St John the Baptist, Progression in division

DIVISION

Prerequisite skills and knowledge

Understanding of place value

Counting on and back in multiples of numbers

Division as repeated subtraction.

Use arrays to model divisions and related i.e20/5 = 4, 20/4=5, 5x4=20 etc.

Dividing by 0 = 0

Times tables facts
Build up from
2, 5 and 10; then
3, 4 and 6; finally
7, 8 and 9

Partitioning of numbers

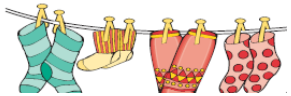
Begin to relate to fractions ½ is dividing by 2, ¼ is dividing by 4

Understand principle of moving columns when x and ÷ by 10, 100, 100

Key vocabulary:
Divide, share equally, halve, equal groups of, divided by, divided into, divisible by, remainder, factor, quotient,

Visual models and prompts

4 groups of 2 socks = 8 socks
8 socks shared between 4 people =2

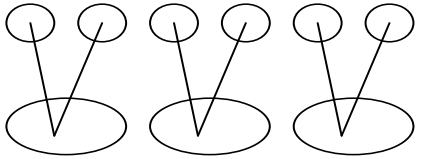


There are 6 Easter eggs. They are shared between 3 children how many does each child get?

Grouping – Number lines

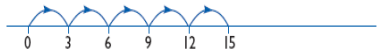
Grouping:

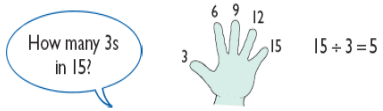
There are 6 biscuits. How many children can have two biscuits each?



Repeated subtraction on a number line:

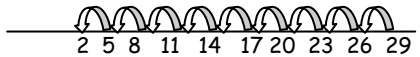
Start at 15 and count back in 3s





Repeated subtraction on a number line, with remainders

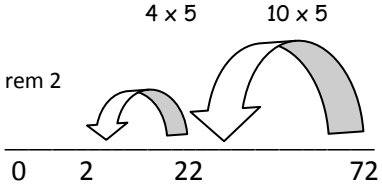
29 ÷ 3 = 9 remainder 2
Count back from starting number in groups of 3



9 groups of 3 and 2 left over

29 ÷ 3 = 9 remainder 2

72 ÷ 5
Focus around groups of 5 and knowledge of 5x table



More efficient grouping

Stickman method:

80 ÷ 5 =

10	10	10	10	10	50
5	5	5	5	5	75
1	1	1	1	1	80

RT

Count back in 5 groups of 10
Count back in 5 groups of 5
Count back in 5 groups of 1
That is 16 groups of 5 in total.
There are none left over, so there is no remainder.
The answer to 80 ÷ 5 = 16

72 ÷ 5 = 14 r2

10	10	10	10	10	50
1	1	1	1	1	55
1	1	1	1	1	60
1	1	1	1	1	65
1	1	1	1	1	70
1	1				72

RT

72 ÷ 5
72
-50 (**10** x 5)
22
20 (**4** x 5)
2 remainder 2

Chunking, most efficient method

Chunking:

6)196
- 60 (6 x 10) → 136
- 60 (6 x 10) → 76
- 60 (6 x 10) → 16
- 12 (6 x 2) → 4

Answer: 32 R 4

So 656÷ 16 = 41

16)$^{5}\cancel{6}^{1}56
- 160 (-16 x 10) → 496
- 160 (-16 x 10) → 336
- 160 (-16 x 10) → 176
- 160 (-16 x 10) → 016
- 016 (-16 x 1) → 000

41

Develop by using more efficient chunks

320 16 x 20
320 16 x 20
640
16 16 x 1
656 41

Short division:

81 ÷ 3 =

27
3)8^{2}1

Write down 16 times table if it helps
1 x 16 = 16
2 x 16 = 32
5 x 16 = 80
10 x 16 = 160
15 x 16 = 240
20 x 16 = 320

Progressing onto Quotient.
Remainders as decimals and fractions