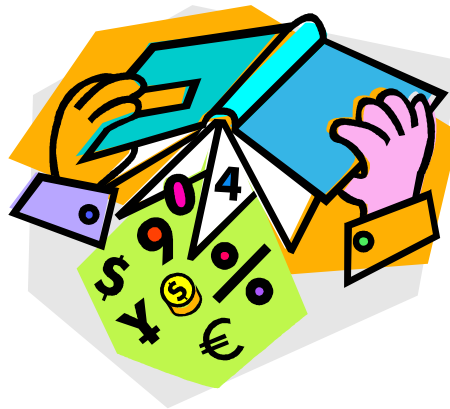
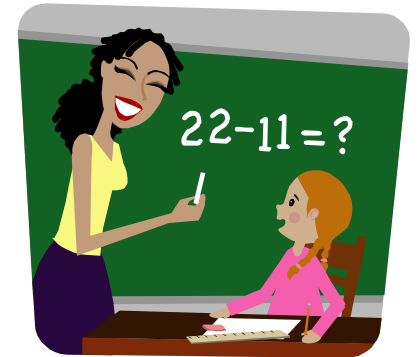


Welcome to the parent's afternoon for Maths



Agenda for the afternoon

- Brief overview of NNS
- Look at calculation methods
- Participation

National Numeracy Strategy

- Why have it?
- Standards were low when children reached Secondary Schools.
- No continuity or guidance on teaching Maths.
 - A whole school approach could be adopted towards Maths.
 - Standards began to rise and then high expectation from staff and pupils of what could be achieved formed.

- Clear, realistic targets for raising standards and a manageable plan for achieving them.
- Assessment and tracking of pupils progress was possible.
- There was a common understanding of Numeracy and how to promote it.
- Room for consistent progression through school.

Example of a typical Maths lesson.

Share objectives with the children.

10 minutes **Mental/Oral** Starter.

40 minutes **Main Activity**, Ind,pair,group

10 minutes **Plenary**

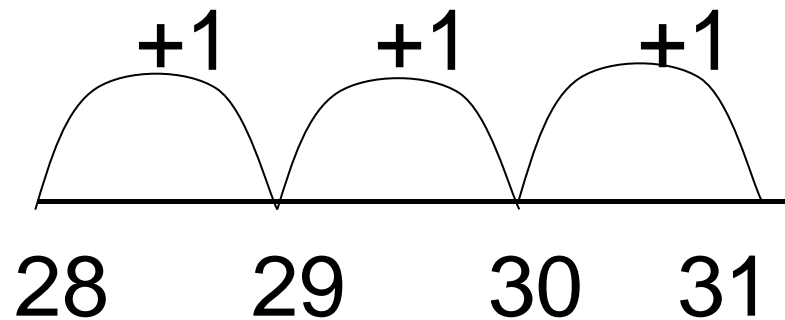
- Negative view of Maths from own school days?
- Noticed an improvement in you're child's mental skills?
- Children's concentration span is 1 minute for every year of age. So NNS is about fun and getting actively involved.

Calculation methods for addition

- KS1 Addition done horizontal and not in columns e.g $3 + 28$

Put the biggest number first

$$28 + 3$$



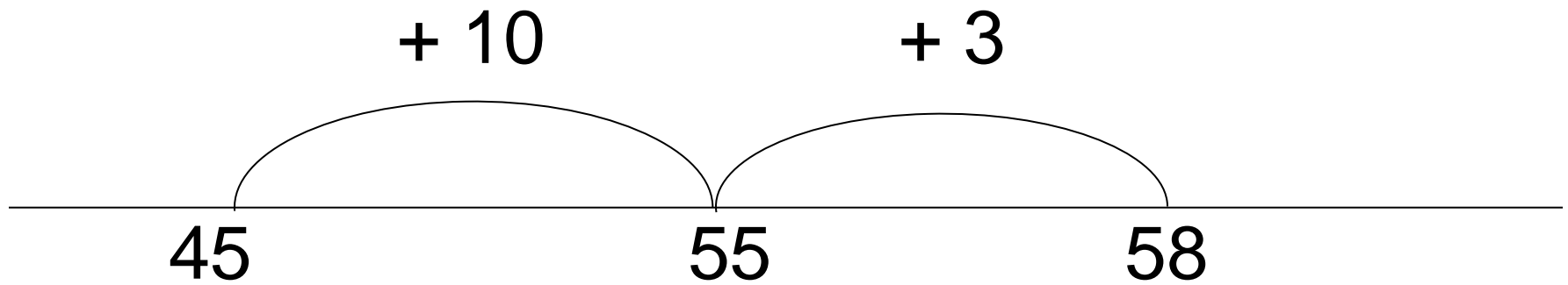
- KS2 Can be done in two ways
- 1. Partitioning
- 2. Number line method

$$\begin{array}{c} 45 + 13 \\ \swarrow \quad \searrow \quad \swarrow \quad \searrow \\ 40 \quad 5 \quad 10 \quad 3 = 50 + 8 \end{array}$$

$$\begin{array}{r} 45 \\ \underline{13} \end{array}$$

Have to carry numbers. Children have no real understanding of the method.

The aim - For children to be good mentally then go on to pencil and paper



The answer is 58

$$45 + 13 = 58$$

This can lead into $358 + 73 =$

Partition/split both numbers

$$300 + 50 + 8$$

$$50 + 70 = 120$$

$$70 + 3$$

$$8 + 3 = 11$$

$$300 + 100 = 400$$

$$20 + 10 = 30 + 1$$

$$431$$

- The next step from there is

358

leading to

358

73

73

11

431

120

11

300

431

587

475

1062

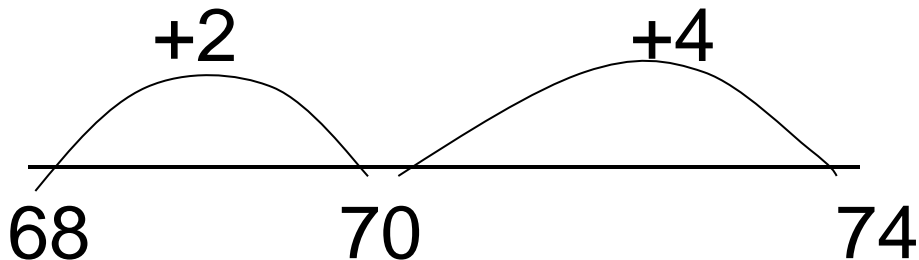
11

Subtraction

- The standard way is
$$\begin{array}{r} 6 \quad \cancel{7}4 \\ \underline{68} - \end{array}$$

This does not help mathematical understanding.
Almost a trick!!

Number line method



Answer 6

- An empty number line can be used to subtract two numbers
- $97 - 15 = 72$
- Mark 97 on the number line

97

Partition/split 15 into 10 and 5.

-5

-10

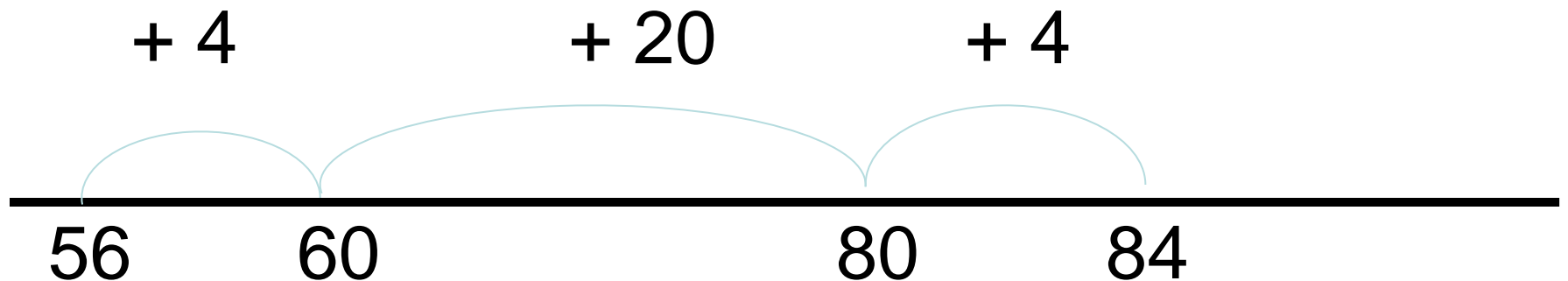
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87

97

- Subtraction questions can also be worked out by using the number line and adding on from the smallest number. Working to the nearest ten number

$$84 - 56 =$$



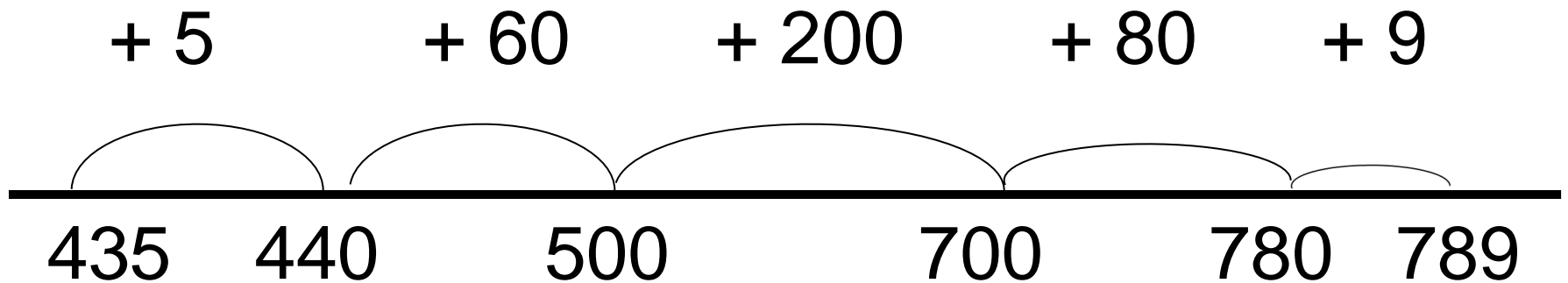
$$4 + 20 + 4 = 28$$

$$84 - 56 = 28$$

- Larger numbers can also be subtracted successfully using the number line method

$$789 - 435 =$$

Mark both numbers on the number line



$$200 + 80 + 60 + 9 + 5 \text{ (the value of the jumps)}$$

$$200 + 140 + 14 = 354$$

- Decomposition is another method used to subtract numbers.
- Each number is partitioned into hundreds, tens and units and set out like this

$$\begin{array}{r} 784 \\ - 435 \end{array}$$

$$\begin{array}{r} 700 \ 80 \ 4 \\ 400 \ 30 \ 5 \end{array}$$

$$\begin{array}{r} \ 70 \ 10 \\ 700 \ ~~80~~ \ 4 \\ 400 \ 30 \ 5 \end{array}$$

We now take 5 away from the 14

$$\begin{array}{r} 700 \ 70 \ 14 \\ 400 \ 30 \ 5 \\ \hline 300 \ 40 \ 9 \end{array}$$

- Then moving on to the standard method

$$754 - 286 =$$

Partition each number

$$700 \quad 50 \quad 4$$

$$200 \quad 80 \quad 6$$

$$754$$

$$- \quad \underline{286}$$

1

$$700 \quad 40 \quad 14$$

$$200 \quad 80 \quad 6$$

$$744$$

$$- \quad \underline{286}$$

exchange one ten

1 1

$$700 \quad 140 \quad 14$$

$$\underline{200} \quad \underline{80} \quad \underline{6}$$

$$\underline{400} \quad \underline{60} \quad \underline{8}$$

$$744$$

$$- \quad \underline{286}$$

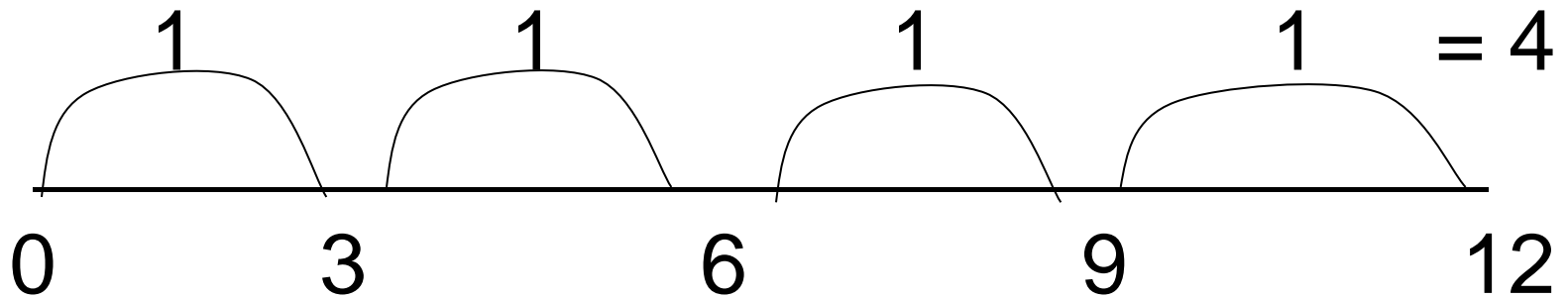
exchange one hundred

$$\underline{486}$$

Division

- Most people don't like division along with fractions for some reason.

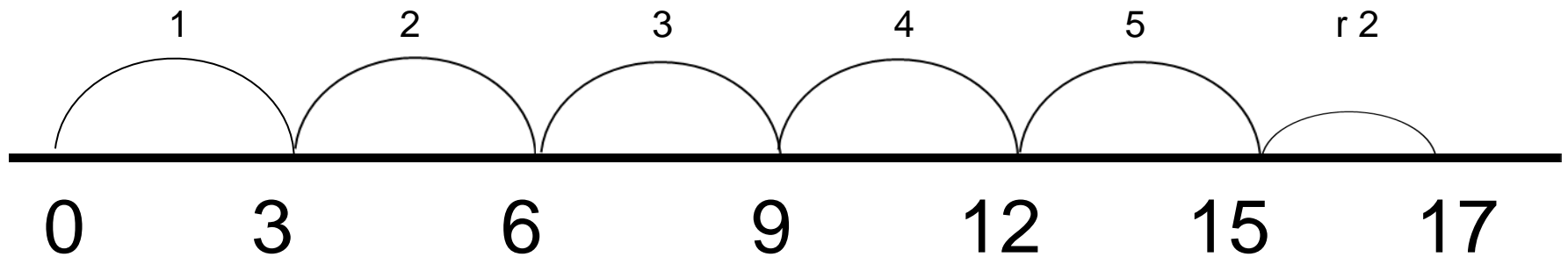
Using the number line method $12 \div 3$



How many 3's in 12

- The number line method illustrates remainders really well.

$$17 \div 3 =$$

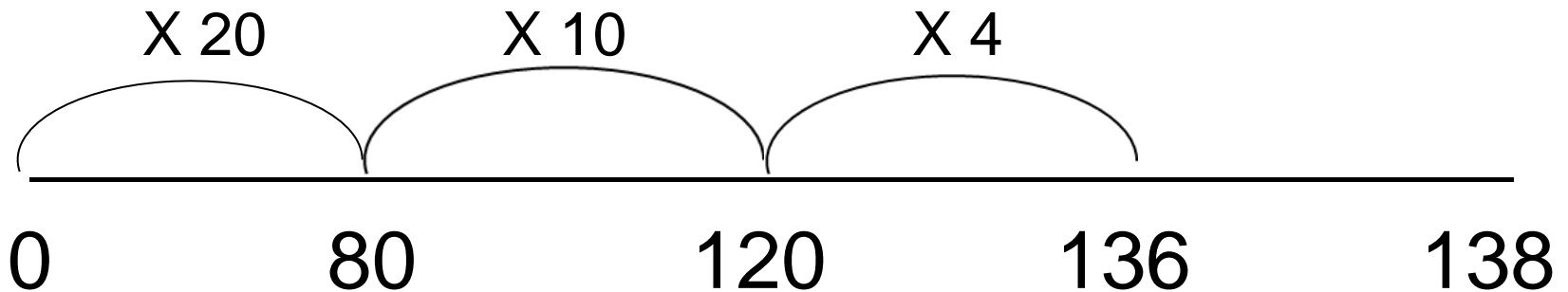


$$17 \div 3 = 5 \text{ r } 2$$

$$138 \div 4$$

There are 138 wheels. Each car has 4 wheels. How many cars are there?

You could jump in 4's. However this would take a long time.



$$138 \div 4 = 34 \text{ r } 2$$

- The method known as chunking is introduced when dividing larger numbers

$$72 \div 5 = \quad \text{or} \quad 5 \overline{) 72}$$

$$\begin{array}{r} 5 \overline{) 72} \\ - 50 \quad (10 \times 5) \\ \hline 22 \\ - 20 \quad (4 \times 5) \\ \hline 2 \end{array}$$

$$72 \div 5 = 14 \text{ r } 2$$

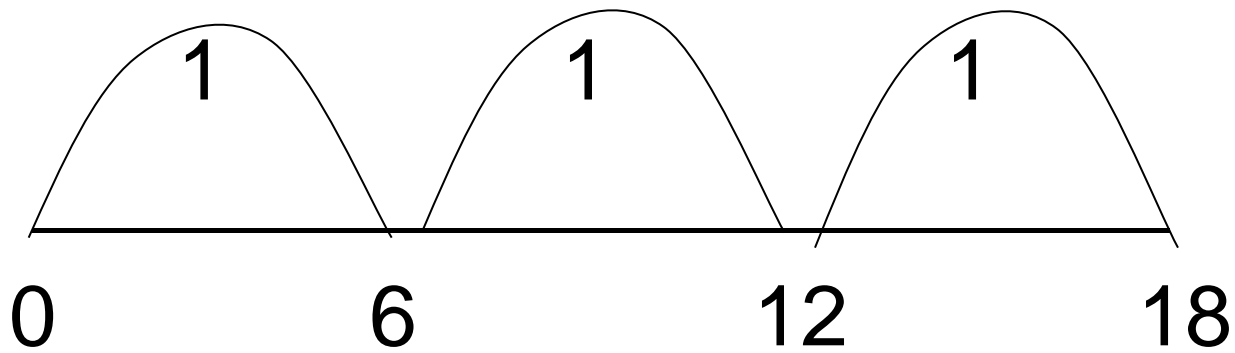
What we want is for children to enjoy and understand consistently what they are doing from Reception to year 5.

Standard methods are fraught with errors. One year a SAT question was $1025 - 336$. most children used the standard way and did not get it right.

Done using a number line counting on it is much easier and simpler.

Multiplication

$$3 \times 6$$



3 jumps of 6

Grid Method 24 x 7

	20	4
7	140	28

$$140 + 28 = 168$$

This is similar to standard method but much easier to check boxes if there is a mistake.

$$72 \times 38$$

X	70	2
30	2100	60
8	560	16

$$= 2160$$

$$= \underline{576}$$

$$\underline{\underline{2736}}$$

Handouts

- Please take one and make use of it.
- There is also a handout of the main slides here demonstrating the methods.

That's it!

- Thank you for your interest and participation this afternoon.
- Hope things are a little clearer and easier to understand.
- Remember that as a whole school we are here to help so if you have queries or concerns please do not hesitate to get in touch.
- Thank you for coming.