

DIVISION STAGE 1

Progression

- Share problems by sharing objects in a practical or role play context
- Solve problems by sharing into equal groups

Active Learning Through Models and Images:

Give each bear a sweet.
How many sweets do you need?



Give each bear 2 sweets.
How many sweets do you need?



Underlying skills

- One to one correspondence matching a number name to each object
- Understand sharing as everyone having the same
- The physical process of sharing “one for you , one for me”
- Knowing to count how many in a group to find the answer

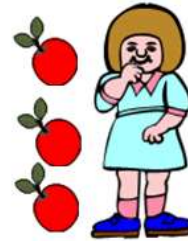
Active Learning Through Models and Images:



You have 3 and I have 3.



We have the same.



DIVISION STAGE 2

Progression

- Division as grouping using physical objects
- Division as sharing using physical objects

Active Learning Through Models and Images:

15 divided by 3 (grouping)

How many 3s in 15?

3 6 9 12 15 $15 \div 3 = 5$

15 divided by 3 (sharing)

Underlying skills

- Understand how to read number sentences as 'how many groups'
- Count forwards in steps of different single digit numbers accurately
- Knowledge of multiplication tables

Active Learning Through Models and Images:

6 9 12 15 $15 \div 3 = 5$

3

DIVISION STAGE 3

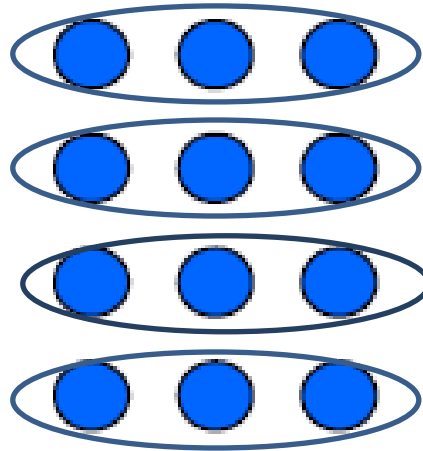
Progression

Reinforce division as grouping and sharing through the use of arrays

Active Learning Through Models and Images:

$$12 \div 4 =$$

12 shared into 4 groups makes 4 groups of 3



Underlying skills

Understand inverse relationship between multiplication and division – fact families

Understand how to read number sentences as ‘how many groups?’

Active Learning Through Models and Images:

$$5 \times 3 = 15$$

$$3 \times 5 = 15$$

$$15 \div 5 = 3$$

$$15 \div 3 = 5$$



$$15 \div 3 = 5$$




DIVISION STAGE 4

Progression

- Use grouping and repeated subtraction to divide

Active Learning Through Models and Images:

13 divided by 4

		4	13
Take away 4		4	9
	Leaves		9
Take away another 4		4	5
	Leaves		5
Take away another 4		4	1
	Leaves		1

"Can I make a group of 4?"
"Can I make another group of 4?"

3 groups of 4, with 1 remainder = 3 r1

Underlying skills

Recall of appropriate multiplication facts

Subtract 1 and 2 digit numbers mentally

Derive associated division facts for known multiplication facts: 2, 3, 4, 5, 10, beginning to know 6, 7, 8 and 9.

Active Learning Through Models and Images:

$4 \times 1 = 4$
 $4 \times 2 = 8$
 $4 \times 3 = 12$

$4 \div 1 = 4$
 $8 \div 2 = 4$
 $12 \div 3 = 4$

$4 \div 4 = 1$
 $8 \div 4 = 2$
 $12 \div 4 = 3$

DIVISION STAGE 5

Progression

- Use multiples of the divisor to support calculation
- The subtraction aspects should ideally be done mentally. Where the child is unable to do this they should make use of the school approach with jottings next to their working out.
- Taking larger chunks will help to avoid more difficult subtractions.

Active Learning Through Models and Images:

Long division:

256 divided by 7

$$\begin{array}{r} 7 \overline{) 256} \\ \underline{210} \\ 46 \\ \underline{42} \\ 4 \end{array}$$

(30×7)
 (6×7)

= 36 r 4

FACT BOX

$3 \times 7 = 21$
 $30 \times 7 = 210$
 $6 \times 7 = 42$

Short division:

$$\begin{array}{r} 8 \quad 6 \quad \text{r}2 \\ 5 \overline{) 432} \end{array}$$

Answer = 86 r 2

$$\begin{array}{r} 4 \quad 5 \quad \text{r}1 \\ 11 \overline{) 496} \end{array}$$

Answer = 45 $\frac{1}{11}$

Underlying skills

Recall of appropriate multiplication facts

Using known number facts to help derive others, using place value

- e.g. $2 \times 4 = 8$ so $20 \times 4 = 80$
- $10 \times 6 = 60$ so $20 \times 6 = 120$
- adding known facts
- $10 \times 3 = 30$ $5 \times 3 = 15$ so $15 \times 3 = 45$

Mental subtraction

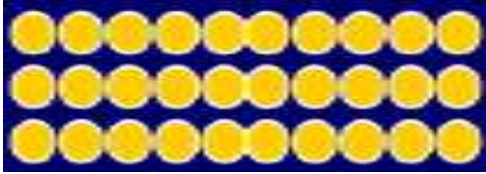
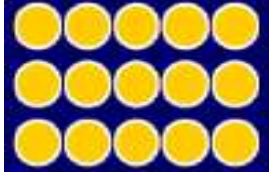
Knowledge of school written subtraction method for more difficult calculations

Active Learning Through Models and Images:

- $4 \times 1 = 4$
- $4 \times 10 = 40$
- $4 \times 100 = 400$



DIVISION STAGE 6

<p>Progression</p> <ul style="list-style-type: none"> Use an increased knowledge and understanding of facts to choose efficient numbers to subtract 	<p>Active Learning Through Models and Images:</p> <p>649 divided by 27</p> $ \begin{array}{r} 27 \overline{) 649} \\ \underline{540} \\ 109 \\ \underline{108} \\ 1 \end{array} $ <p style="margin-left: 150px;">(20 x 27)</p> <p style="margin-left: 150px;">(4 x 27)</p> <p>= 24 r1</p> <div style="float: right; border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>FACT BOX</p> <p>2 x 27 = 54</p> <p>20 x 27 = 540</p> <p>4 x 27 = 108</p> <p style="text-align: center;">If I know this, I can double it to know this.</p> </div>
<p>Underlying skills</p> <p>Recall of appropriate multiplication facts</p> <p>Using known number facts to help derive others, using place value</p> <p>e.g. 2 x 4 = 8 so 20 x 4 = 80</p> <p>10 x 6 = 60 so 20 x 6 = 120</p> <p>adding known facts</p> <p>10 x 3 = 30 5 x 3 = 15 so</p> <p>15 x 3 = 45</p> <p>Mental subtraction</p> <p>Knowledge of school written subtraction method for more difficult calculations</p>	<p>Active Learning Through Models and Images:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p>10 x 3 = 30</p> </div> <div style="text-align: center;">  <p>5 x 3 = 15</p> </div> </div> <p>So...</p> <p>15 x 3 = 45</p>

DIVISION STAGE 7

Progression

- Use known facts to divide using decimals

Active Learning Through Models and Images:

$\begin{array}{r} 7 \overline{) 87.5} \\ \underline{70.0} \\ 17.5 \\ \underline{14.0} \\ 3.5 \\ \underline{3.5} \\ 0 \end{array}$	(10×7) (2×7) (0.5×7)	<p>FACT BOX</p> $10 \times 7 = 70$ $2 \times 7 = 14$ $5 \times 7 = 35$ $0.5 \times 7 = 3.5$
= 12.5		

$\begin{array}{r} 6 \overline{) 97.5} \\ \underline{60.0} \\ 37.8 \\ \underline{36.0} \\ 1.8 \\ \underline{1.8} \\ 0 \end{array}$	(10×6) (6×6) (0.3×6)	<p>FACT BOX</p> $10 \times 6 = 60$ $6 \times 6 = 36$ $3 \times 6 = 18$ $0.3 \times 6 = 1.8$
= 16.3		

Underlying skills

Use facts up to 12x12 to derive facts involving multiples 10/1000

Recall of appropriate multiplication facts

Using known number facts to help derive others, using place value
 e.g. $2 \times 4 = 8$ so $20 \times 4 = 80$
 $10 \times 6 = 60$ so $20 \times 6 = 120$
 adding known facts
 $10 \times 3 = 30$ $5 \times 3 = 15$ so $15 \times 3 = 45$

Mental subtraction

Knowledge of school written subtraction method for more difficult calculations

Active Learning Through Models and Images:

Fact Family

$0.3 \times 0.6 = 0.18$

$0.3 \times 6 = 1.8$

$3 \times 0.6 = 1.8$

$3 \times 6 = 18$

$30 \times 6 = 180$

$3 \times 60 = 180$

$30 \times 60 = 1800$

