digit numbers



Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should be able to use times tables knowledge.

Year 5

Multiply 4-digit numbers by 1-digit numbers





Multiply 2 digit by 2 digit



Multiply 3 digit by 2 digit

×	200	30	4
30	6,000	900	120
2	400	60	8

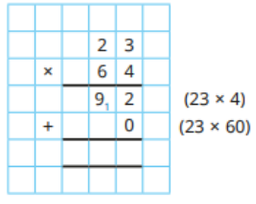


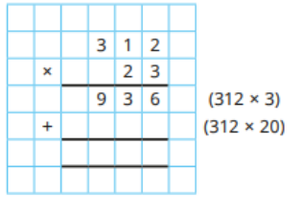
Multiply 4 digit by 2 digit



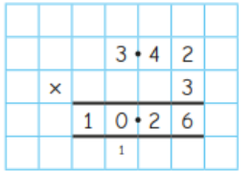
Year 6

- Multiply up to a 4-digit number by a 2-digit number





- Multiply decimals by integers



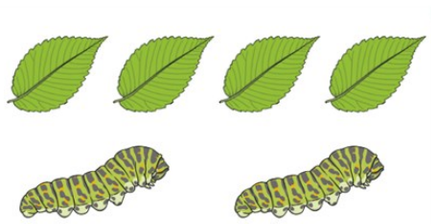
Calculation Journey - Division

EYFS

- Explore and represent how quantities can be distributed equally.

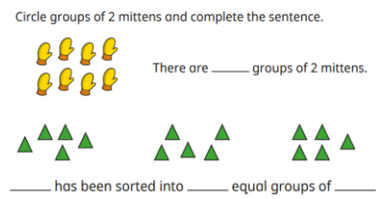
  Compare groups of objects, saying when they have the same number.



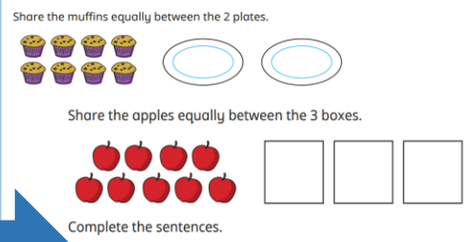


Year 1

Making equal groups by grouping



Making equal groups by sharing



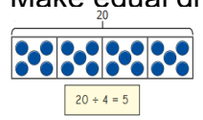
Year 2

Children explore division through grouping and sharing, they initially work with practical resources and move onto using a bar model.

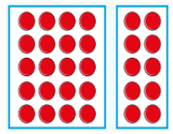
- Make equal groups – grouping



- Make equal groups – sharing



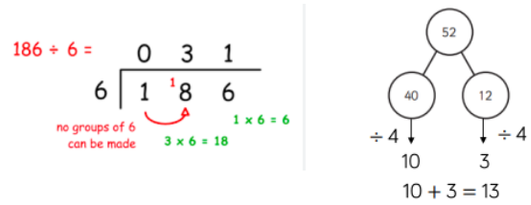
- Halving – linking to dividing by 2



Year 3

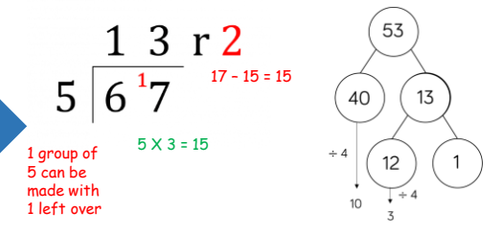
Dividing 2-digits by 1-digit (sharing with exchange)

When using a short division method children use their times tables knowledge to look at the number of groups that can be made by the number. Flexible partitioning supports this.



Dividing 2-digits by 1-digit (sharing with reminders)

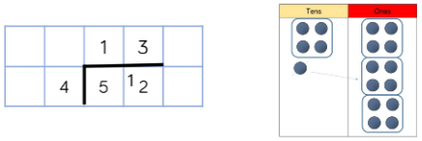
When using a short division method children use their times tables knowledge to look at the number of groups that can be made by the number. Flexible partitioning supports this.



Year 4

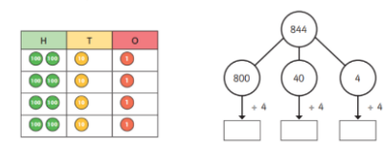
Divide 2-digit by 1-digit (grouping)

When using the short division method, children use grouping. They will need to think about 'groups of'. E.g. how many groups of 4 can we make?

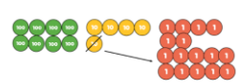


Divide 3-digit by 1-digit (sharing)

Children continue to use place value counters to share 3-digit numbers into equal groups. Hundreds, tens and ones should be shared.

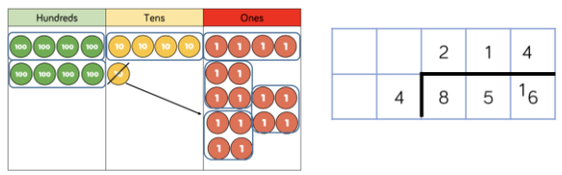


This will help highlight remainders. Flexible partitioning can be used to help share equally.

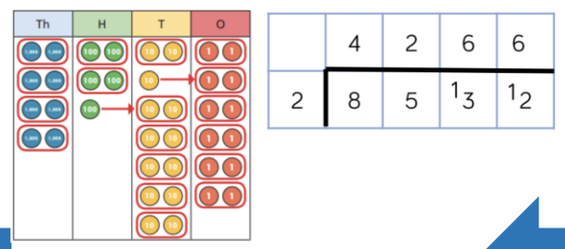


Year 5

- Divide 3 digits by 1 digit

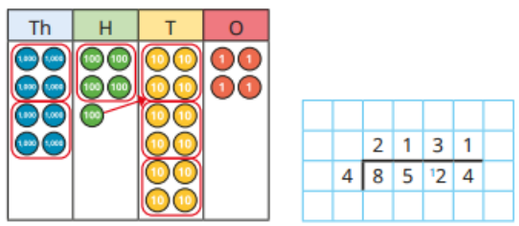


- Divide 4 digits by 1 digit

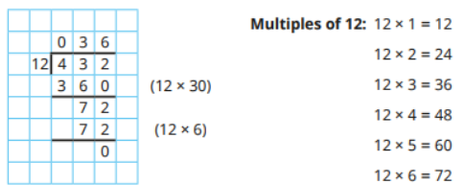


Year 6

- Fluent with short division.



- Fluent in long division.



Multiples of 12:
12 × 1 = 12
12 × 2 = 24
12 × 3 = 36
12 × 4 = 48
12 × 5 = 60
12 × 6 = 72