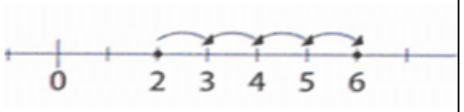
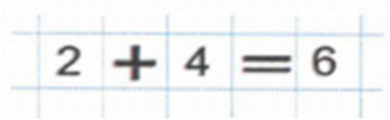
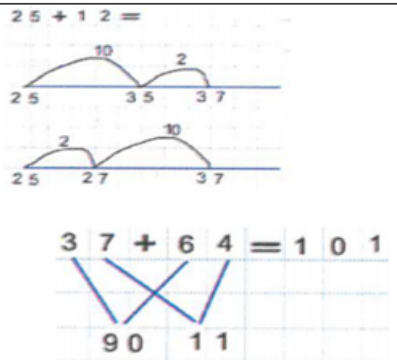
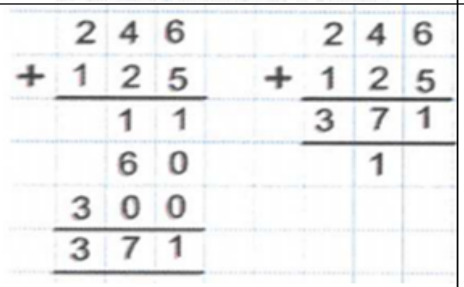
Maths in Year Two Addition

Stage 2	• Understand addition can be done in any order (commutative) • Adding a one digit number or a multiple of 10 to one-digit or a two-digit number • Learn to add ten to any given number • Understanding double as addition e.g. 7 + 7 = 14 • Use a given number line or a hundred square and count on • Know quick recall of number bonds within 20 • Begin to partition (TU) using Dienes or other appropriate equipment • Understand that subtraction is the reverse of addition e.g. 6 + 4 = 10 so 10 – 4 = 6 • To add three or more numbers together • Begin to do addition calculations using units of measure	 	+, add, addition, sum, inverse, plus, how many, equals, total, partition, altogether, Dienes, how much more is…
Stage 3	• Partition (HTU) • Use hundred square to count on and begin to use shortcuts e.g. 25 + 12 (add 10 then 2, or add 2 then 10) • Pupils begin to use own, empty number line • Horizontal recording of partitioned calculation • Know quick recall of number bonds within 50 and 100		Add, plus, how many, altogether, total, place value, columns, partition, total, hundreds, tens, units, ones, counting up / on, rounding, carrying tens
Stage 4	• Expanded method used • Pupils develop on to condensed vertical (column) addition as an efficient written method to add two-digit and three-digit integers, carrying tens only • Use Dienes equipment to model		Place value, columns, partition, total, hundreds, tens, units, ones, counting up / on, rounding, carrying tens, integers

Addition Methods: Dienes

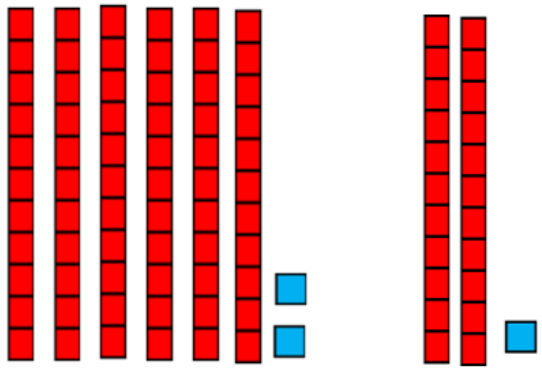
Let's Learn

What is the number sum?

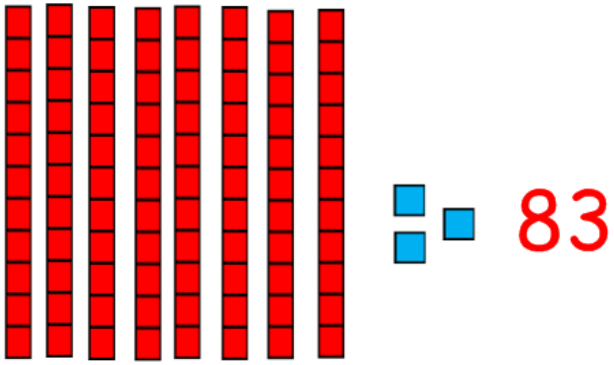
62 + 21 =

How are we going to work it out?

Let's use a Dienes rods.



62 + 21 =



83

Addition Method: Hundred Square

Let's Learn

What is the number sum?

62 + 21 =

How are we going to work it out?

Let's use a hundred square.

51	52	53	54	55	56
61	62	63	64	65	66
71	72	73	74	75	76
81	82	83	84	85	86
91	92	93	94	95	96

We add 2 tens (down 2 squares) and 1 unit (across)

Addition Method: Number Line

Let's Learn

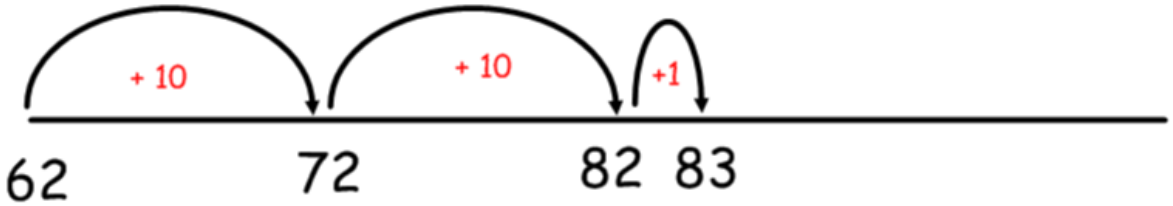
What is the number sum?

$$62 + 21 =$$

How are we going to work it out?

Let's use a number line.

Start with the biggest number and put it on a blank number line. Partition the other number. Be ready to add on the tens and units.



Addition Method: Partitioning

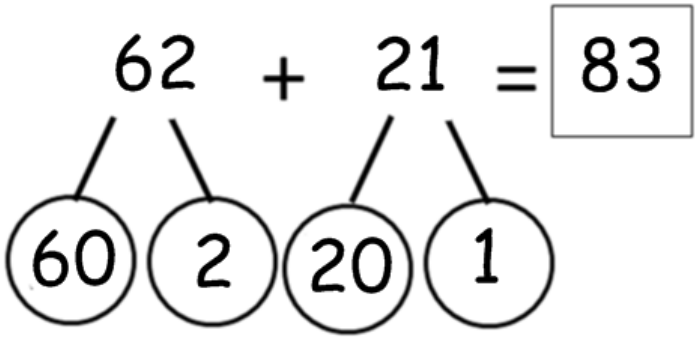
Let's Learn

What is the number sum?

62 + 21 =

How are we going to work it out?

Let's use partitioning.



2 + 1 = 3

60 + 20 = 80

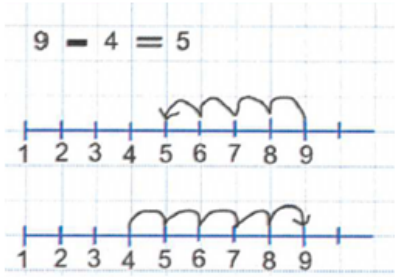
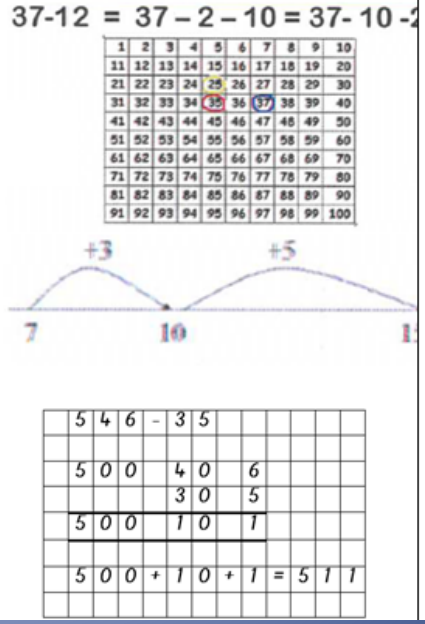
80 + 3 = 83

Addition Method: Column Addition

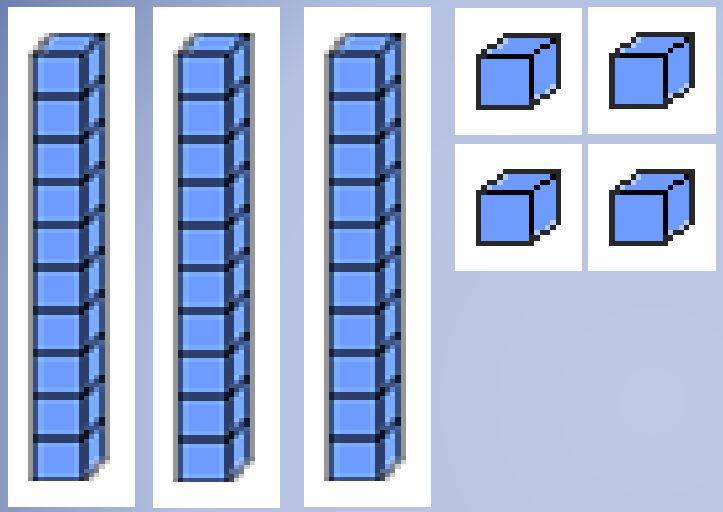
Finally add your 100s and total it all up!!

$$
\begin{array}{r}
135 \\
+\ 42 \\
\hline
7\ (5 + 2) \\
70\ (30 + 40) \\
100\ (100 + 0) \\
\hline
177 \\
\end{array}
$$

Maths in Year Two
Subtraction

Stage 2	• Start with single digits • Subtraction understood firstly as taking-away • 'Finding the difference' then taught • Vocabulary and symbols used to describe actions and to record number sentences • Practical methods and informal written methods used to subtract simple numbers • Able to use number lines and hundred squares to find the difference (counting on/up or counting back) • Understand subtraction cannot be done in any order (non-commutative)		Subtract, minus, How much less is …than…? =, equals, the difference between, forwards, backwards, count up, count back, count on
Stage 3	• Use of hundred square to take away 10, 20, 30… • Use of hundred square to take away – partition the number into tens and units • Use of numbered or empty number lines to solve • 'Find the difference' problems by counting on or counting back 15 – 8 = 7 15 – (5+3) = 7 • Expanded subtraction method used with partitioning (subtract the units then subtract the tens, then subtract the hundreds)		One hundred less, crossing the tens boundary

Method 1 Dienes



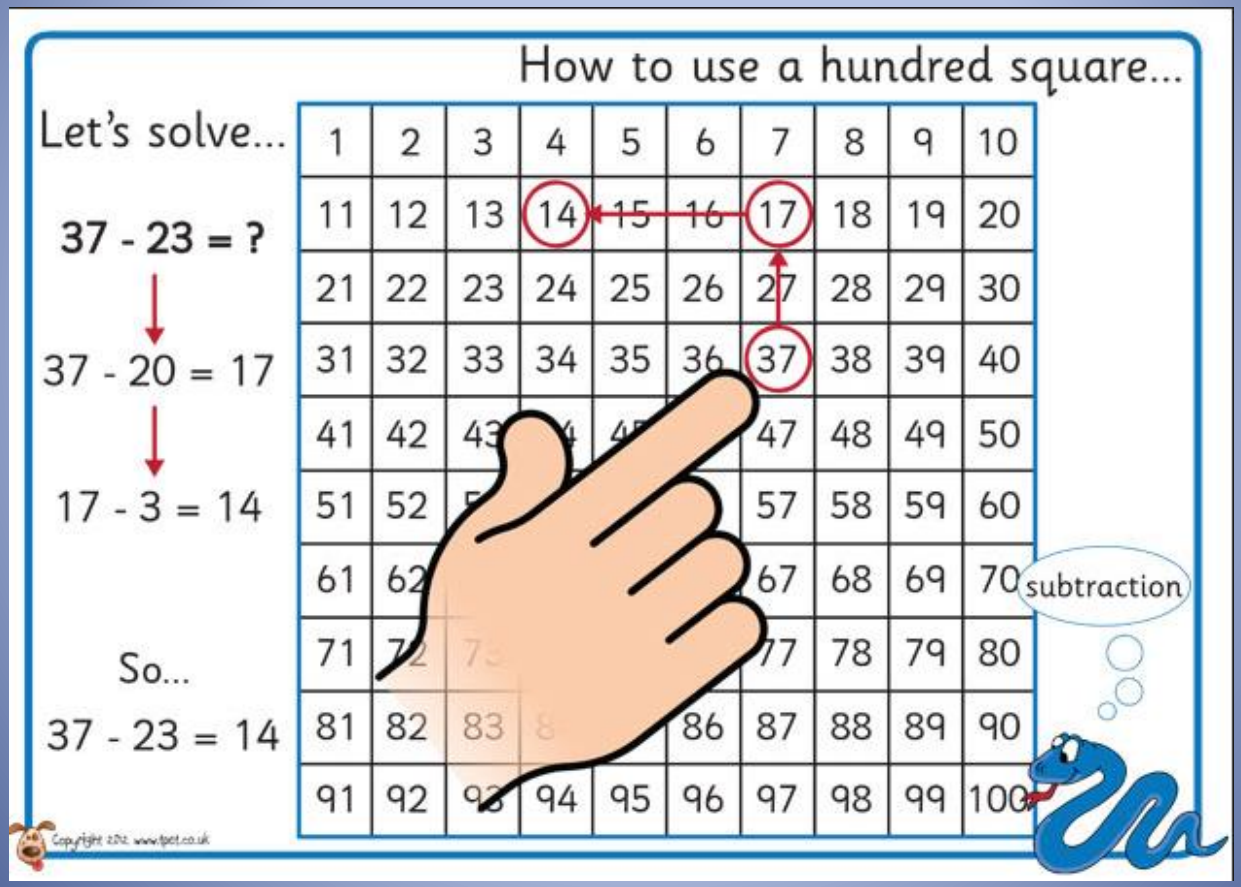
34 – 3 =

Re-cap how to ‘draw’ Dienes rods quickly and neatly in books for Super-spicy and Extra-spicy group, and how to cross them out to delete them.

It is possible to just draw long and short lines for T and U.

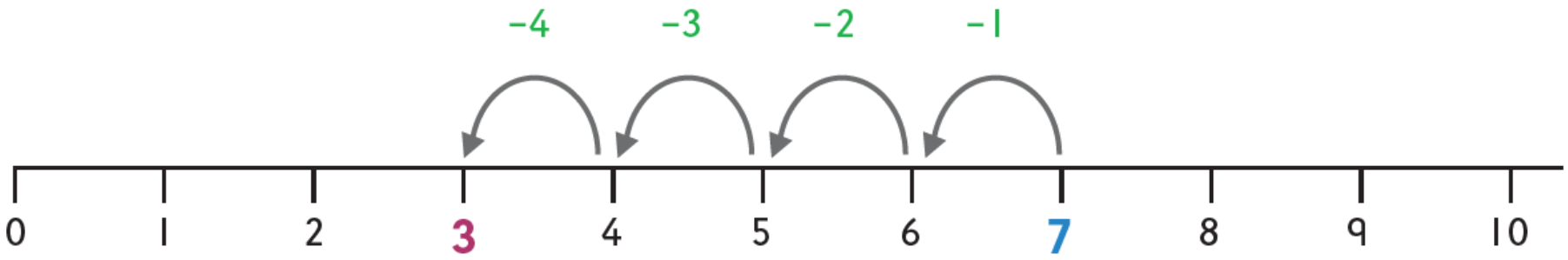
Method 2 Hundred Square

Using a hundred square



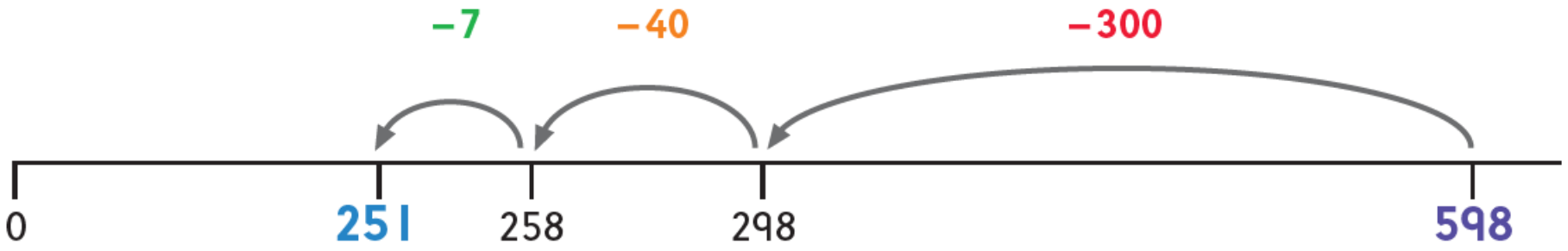
Method 3
(Empty) Number Line

Working backwards on a number line…



$7 - 4 = 3$

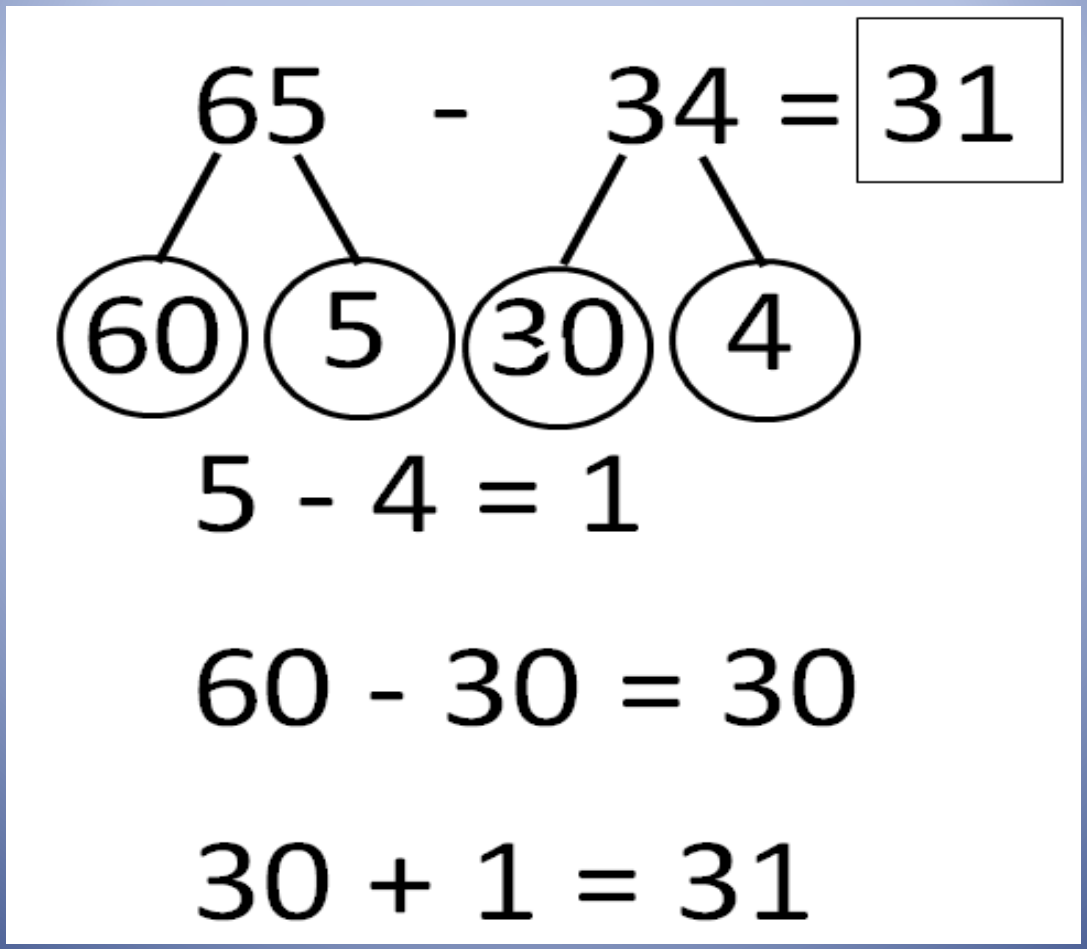
Method 3
(Empty) Number Line



598 − 347 = 251

Method 4 Partitioning

Take away by subtracting tens and units

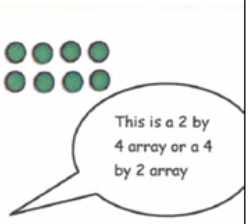
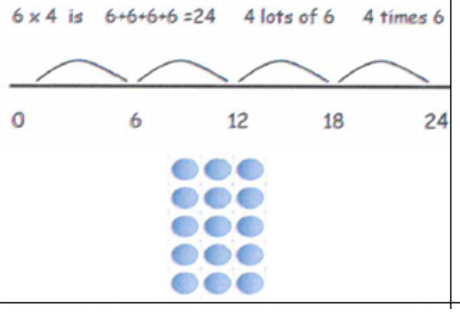


Method 5 Column Subtraction

	5	4	6	
-		3	5	
			1	(6 – 5)
		1	0	(40 – 30)
+	5	0	0	(500 – 0)
	5	1	1	

Maths in Year Two

Multiplication

Stage 2	• Understand multiplication as repeated addition • Introduction of 'x' sign • Counting in 2s, 5s and 10s • 'Groups of' jottings are recorded pictorially • A more formal array is recorded • Calculations involve 2s, 5s 10s times tables • Understand multiplication can be done in any order (commutative) (i.e. 5 x 2 = 2 x 5 = 10)	2 x 4 = 8 4 x 2 = 8 	Multiply, multiplication, multiplied by, array, groups of, lots or, product
Stage 3	• Number sentences recorded 3x5 = 15 • Further use of pictorial arrays • Number line using repeated addition • Know 2x, 5x and 10x tables		Once, twice, three times Repeated addition Row, column, product, times tables

Maths in Year Two

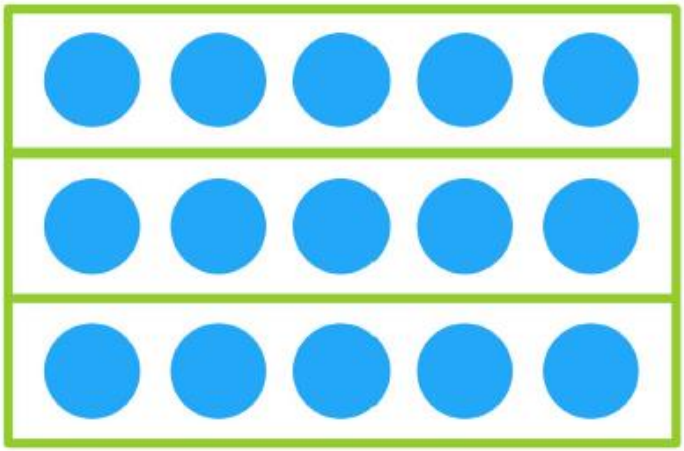
Multiplication

- Arrays
- Equal groups
- Repeated Addition
- (Empty) Number Line

Maths in Year Two

Array

Rows and columns
with an equal amount in each.

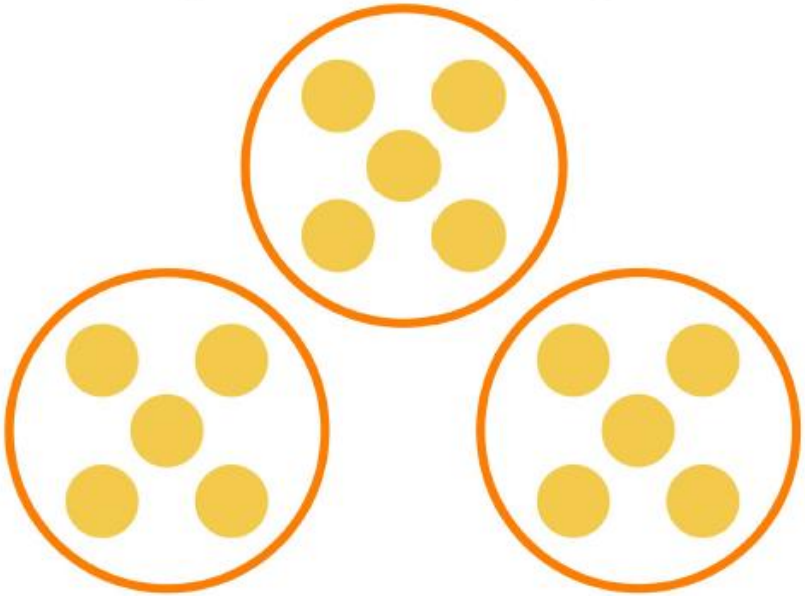


$3 \times 5 = 15$

Maths in Year Two

Equal Groups

Use the same number of units in each group.



$3 \times 5 = 15$

Max has 3 boxes of crayons. There are 5 crayons in each box.

How many crayons does he have altogether?

Maths in Year Two

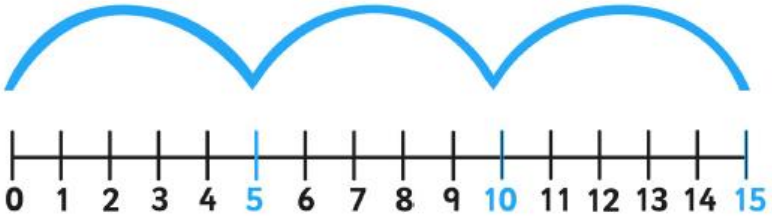
Repeated Addition

$5 + 5 + 5 = 15$

$3 \times 5 = 15$

Number Line

Hop 5 numbers at a time, where do you land?

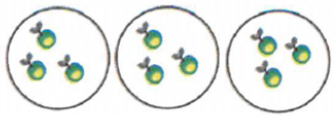
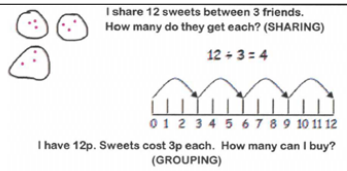


1 hop of 5 = 5
2 hops of 5 =10
3 hops of 5 = 15

$3 \times 5 = 15$

Maths in Year Two

Division

	Division	Illustration	Vocabulary
Stage 1	• Halve a number (using objects) • Objects are shared out equally and objects within groups are counted • Objects are shared out through practical activities • Informal recordings will include jottings of pictorial groups • Simple numbers are used (no remainders) • Understand the difference between grouping and sharing		Half, halve, share, equal
Stage 2	• Quarter a number (using objects) • The division sign is introduced • Objects / numbers are divided into equal groups using multiplication facts • Arrays are used to understand number • Informal written methods are used to record • Understand division cannot be done in any order (non-commutative)		Division, divide, group, share, equal
Stage 3	• Sharing /grouping taught as two aspects of division. Grouping is taught on a number line but sharing is taught using jottings • Division (repeated subtraction) seen as the inverse of multiplication • Use of numbered number line • Write fractions 1/3, 1/4 2/4 and 3/4 of quantity • Write simple fractions for example, 1/2 of 6 = 3		Inverse, share equally, one each, two each, pairs, divide, divided by, lots of, groups of, jumps

Maths in Year Two

Division

- Repeated Subtraction
- (Empty) Number Line
- Sharing
- Grouping

Maths in Year Two

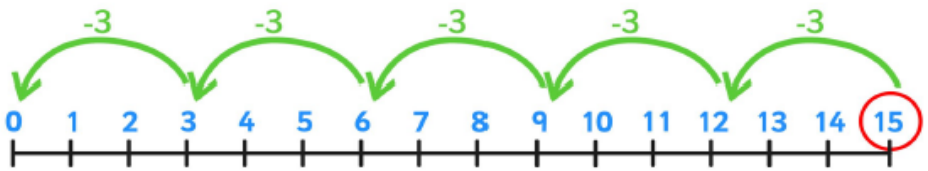
Division Strategies

Repeated Subtraction

+ (Empty) Number Line

You can use repeated subtraction to see how many times a smaller number goes into a bigger one.

$$15 \div 3 = ?$$



The number of times you can take 3 from 15 is 5.

$$15 - 3 - 3 - 3 - 3 - 3 = 0$$

$$15 \div 3 = 5$$

Maths in Year Two

Sharing

Share the slices of pizza equally between the plates.

How many slices per plate?

Plate 1

Plate 2

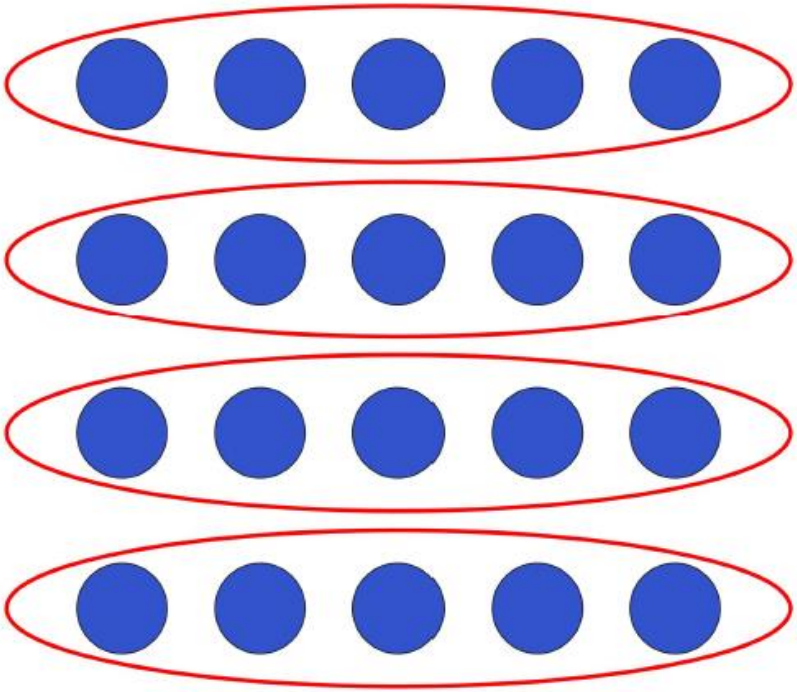
$12 \div 2 = 6$

Maths in Year Two

Grouping

$$20 \div 5 = 4$$

20 divided by 5 gives 4 groups.



Grouping using arrays.

Supporting your child with Maths

The purpose of using a 100 square

- It helps children to develop their understanding of large numbers
- It is a natural progression from using a number line
- A 100 square is a really simple maths aid which helps children with addition, subtraction and multiplication

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100