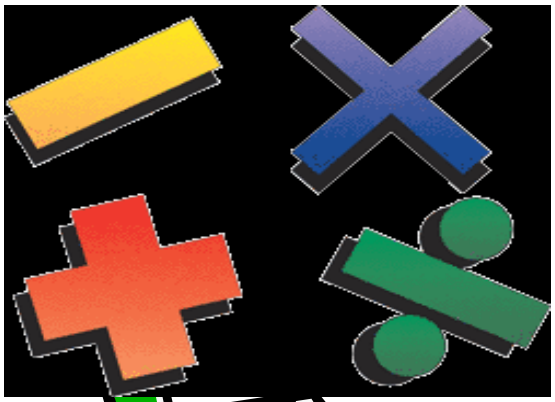
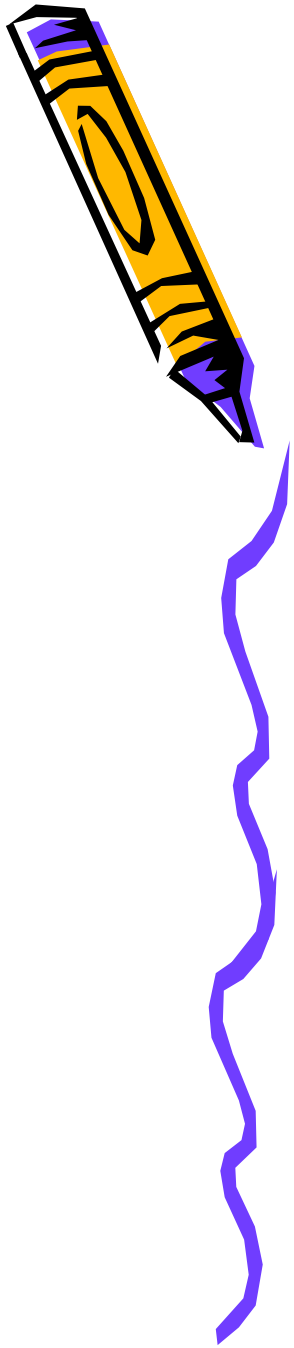
# Maths in Year 3

Miss Jodie
Miss Armitt
Miss Raley



# Place Value



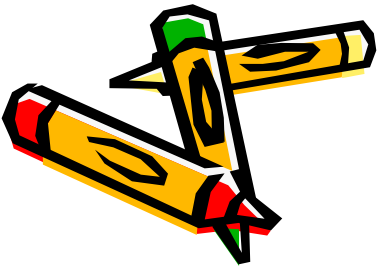
## What is place value?

The position of the digit tells us the value of the number e.g. 341

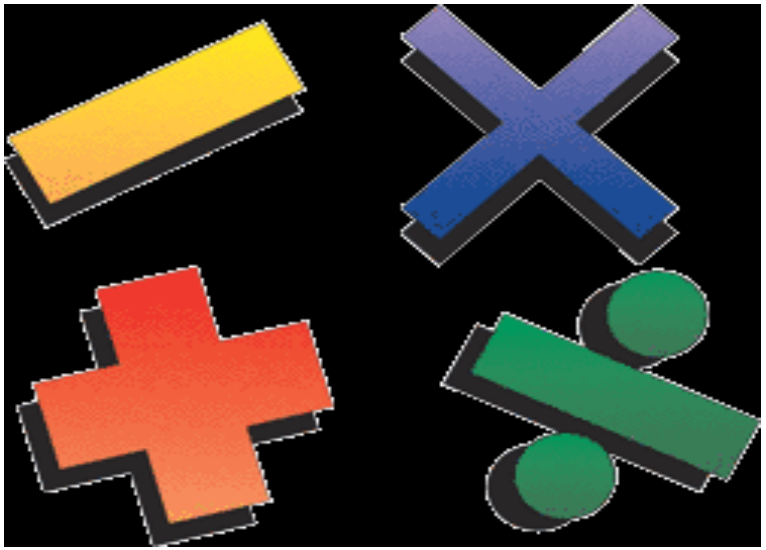
| Hundreds | Tens | Units |
|---|---|---|
| 300 | 40 | 1 |

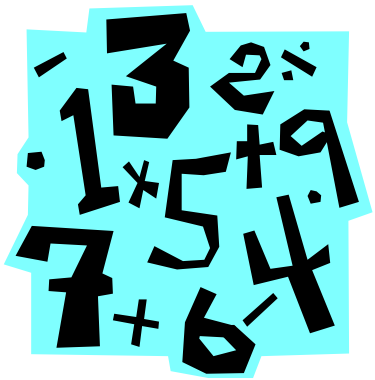
## Partitioning

457 = 400 + 50 + 7

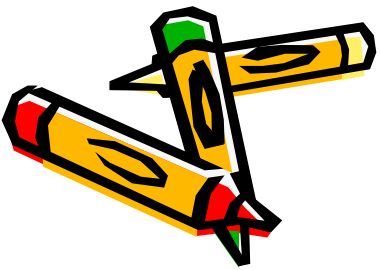


# Addition Using a Number Line





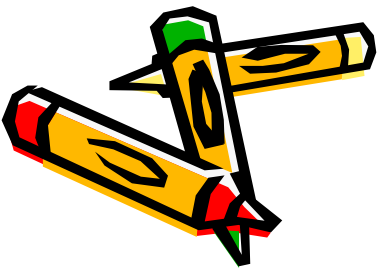
# Using number lines in Addition and Subtraction



# Adding numbers using the number line.

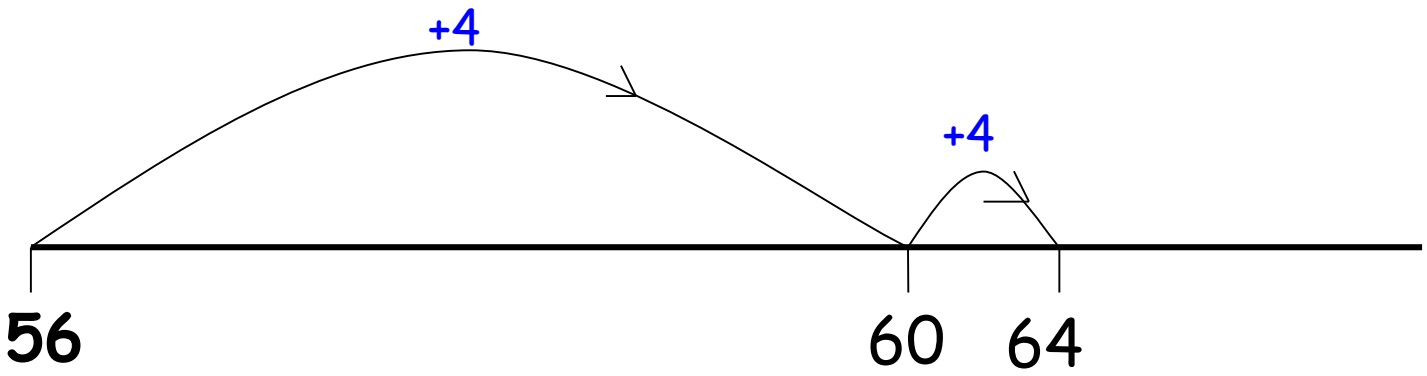
$56 + 8 = \square$

So how do we do this using the number line?



56 + 8 =

Use the counting up method!!




We use our number bonds to 10 to jump to the next ten and then add to remaining units.

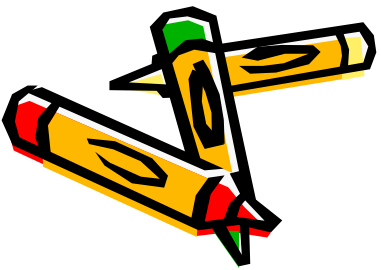
What number do we end on?

So….

56 + 8 = 64

# Adding numbers using the number line.

$25 + 47 = \square$



So how do we do this using the number line?

# We use the strategy called:

## Counting Up

*You need to think about:*

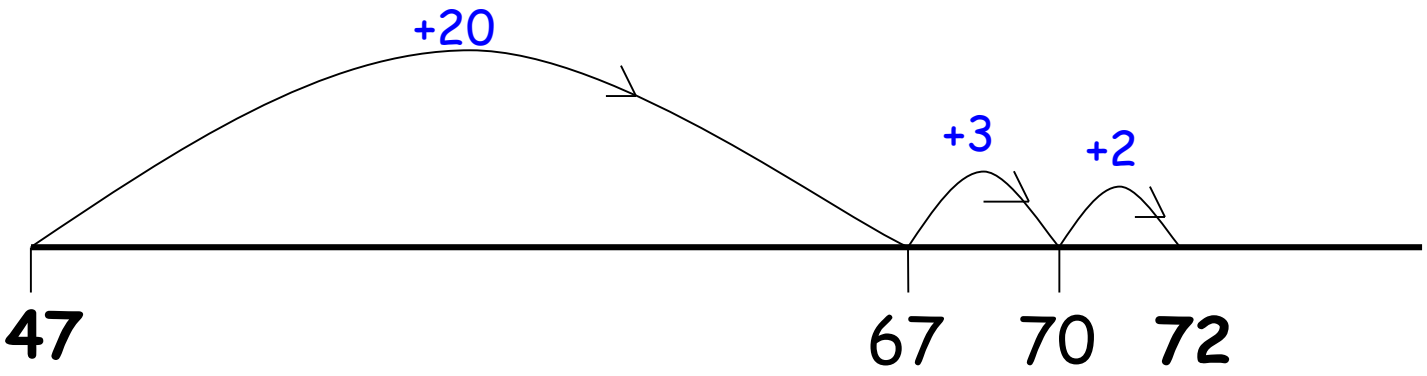
*What number shall I start with on my number line?*

*What number do we want to count up by?*

*Are there any number bonds that can help me?*

25 + 47 =

Use the counting up method!!




So we start at the biggest number…47

And **count up** 25 places

What number do we end on???

So….

25 + 47 = 72

# Can I use the **counting up** strategy for Subtraction too?

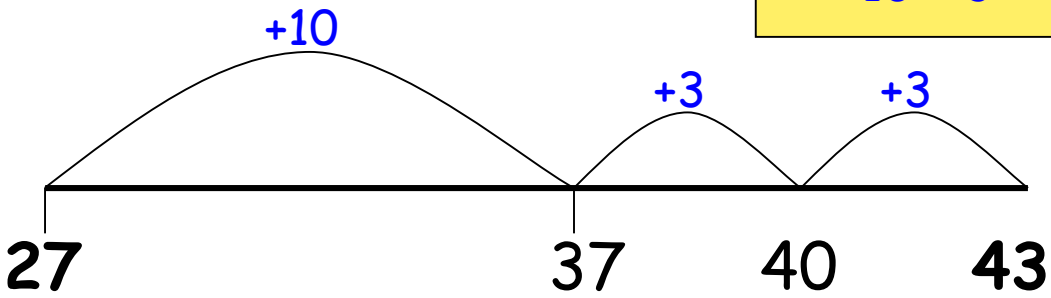
YES

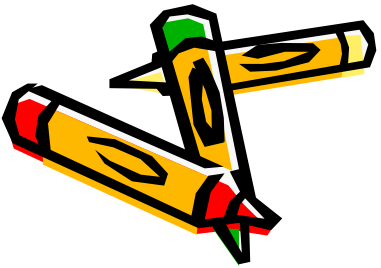
Have a look at this question!

43 – 27 = 16

What number shall I start from on my number line?
What number do I want to get to?
What number shall count on by?
Can any number bond make counting on easier for me?

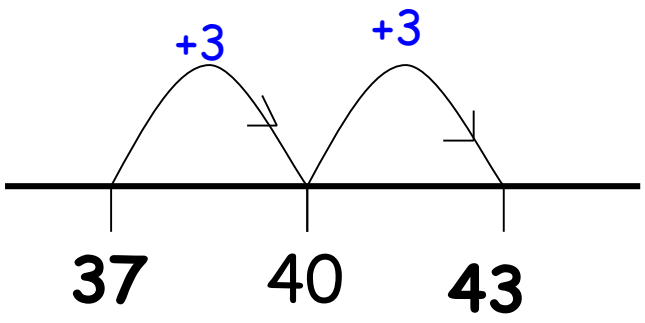
10 + 3 + 3 = 16



# How can we show this using the number line:

43 – 37

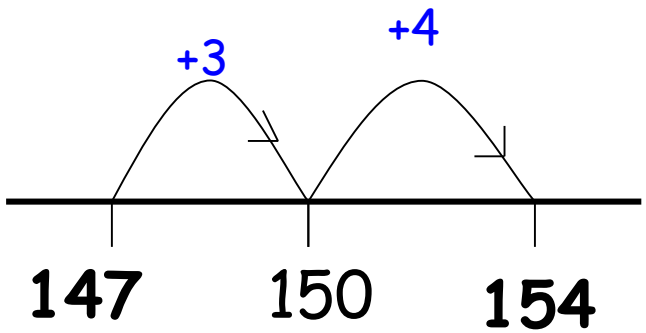



3 + 3 = 6

So,

43 – 37 = **6**

154 – 147



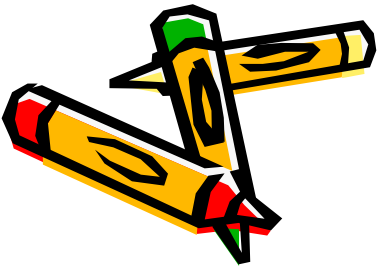

3 + 4 = 7

So,

154 – 147 = **7**

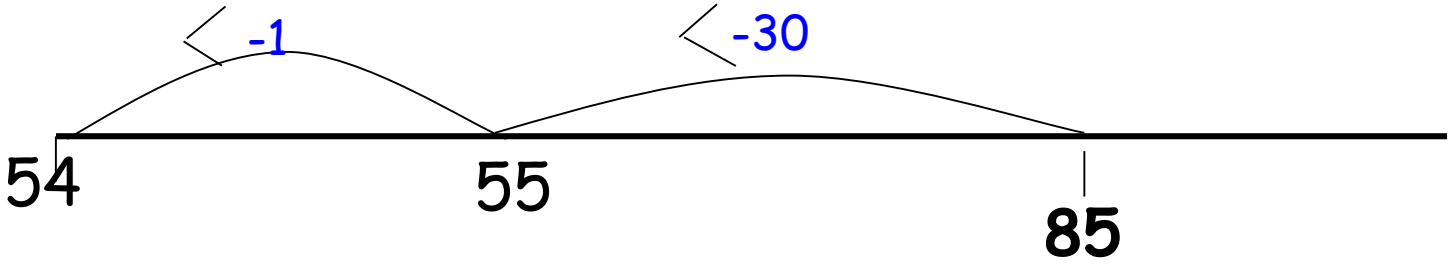
# Subtracting by counting back

- Use this strategy when there is a larger difference between the numbers.



85 - 31 =

Use the counting back method!!




So we start at the biggest number…85

And **count back** 31 places

What number do we end on???

So….

85 - 31 = 54

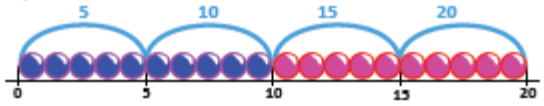
Hamilton
supporting teachers

# Year 3

Multiplication and division are inverse operations. Right from the start children should be taught these as related operations. There are four number sentences (two using x and two using ÷ which can be written to express the relationship between 5 and 9 and 45. It is key to a good understanding of division that [] x 5 = 45 and 45 ÷ 5 = [] are seen as ways of expressing the same question.

## x Multiplication

**Counting in steps ('Clever' counting)**
Count in 2s, 5s and 10s.

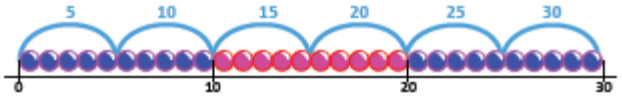



Begin to count in 3s.

'Clever' counting is an excellent basis for multiplication and division.

**Doubling and halving**
Begin to know doubles of multiples of 5 to 100, *e.g. double 35 is 70.*

**Grouping**
Use arrays to find answers to multiplication and relate to 'clever' counting, *e.g. 3 x 4 as three lots of four things and 6 x 5 as six steps in the 5s count as well as six lots of five.*




Understand that 5 x 3 can be worked out as three 5s or five 3s.

**Use number facts**
Know doubles to double 20

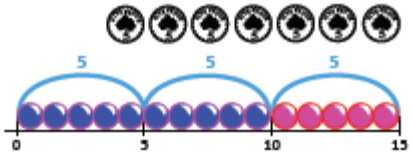
Double 7 = 14

Division, grouping, is the inverse of multiplication.

Start learning 2x, 5x, 10x tables, relating these to 'Clever counting' in 2s, 5s, and 10s, *e.g. 5 x 10 = 50, and 10, 20, 30, 40, 50 is five steps in the tens count.*

## ÷ Division

**Counting in steps ('Clever' counting)**
Count in 2s, 5s and 10s




**Doubling and halving**
Find half of numbers up to 40, including realising that half of an odd number gives a remainder of 1 or an answer containing a ½.
Begin to know half of multiples of 10 to 100, *e.g. half of 70 is 35.*

**Grouping**
Relate division to multiplication by using arrays of towers of cubes to find anwers to division, *e.g. how many towers of five cubes can I make from 20 cubes as ☐ x 5 = 20 and also as 20 ÷ 5 = ?*

Relate division to 'clever' counting and hence to multiplication, e.g. *how many 5s do I count to get to 20?*

**Sharing**
Begin to find half or a quarter of a quantity using sharing, e.g. ¼ of 16 cubes by sorting the subes into four piles.
Find ¼, ½, ¾ of small quantities.

**Using number facts**
Know halves of even numbers to 24.
Know 2x, 5x and 10x division facts.
Begin to know 3x division facts.

half of 20 is...

| 20 | |
|---|---|
| ? | ? |

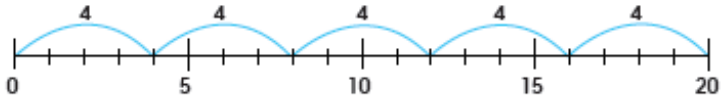
Hamilton
supporting teachers

# Year 3

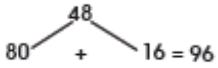
Multiplication and division are inverse operations. Right from the start children should be taught these as related operations. There are four number sentences (two using x and two using ÷ which can be written to express the relationship between 5 and 9 and 45. It is key to a good understanding of division that [] x 5 = 45 and 45 ÷ 5 = [] are seen as ways of expressing the same question.

## x Multiplication

**Counting in steps ('Clever' counting)**
Count in 2s, 3s, 4s, 5s, 8s and 10s, e.g. colour the multiples on a 1-100 grid or use hops along a landmarked line.




**Doubling and halving**
Find doubles to double 50 using partitioning.
Use doubling as a strategy in multiplying by 2,
e.g. 18 x 2 is double 18 (36).




**Grouping**
Recognise that multiplication is commutative, e.g. 4 x 8 = 8 x 4.
Multiply multiples of 10 by single-digit numbers, e.g. 30 x 8 = 240.
Multiply friendly 2-digit numbers by single-digit numbers, e.g. 13 x 4.

**Using number facts**
Know doubles to 20 and doubles of multiples of 5 to 100, e.g. double 45 is 90.
Know doubles of multiples of 5 to 100, e.g. double 85 is 170.
Know 2x, 3x, 4x, 5x, 8x, 10x tables facts.

Doubling and halving form the basis of mental x & ÷ strategies.

Number facts must be memorised and used on a daily basis.

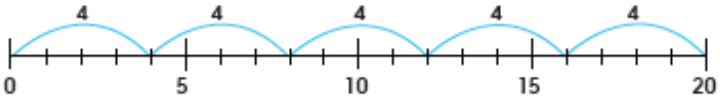
## x Written Multiplication

Build on partitioning to develop grid multiplication.

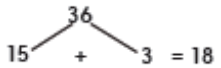
| x | 20 | 3 | = |
|---|---|---|---|
| 4 | 80 | 12 | 92 |

## ÷ Division

**Counting in steps ('Clever' counting)**
Count in 2s, 3s, 4s, 5s, 9s and 10s by colouring numbers on the 1-100 grid or using a landmarked line.




**Doubling and halving**
Find half of even numbers to 100 using partitioning.
Use halving as a strategy in dividing by 2,
e.g. 36 ÷ 2 is half of 36.




**Grouping**
Recognise that division is not commutative, e.g. 16 ÷ 8 does not equal 8 ÷ 16.
Relate division to multiplications 'with holes in', e.g. ☐ x 5 = 30 is the same calculation as 30 ÷ 5 = ? thus we can count in in 5s to find the answer.
Divide multiples of 10 by single-digit numbers, e.g. 240 ÷ 8 = 30.

**Using number facts**
Know halves of even numbers to 40.

| 28 | |
|---|---|
| ? | ? |

Know halves of multiples of 10 to 200, e.g. half of 170 is 85.
Know 2x, 3x, 4x, 5x, 8x, 10x division facts.
Use divison facts to find unit and simple non-unit fractions of amounts within the times tables, e.g. ¼ of 48 is 3 x (48 ÷ 4).

# How you can help at home ....

Talk
Playing games
Consolidating learning ... eg counting on
Practical tasks... cooking, sewing, DIY
Construction toys
Time
Money
Measures – estimating
Reinforcement of number bonds, tables ... learning by 'heart'
Being positive


# Some Suggestions of Maths in Every Day Life

• Money

Under your supervision, let your child "pay" for items in cash at the store. Discuss the transaction and how much things cost. Ask, "Do you have enough money? How much more do you need?" Always use real money.

Cooking

• Make simple recipes at home using the appropriate measuring tools.

Time

• Practice telling time daily on an analogue clock (with hands). Routinely ask your child to give you the current time, and then ask, "How many minutes before the next hour?"

Measure

• Use measuring tapes, rulers, and metric sticks to measure spaces or items.

- Use scales to weigh objects after predicting their weight. Compare the weights of different items.

• Use fractions to help divide the family meals or desserts into equal servings.