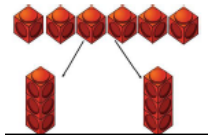
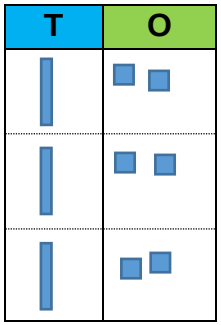
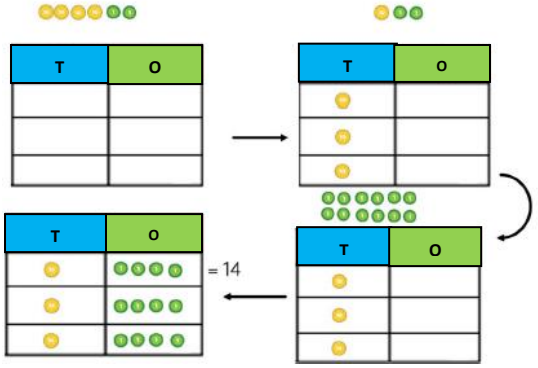
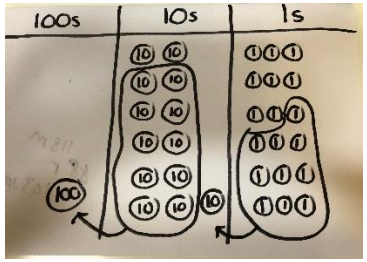
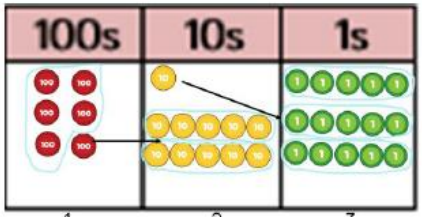
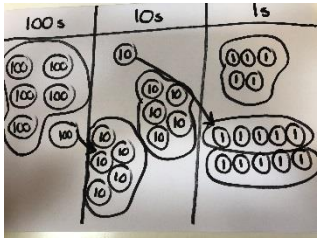
Division Routeway

Key Vocabulary: share, group, divide, divided by, half, goes into, shared between, groups of

Concrete	Pictorial	Abstract
Sharing using a range of objects. **6 ÷ 2 =**   **Grouping** using a range of objects. **6 ÷ 2 =** 	Represent the sharing pictorially through **grouping** and **sharing**. **6 ÷ 2 =** X X X X X X X X X X X X	**6 ÷ 2 = 3** Children should also be encouraged to use their times tables facts. **60 ÷ 10 = 6** *Children should count in groups using their fingers.*
Sharing using base 10. 36 ÷ 3 =  	Children to represent the place value counters pictorially. T | O I | x x I | x x I | x x	Children begin to write calculations to show the process. Must be used alongside base 10 to support understanding. 36 ÷ 3 = 36 = 30 + 6 30 ÷ 3 = 10 6 ÷ 3 = 2

Division Routeway

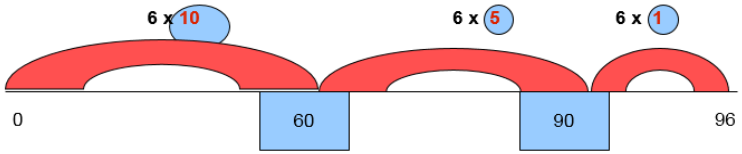
Sharing using Place Value Counters. 42 ÷ 3 =  	Children to represent the place value counters pictorially. 42 ÷ 3 =  100 + 30 + 8	Children begin to write calculations to show the process. Must be used alongside place value counters to support understanding. 42 ÷ 3 42 = 30 + 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14
Short Division using Place Value counters to group. 615 ÷ 5 =  100 + 20 + 3 = 123	Represent the place value counters pictorially.  100 + 20 + 3 = 123	Children to do the calculation using the short division scaffold. $5\overline{)615}$ = 123
1. Make 615 with PV counters. 2. How many groups of 5 hundreds can you make with 6 hundred counters? 3. Exchange 1 hundred for 10 tens. 4. How many groups of 5 tens can you make with 11 ten counters? 5. Exchange 1 ten for 10 ones. 6. How many groups of 5 ones can you make with 15 ones?		

Division Routeway

Chunking

Children may use a beadstring as an introduction to chunking if appropriate.

Childeren to use a blank numberline.
96 ÷ 6 =



10 + 5 + 1 = 16

```
   16
6 | 96
-  60   (10 x 6)
   36   (6 x 6)
-  36
   00
```

10 + 6 = 16

Encrouage children to begin with a *number cloud* (a list of the first 5 multiples of the divisor)

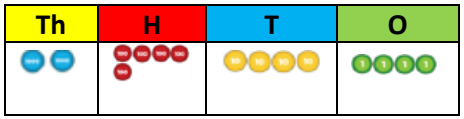
```
   4 2
15 | 630
```

15
30
45
60
75

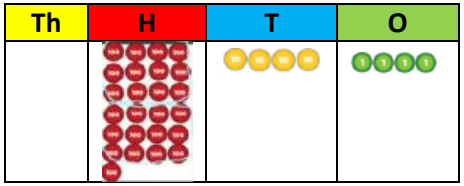
Division Routeway

Long Division – model using place value counters to introduce the long division method.

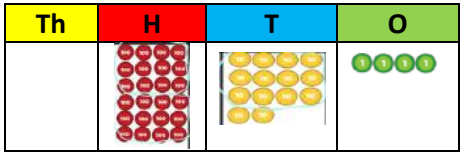
2544 ÷ 12



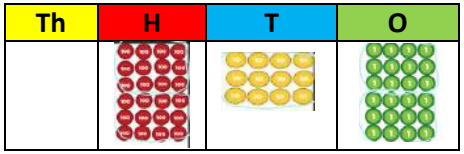
We can't group 2 thousands into groups of 12 so we will exchange them.



We can group 24 hundreds into groups of 12 which leaves us with 1 hundred.



After exchanging the hundred we have 14 tens. We can group 12 tens into a group of 12, which leaves 2 tens.



After exchanging the 2 tens, we have 24 ones. We can group 24 ones into 2 groups of 12, which leaves no remainder.

```
  02
12|2544
  24
  --
   1
```

```
  021
12|2544
  24
  --
  14
  12
  --
   2
```

```
  0212
12|2544
  24
  --
  14
  12
  --
  24
  24
  --
   0
```