Dear parents/carers,

For every maths question I encourage the children to draw a picture if they are unsure with their answers and sometimes to ensure they have the right answer (proving it).

These methods are ones we use in school, so to ensure consistency for the SATS, as mentioned at parents evening, I have attached the ways in which we do them.

I hope this is of help. The children will become more fluent if they continue to use these methods and when they do become quicker will then be able to do this mentally. I've also attached additional ideas linking to the arithmetic and reasoning papers to support the children.

If you have any questions, feel free to contact me.

Kind regards,

Mrs Duffy

Addition

9+3 for example

Children can draw counters to represent their answers

For larger calculations we also use **column method.** Units are now called ones but I say both so the children understand.

T U/O

3 3+

2 3

---

5 6

As you can see from the calculation, we do not need to exchange (or borrow from tens or the left column)

Below is an example of exchange.

T U/0

3 4 +

5 6

---

9 0

1

(The ten has been carried and needs to be added to the 5+3)

TU TU

34 + 13 = **No regrouping is required so we can add the tens and ones mentally.**

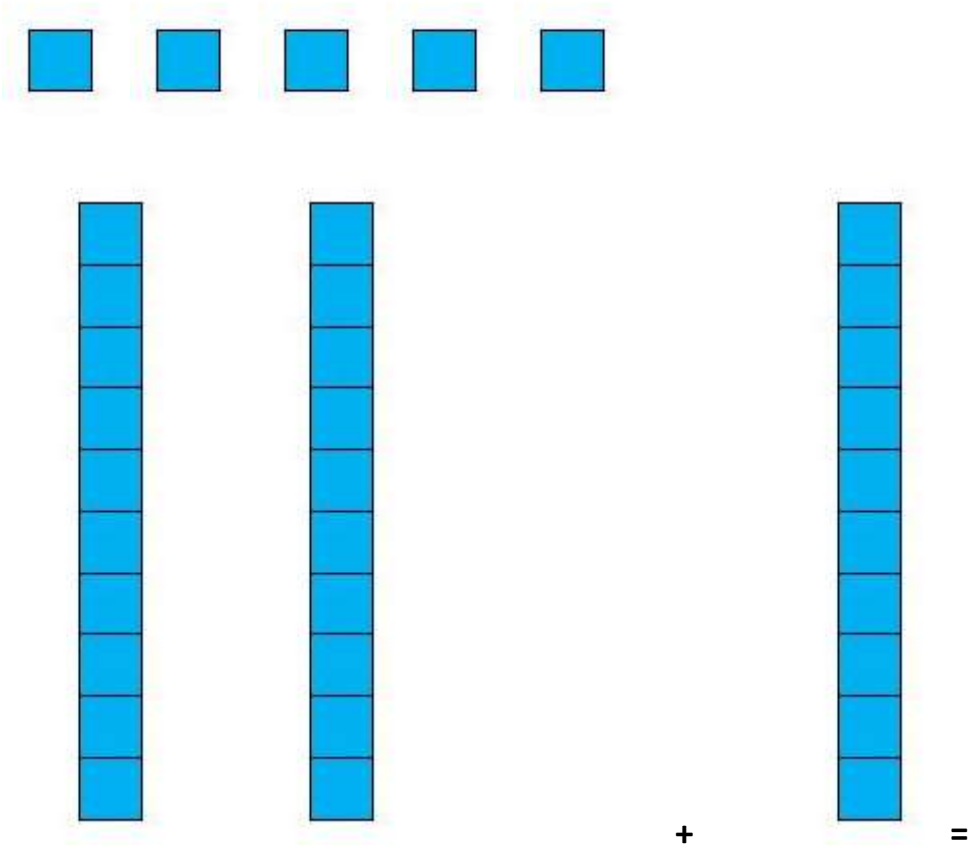
3tens +1tens = 4

4ones +3ones = 7

Answer = 47

We have also used Dienes to add and subtract when no exchange is required. Whatever method your child is comfortable with, they can use whichever method.

25 + 10 =

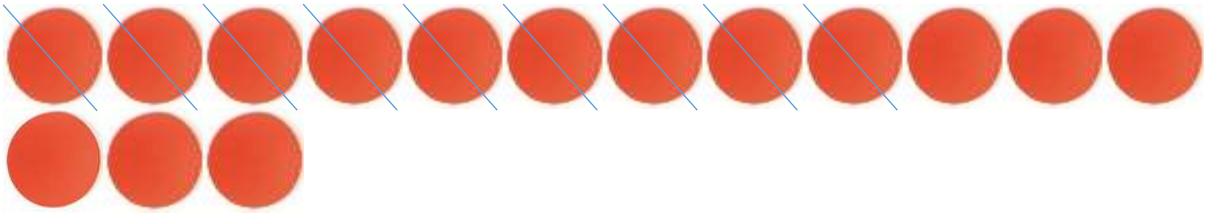


Children can now find it easier to add the total together.

Subtraction

15-10 for example

Some children mentally do this, others may use counter method.



For larger calculations we also use **column method.** Units are now called ones but I say both so the children understand.

T U/O

1 5 -

1 0

---

0 5

(As you can see from the calculation, we do not need to exchange (or borrow from tens or the left column)

Below is an example of exchange.

T U/O

67 15 –

2 8

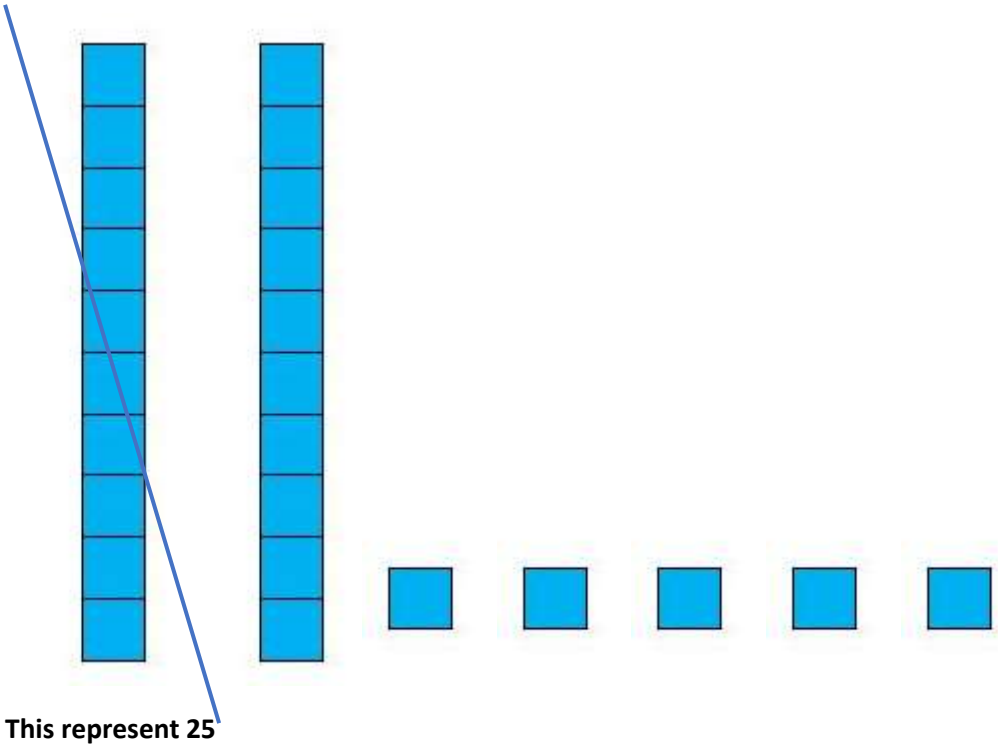
---

4 7

(As you can see, the ten has been exchanged and given to the ones so you now have enough to complete the calculation. The 7 still needs to be changed to a 6 because we have taken a ten.)

We have also used Dienes to add and subtract when no exchange is required. Whatever method your child is comfortable with, they can use whichever method.

25-10 =



This represent 25

To complete the calculation, children can count the remaining amount.

25-10 = 15

T U T U

35 – 21= No regrouping is required so we can subtract the tens and ones mentally.

3 tens - 2 tens = 1

5 ones -1 ones = 4

Answer =14

Multiplication

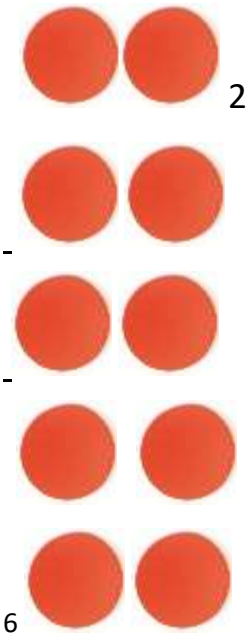
Some children can do this mentally, other will use methods below.

Timetable practise is key. Children can use this to recognise the inverse 4x5=20 or 20/5 =4)

Arrays

The array represents the multiplication. Children can draw this to help them find the answer.

For example 6x2 =



To find 6x2 children can add the counters together.

6

2  (or this way)

They may use repeated addition

2+2+2+2+2+2 (adding 2 six times)

6+6 (adding 6 two times)

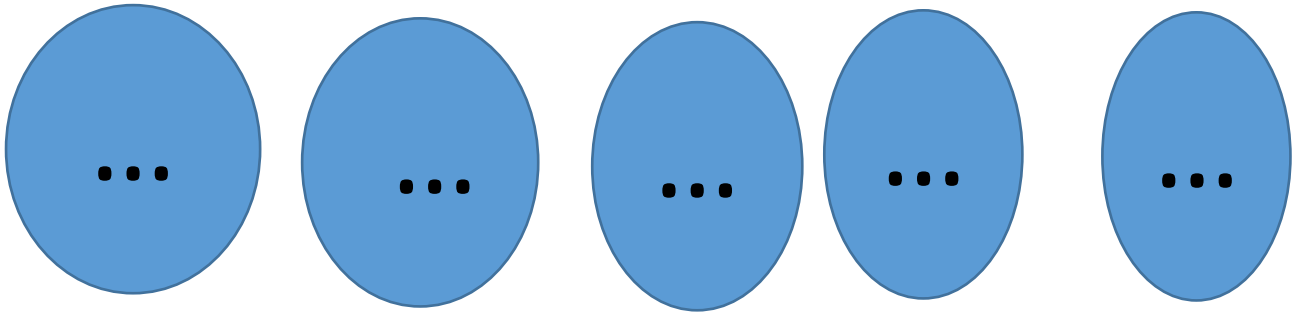
Division

12 ÷ **3= 4**

(For this calculation we use sharing and grouping, we need to share 12 between 3 groups equally, we always draw hoops)

(Starting from1 share the twelve equally until you have reached the amount.)

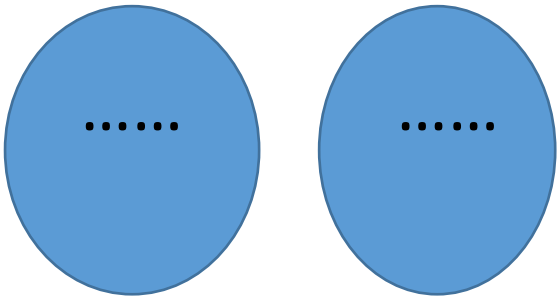
15 ÷ 5 (we know we need to share between 5 people)



Finding **fractions of amounts** works the same

For example

Find ½ of 12 – some children again know this mentally, others know that in ½ the bottom number gives us the total parts, so we share 12 between 2 hoops.

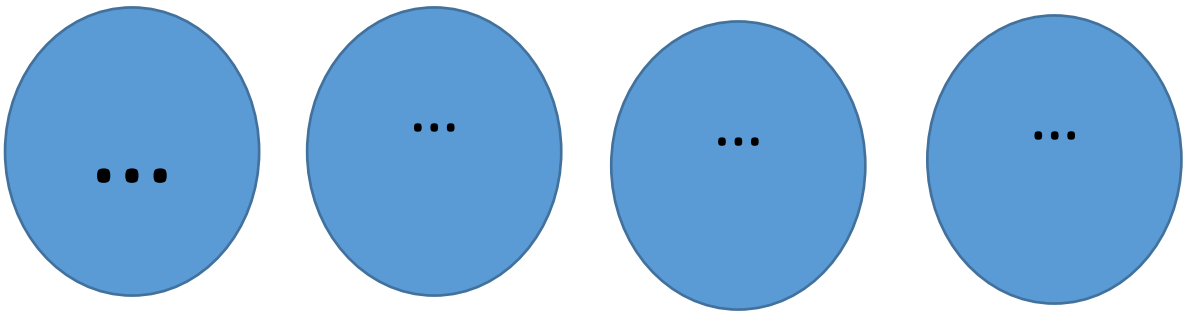


½ of 12= 6

Find the value of 1 hoop because we are finding 1 out of 2 or ½ = 6

Find ¼ of 12

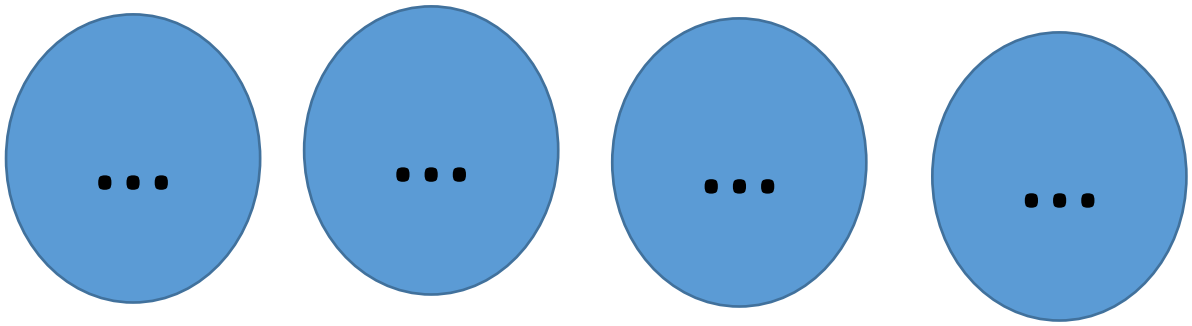
Find ¼ of 12 – some children again know this mentally, others know that in 1/4 the bottom number gives us the total parts, so we share 12 between 4 hoops.



Find the value of 1 hoop, because we are finding 1 out of 4 or 1/4 = 3

Find 3/4 of 12

Find 3/4 of 12 – some children again know this mentally, others know that in 3/4 the bottom number gives us the total parts, so we share 12 between 4 hoops.



3 (1/4) + 3 (2/4) + 3 (3/4)

This time, we need to find the value of 3 out of 4 hoops or ¾, so children must add the hoops together (this one they find tricky).

3+3+3 = 9

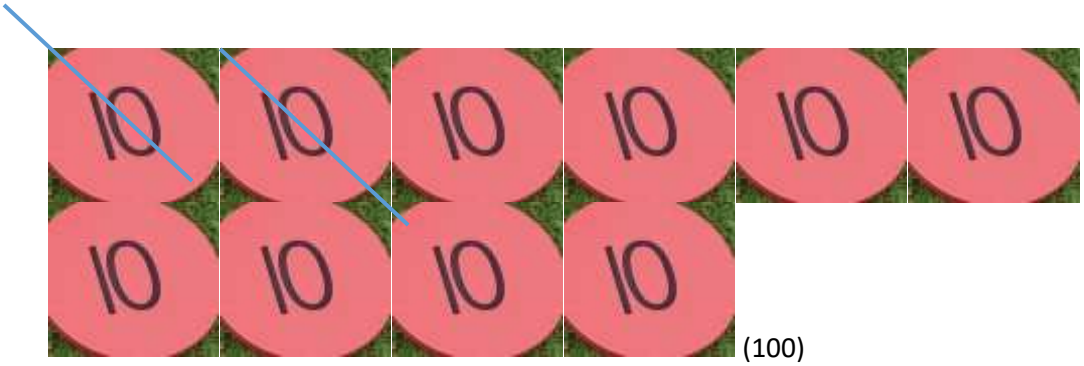
¾ of 12 = 9

Missing numbers

_____= 10+5 (children need to solve the last part of the calculation to get the answer.

_____= 20-3

20+ _____ = 100



(100)

If we draw 100 with our tens counters and cross off 20 then the amount left will give us the answer. Knowing 10x tables is also key.

34+13 = 100 - _____

First step –

Column method

T U/O

3 4 +

1 3

---

4 7

Second step

How many more do you need to get to 50? (3)

Then count in tens to 100. (50)

50+3= 53

Counting on

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

Explore the 100 square and let children find the patterns. 4 forwards in tens 14, 14 forwards in tens 24, backwards etc.

Odd and even numbers

Odd (a number that can't be shared equally)

1, 3, 5, 7, 9,

Even (a number that can't be shared equally)

2,4,6,8, 10,

Therefore if the number ends in 1, 3,5,7,9 it is odd and 2, 4, 6, 8, 10, it is even.

66 – Even

44 – Even

33 – Even

What happens when we add even numbers?

2+2 = 4 always even

What happens when we add odd numbers?

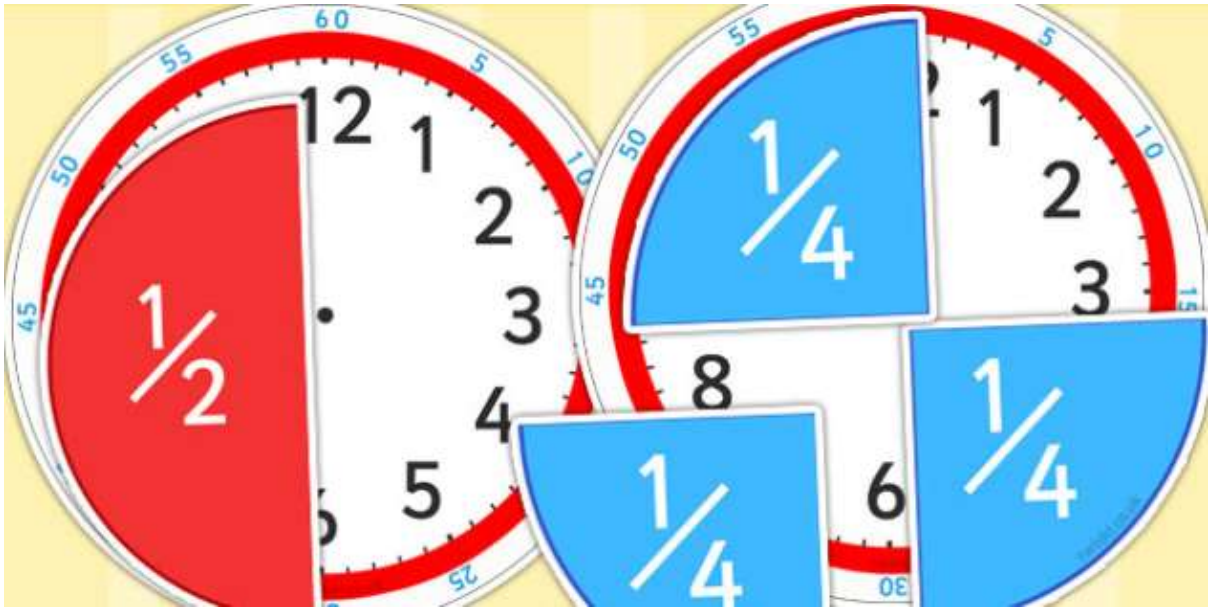
3+3 = 6 always even

Time

Expected – quarter two, quarter past,

Greater depth – 5 minute intervals, quarter two, quarter past,

(This links nicely with fractions)



Statistics

Tally charts

~~////~~ **= 5 (counting in 5s helps)**

Money –

Simple counting games and understanding the value of money.

Making amounts in different ways (for example 50p)

50p

20p 20p 10p

10p 10p 10p 10p 10p

10p 10p 20p 10p

5p 5p 5p 5p 5p 5p 5p 5p 5p 5p