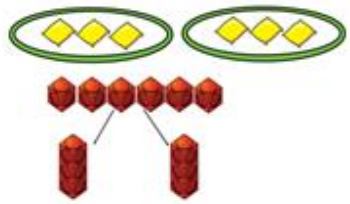
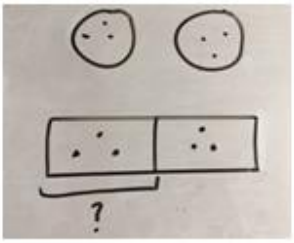
FS/Y1

Progression for Division

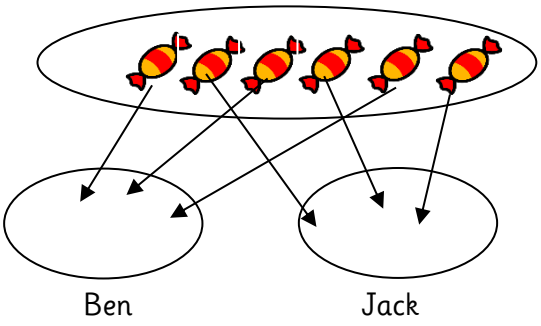
DEVELOPING UNDERSTANDING AND MENTAL METHODS

Throughout teaching in mathematics, division is taught wherever possible through real life problem solving situations providing opportunities for children to develop their understanding of division.

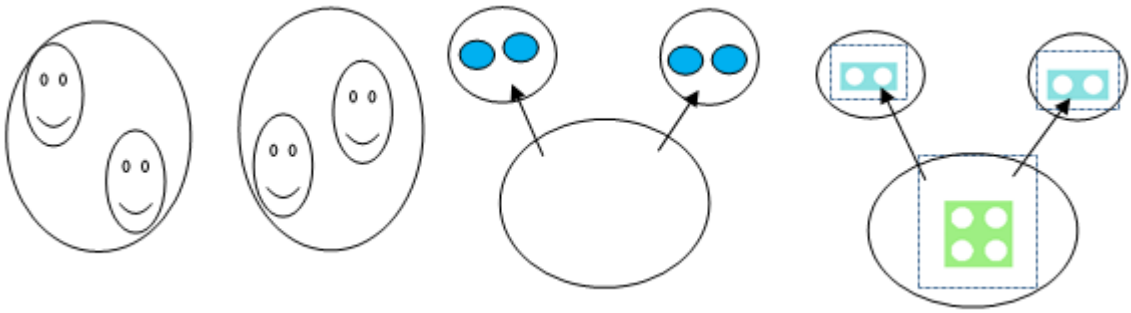
- Use rhymes, stories and songs to support the understanding of division.
- Begin to approach division in play and practical problems involving sharing and grouping in a real or role play context.
- Children to be encouraged to explain orally and, where appropriate, record the solution in the child's own way.
- Children will develop ways of recording calculations using a range of equipment e.g. counters, objects.
- Children should begin to understand division as sharing before introducing it as repeated subtraction (grouping).

Concrete	Pictorial	Abstract
		6 ÷ 2 = 3 3 | 3

- Children can respond to questions such as:
  - How we share this cake / pizza fairly?
  - How many people can share this pizza / cake?
  - I have 12 sweets and put them into groups of 3, how many groups do I have?



We have 4 smiley faces. How many groups of 2 can we make?

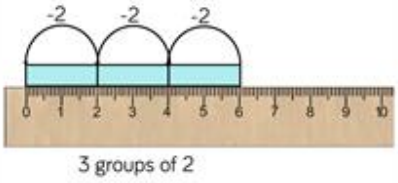
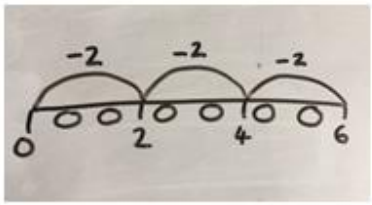
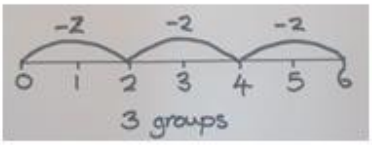


Y2/Y3

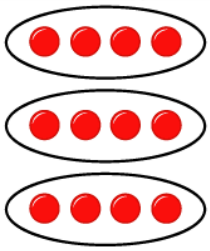
- Children to use drawings or a number line and practical equipment to repeatedly subtract groups of single digit numbers from 1 and 2 digit numbers, answering questions such as:

  How many groups of 2 are there in 6? 6 ÷ 2 =

  How many 2s in 6? What is 6 grouped into 2s?

Concrete	Pictorial	Abstract
		

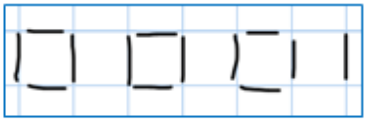
- Use division with arrays to link to multiplication.



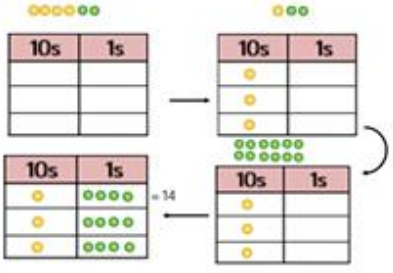
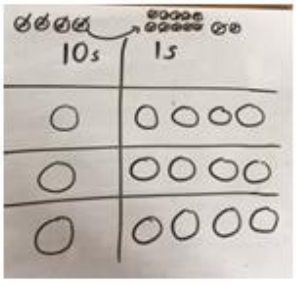
12 ÷ 4 = 3

Y3/Y4

- Children should begin to solve a wider range of real life problems and attach understanding to what the remainder means in the context. e.g. 26 friends want to play five a side football. How many teams of 5 can be made? How many will be left over?

Concrete	Pictorial	Abstract
 There are 3 whole squares, with 1 left over.	 There are 3 whole squares, with 1 left over.	

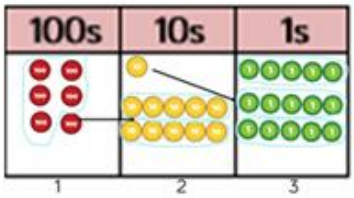
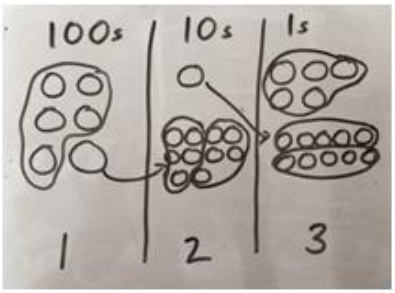
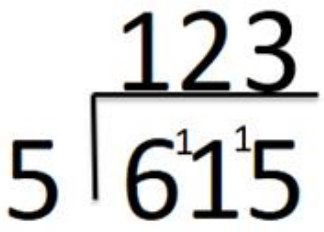
- Division of a 2 digit number by 1 digit number using base ten / Place value counters.

Concrete	Pictorial	Abstract
		Children to be able to make sense of the place value counters and write calculations to show the process. 42 ÷ 3 42 = 30 + 12 30 ÷ 3 = 10 12 ÷ 3 = 4 10 + 4 = 14

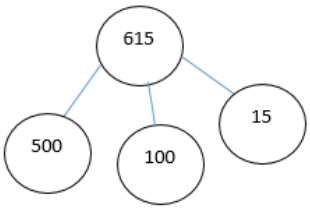
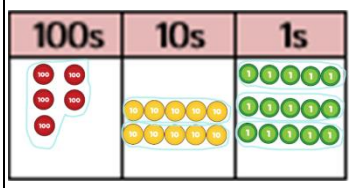
- Children should be encouraged to select an appropriate calculation method, be it mental or written, dependent on the numbers involved in a calculation. To develop this skill, children should be taught to ask themselves, '***Can I do this mentally?***

Y4/Y5

- Division of a 3 digit number by 1 digit number using base ten / Place value counters.

Concrete	Pictorial	Abstract
Short division using place value counters to group. 615 ÷ 5  1. Make 615 with place value 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?	Represent the place value counters pictorially.  	Children to do the calculation using the short division scaffold. 

- Children should explore various ways to solve division calculations.

Using the part whole model below, how can you divide 615 by 5 without using short division?  	I have £615 and share it equally between 5 bank accounts. How much will be in each account? 615 pupils need to be put into 5 groups. How many will be in each group?	5 ⟌ 615 615 ÷ 5 = ☐ = 615 ÷ 5	What is the calculation? What is the answer? 

Compact Method

TU ÷ U

81 ÷ 3

$$\begin{array}{r} 27 \\ 3\overline{)81^{2}1} \end{array}$$

81 ÷ 3 = 27

HTU ÷ U

291 ÷ 3

$$\begin{array}{r} 97 \\ 3\overline{)29^{2}1} \end{array}$$

291 ÷ 3 = 97

Y5 /Y6

ThHTU ÷ U

8502 ÷ 6

8502 ÷ 6 = 1417

$$\begin{array}{r} 1417 \\ 6\overline{)8^{2}5^{1}0^{4}2} \end{array}$$

Involving decimals

87.5 ÷ 7

$$\begin{array}{r} 12.5 \\ 7\overline{)8^{1}7.^{3}5} \end{array}$$

87.5 ÷ 7 = 12.5 or $12\frac{1}{2}$

HTU ÷ TU

603 ÷ 26

$$\begin{array}{r} 23 \text{ r } 5 \text{ or } \frac{5}{26} \text{ depending on context} \\ 26\overline{)6\,0^{8}3} \end{array}$$

603 ÷ 26 = 23 r 5

ThHTU ÷ TU

3236 ÷ 14

$$\begin{array}{r} 231^{\text{r } 2} \\ 14\overline{)3\,2^{4}3^{1}6} \end{array}$$

3236 ÷ 14 = 231 r 2