Numeracy Year 2 Workshop

Parents and Children working together.

Addition and Subtraction Methods Using the Hundred Square.

Adding or Taking away a 10's number.   Try using the 200 square – children often have difficulty bridging the 100.

Adding

36 + 10 =

42 + 20=

59 + 30=

78 + 40=

Subtraction

54- 10 =

26 – 20 =

98 – 60 =

145 – 50 =

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

Extension - Addition and Subtraction Methods Using the Hundred Square.

Adding or Taking away any number.

Addition

24 + 15=

24 + (10 +5)=

32 + 51 =

32 + (50 +1) =

Now Subtraction

Counting Back

56- 24 =

56 – (20 – 4)=

89- 45 =

89 – (40 -5) =

Counting On

56 – 24 =

24, 34, 44, 54, 56

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

When the children are confident and competent at using the Hundred Square we move onto solving calculations without using any equipment and children draw their own number lines
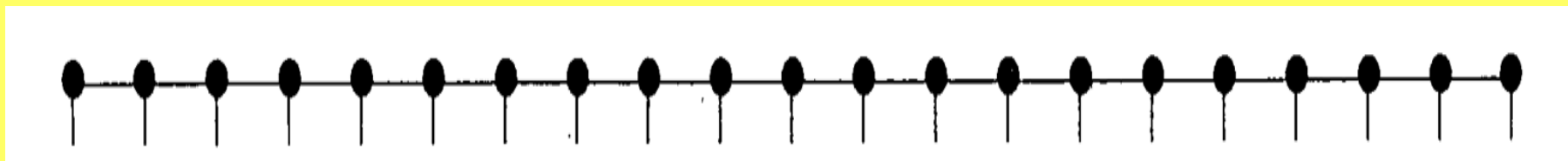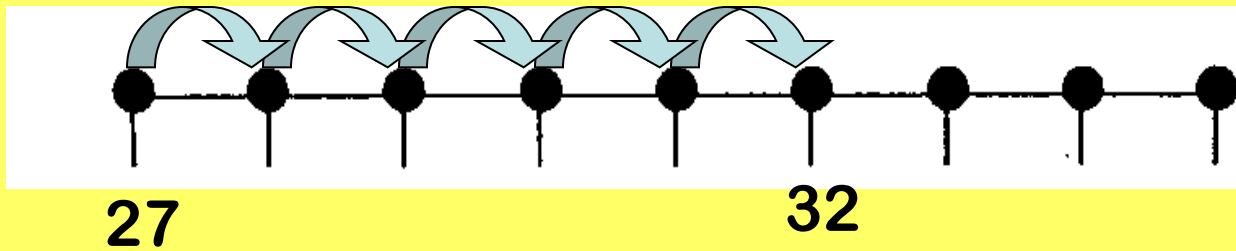

Number lines

Can be used for addition, subtraction, division and multiplication problems.

Addition on the number line

27 + 5 =

27

32

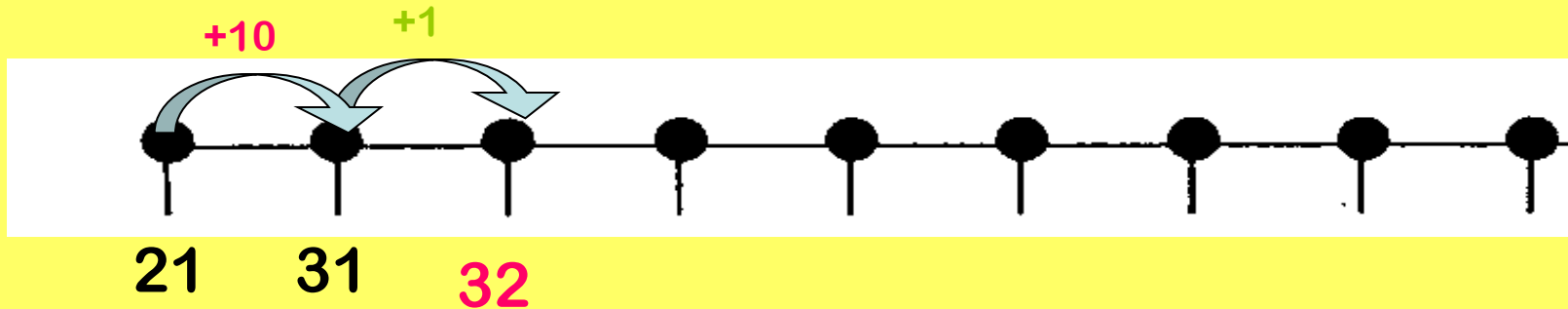If the children want to they can draw the addition sum to check their answers

27   + 5 =

II ▫□□▫ □□□   □□ □ □□   =

Adding tens and units on the number line

21 + 11 =

21 + 10 = 1 =

Can you draw it ?

+10   **+1**

21   **31**   **32**

33 + 25=

33 + (20 + 5) =

+10   **+10**   **+1**   **+1**   **+1**   **+1**   **+1**
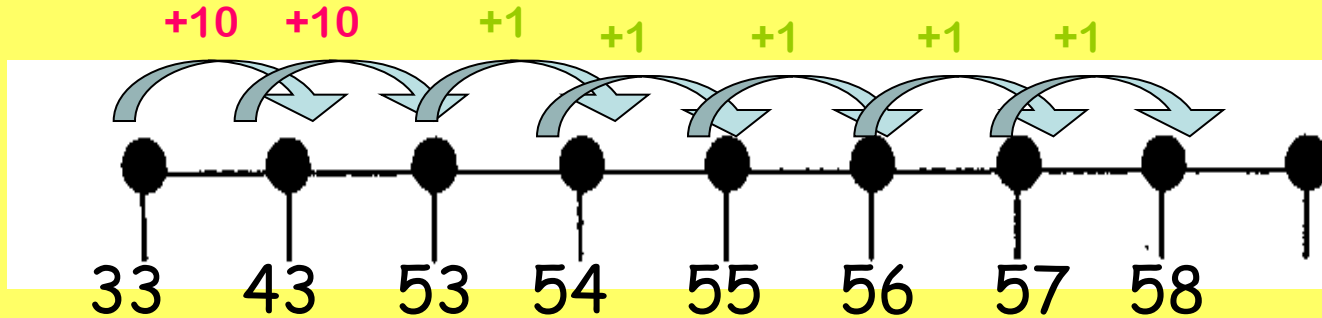
33   **43**   **53**   **54**   **55**   **56**   **57**   **58**
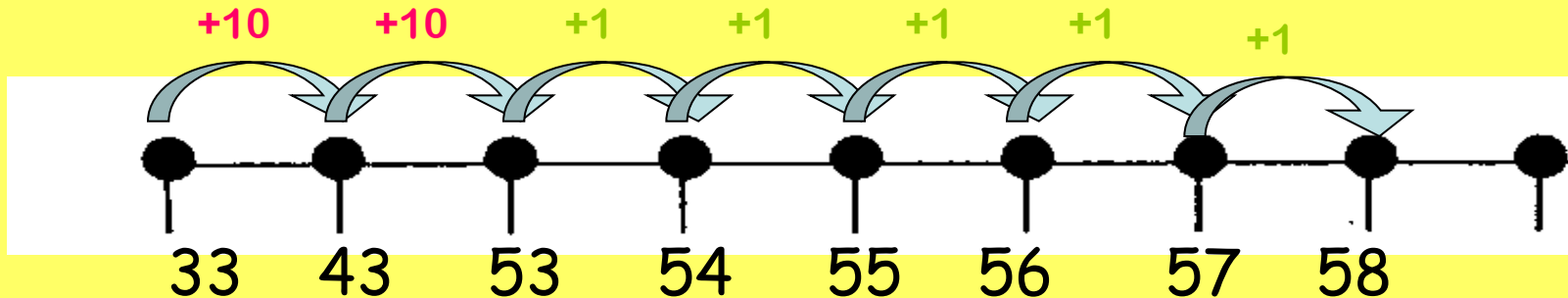
Children have the option to either add the units or the tens first.

We just added tens first.

$$33 + 25 =$$

$$33 + (20 + 5) =$$

+10 +10 +1 +1 +1 +1 +1

33   43   53   54   55   56   57   58

Some people prefer to add the units first:

$$33 + 25 =$$

$$33 + (20 + 5) =$$

+1 +1 +1 +1 +1 +10 +10

33   34   35   36   37   38   48   58
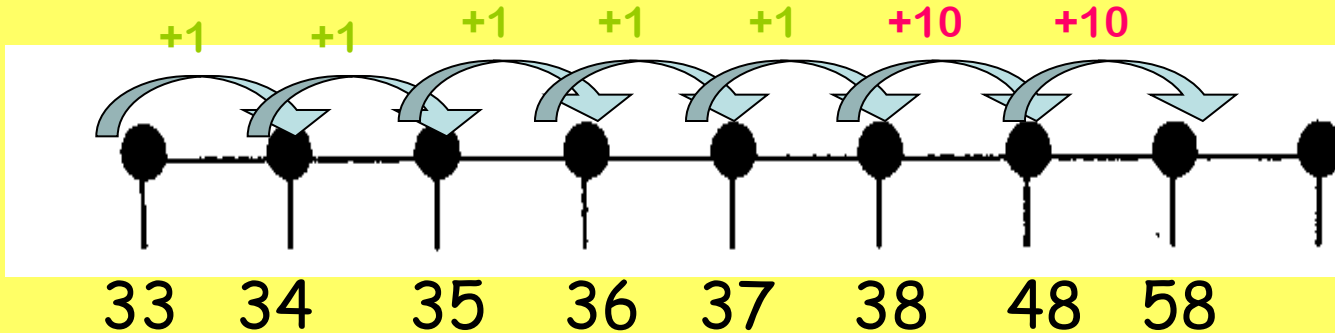
The final stage is to add the unit as a whole:

33 + 25=

33 + (20 + 5) =

+10   +10   +5

33   43   53   58
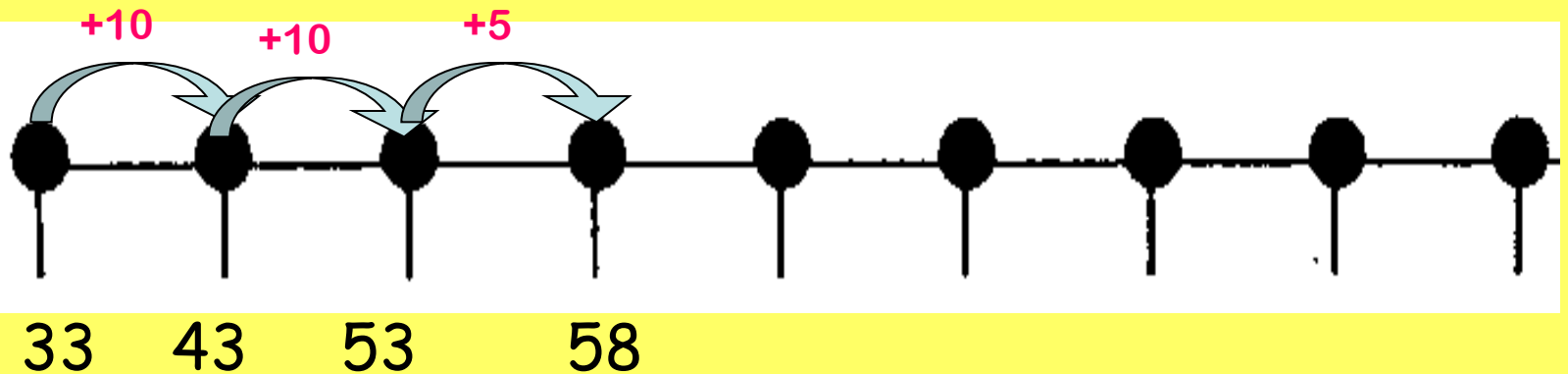
We will then move onto adding 3 digit numbers.

$$253 + 124 =$$

$$253 + (100 + 20 + 4) =$$

+100   **+10**   +10   +1   +1   +1   +1

253   353   363   373   374   375   376   377
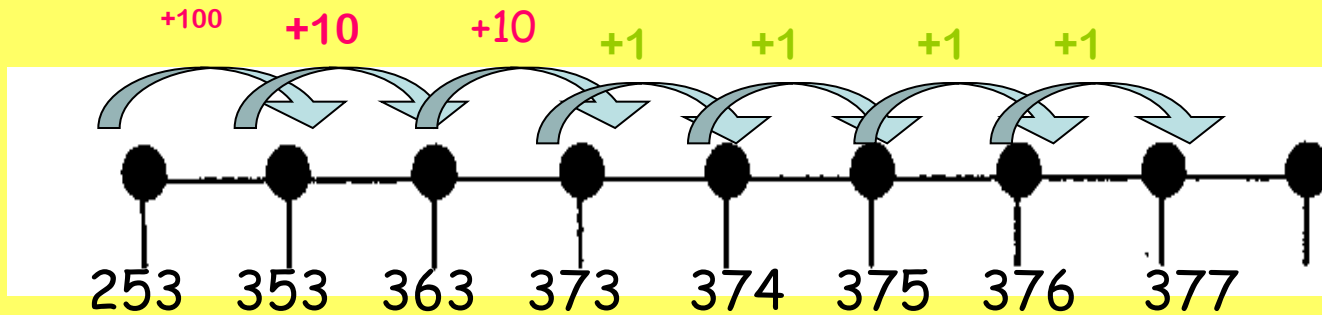
Again the children can draw this in pictures to check that the answer is right!

Now try these on your wipe board and draw the number line

$14 + 13 =$

$14 + (10 + 3) =$

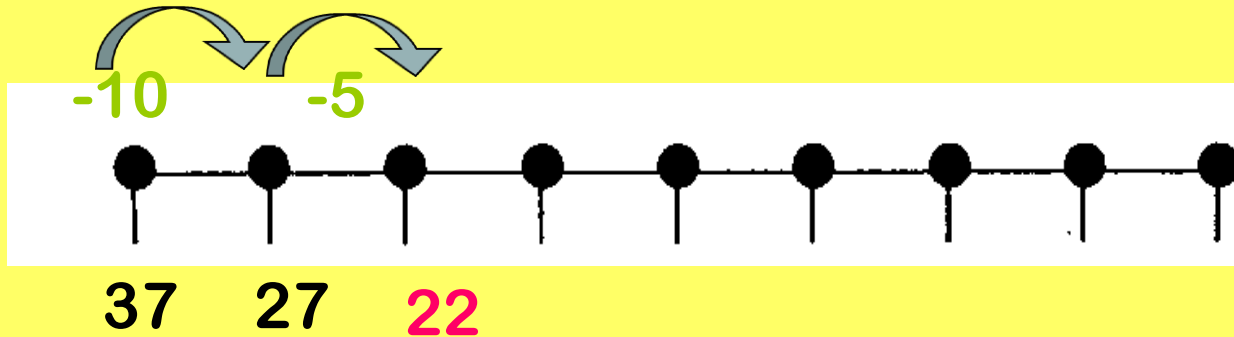$19 + 23 =$

$19 + (20 + 3) =$

$22 + 37 =$

$22 + (30 + 7) =$

$345 + 127 =$

$345 + (100 + 20 + 7) =$

Take away (Subtraction) on the number line – uses
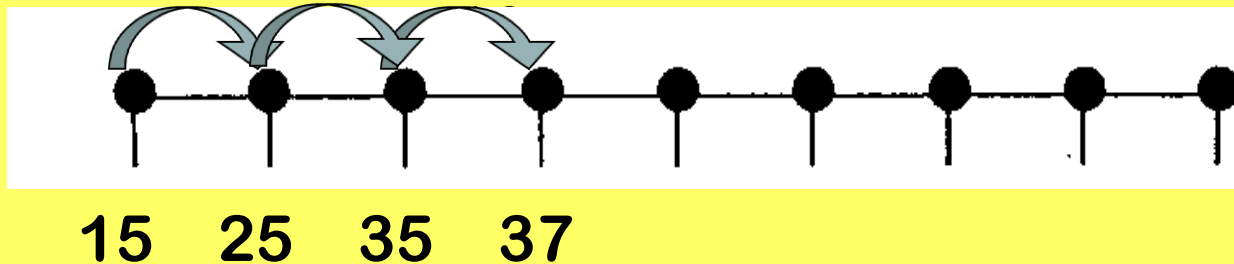the same skills but this time the children can
choose to 'count back'.

$$37 - 15 =$$

$$37 - 10 - 5 =$$

-10   -5

37   27   22

Or they can ' count on ' from the smallest number

+10   +10   +2 $$37 - 15 = 22$$

15   25   35   37

Now try these on your number line- you can either 'count back' or 'count on'

Count Back

36 – 24 =

36 – (20 – 4) =

98- 62 =

98 – (60- 2)=

248- 192 =
248 – (100-90- 2)=

Count On

36 – 24 =

24   34   36

98- 62 =

62   72   82   92   98

248- 192 =

192 202 212 222 232 242 248

When children are secure at solving addition and subtraction mentally they can move on to the Column method
(Children must be secure on Place value and partitioning)

- Pupils build on their understanding of place value, partitioning and their concrete experiences to develop columnar methods of addition which bridge the tens, then hundreds, initially in the expanded form.

Expanded method

It is important that the children have a good understanding of place value and partitioning using concrete resources and visual images to support calculations. The expanded method enables children to see what happens to numbers in the standard written method.

48 + 36

67+	83 +
24	42
11	5
80	120
91	125

and check answer

- # Multiplication and Division handouts.

Multiplication

Step 1
Draw arrays:

How many wheels are there on 6 cars?
What calculation do we need to do?

4 x 6   or   6 x 4

Are these the same? Do they give the same answer?

```
x x x x x x                    or        x x x x
x x x x x x                              x x x x
x x x x x x                              x x x x
x x x x x x                              x x x x
                                         x x x x
                                         x x x x
```
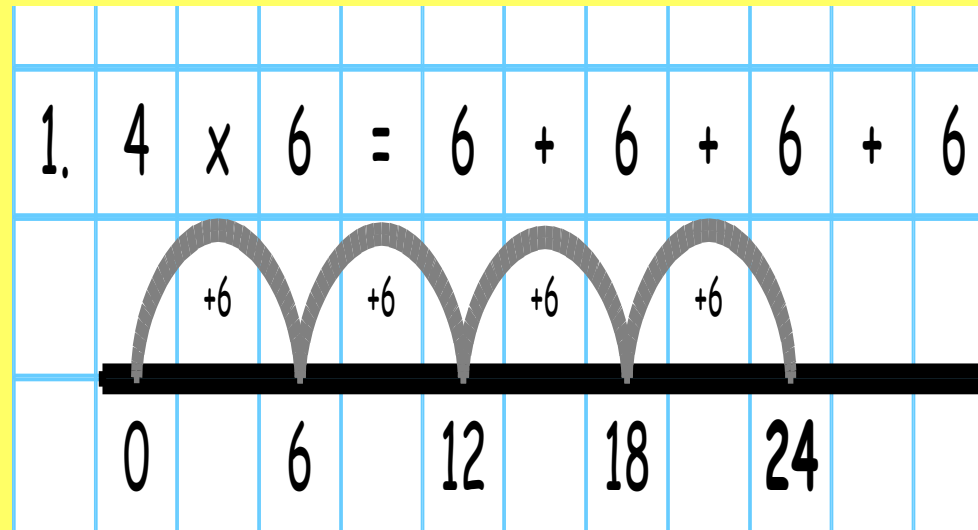
We call these <u>Arrays</u>

Multiplication can be done in any order!

- **<u>Step 2</u>**
- **Repeated Addition:**
- **4x 6 =**
-      6 + 6 + 6 + 6,   or   4 + 4 + 4 + 4 + 4 + 4,

- **<u>Step 3</u>**
- **Using a number line**

- ## Division

Step 1

Division or equal sharing

Equal sharing occurs when a quantity is shared equally into a given number of portions. We work out how many there are in each portion. We know how many we have to share and how many to share between but not how many they will each get.

Young children often engage in sharing activities of their own; sharing of toys, fruit, sweets …6 toy cars are shared between 2 children. How many will they have each?
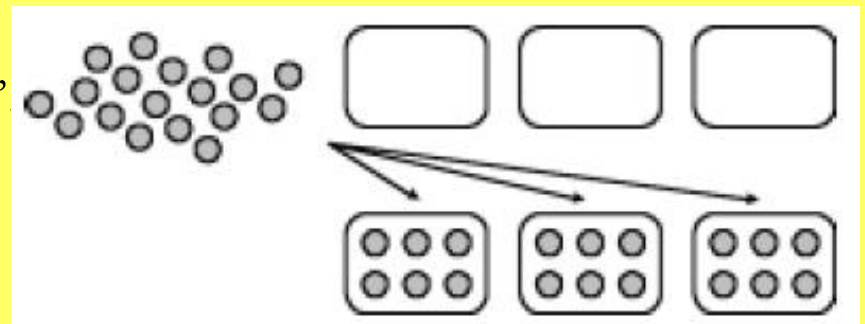
Step 2

Divide

18 ÷ 3

We read 18 ÷ 3 as '18 divided between 3'.

'Divide 18 into 3 equal groups.

How many are there in each group?'

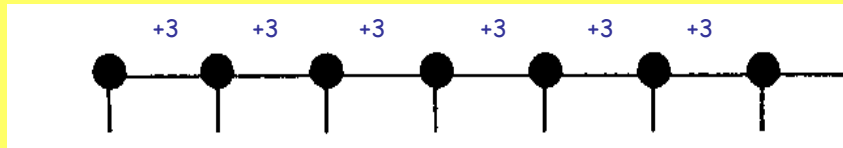If 18 marbles are shared out equally among 3 children, the calculation 18 ÷ 3 can be modelled as:

Step 3

Repeated addition Using a number line:

18 ÷ 3 =

Which is the same as   3+3 +3 + 3 + 3 + 3 = 18

Count how many 3's have been added – the answer is 6.