Fleet Infant School

Fluency in Maths

November 2024

Maths Curriculum Meeting for Parents

What is fluency?

National Curriculum aim:

Children to become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

What is fluency?

Fluency plays an important role in the National Curriculum

A child can quickly use their maths skills to solve a maths problem in the most **EFFICIENT** way

Efficiency

They are **ACCURATE** when using their mental maths skills to solve calculations and problems

Accuracy

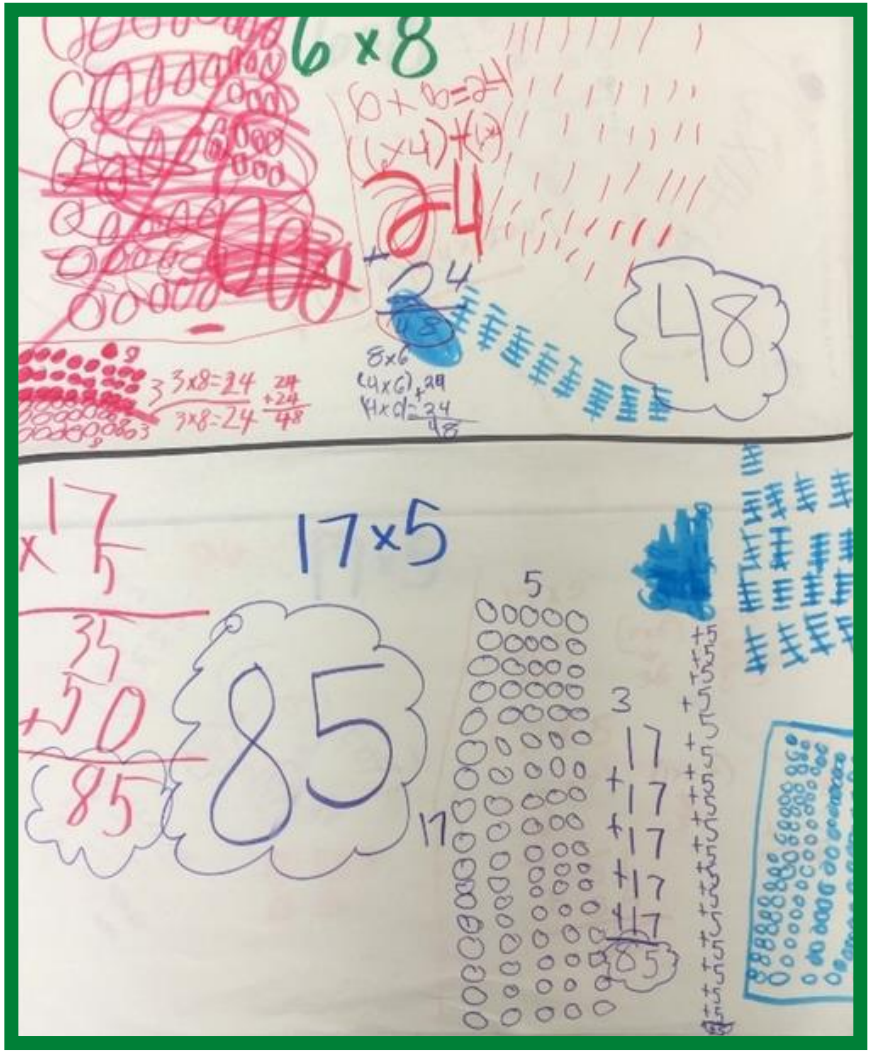
They can apply their maths skills to a variety of problems in different contexts and approach the problem in a variety of ways

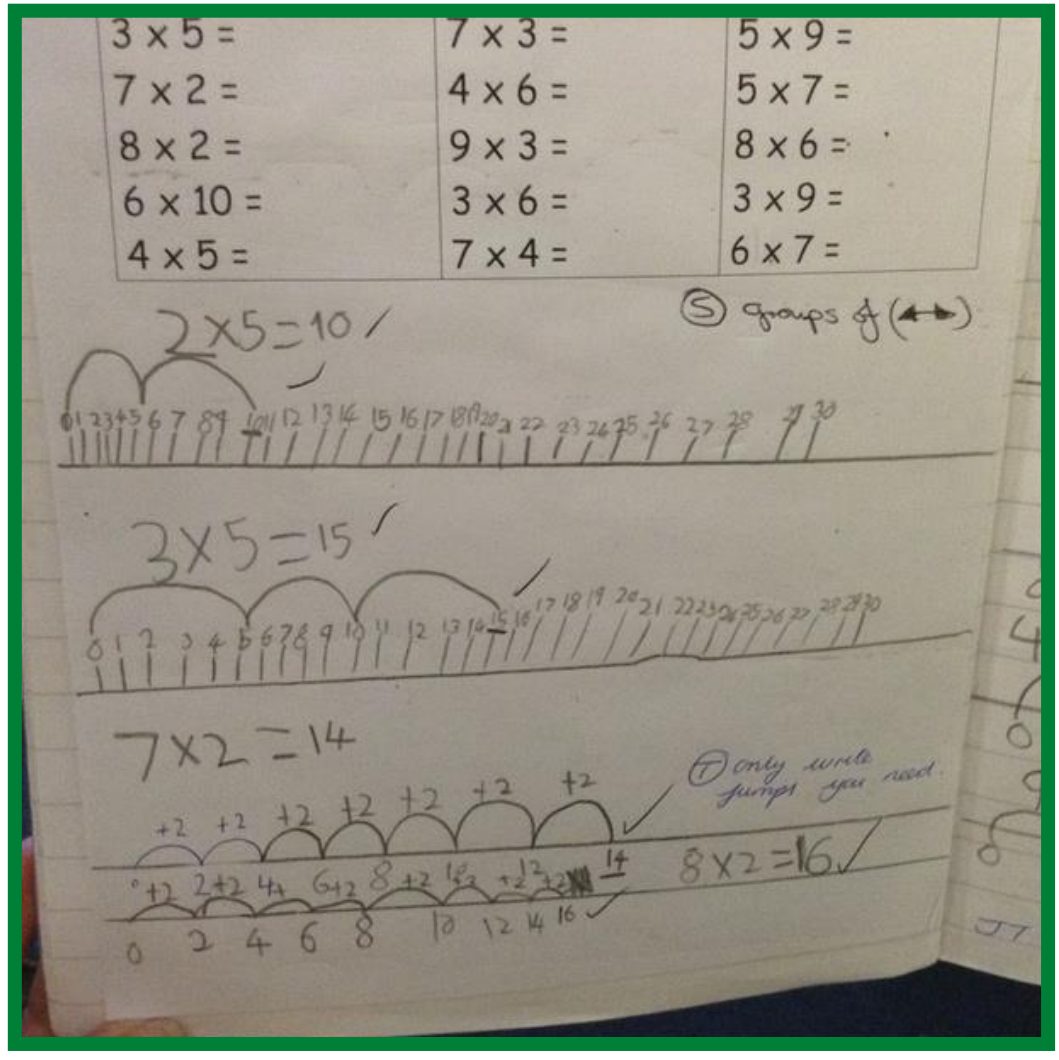
Flexibility

Efficiency examples

3+4 = 7	30+40 = 70	“I know 3 add 4 is 7 so 30 add 40 is 70”
3+6+7 = 16	“I found a number pair to 10 and I know 10 and 6 is 16”	
23+37 = 60	“I know 20 and 30 is 50 and 7 and 3 is 10 so it makes 60”	
9x5 = 45	“I know 10 x 5 is 50 and i subtracted 5 so the answer is 45”	

Efficiency


6 x 8
24
48
17 x 5
85

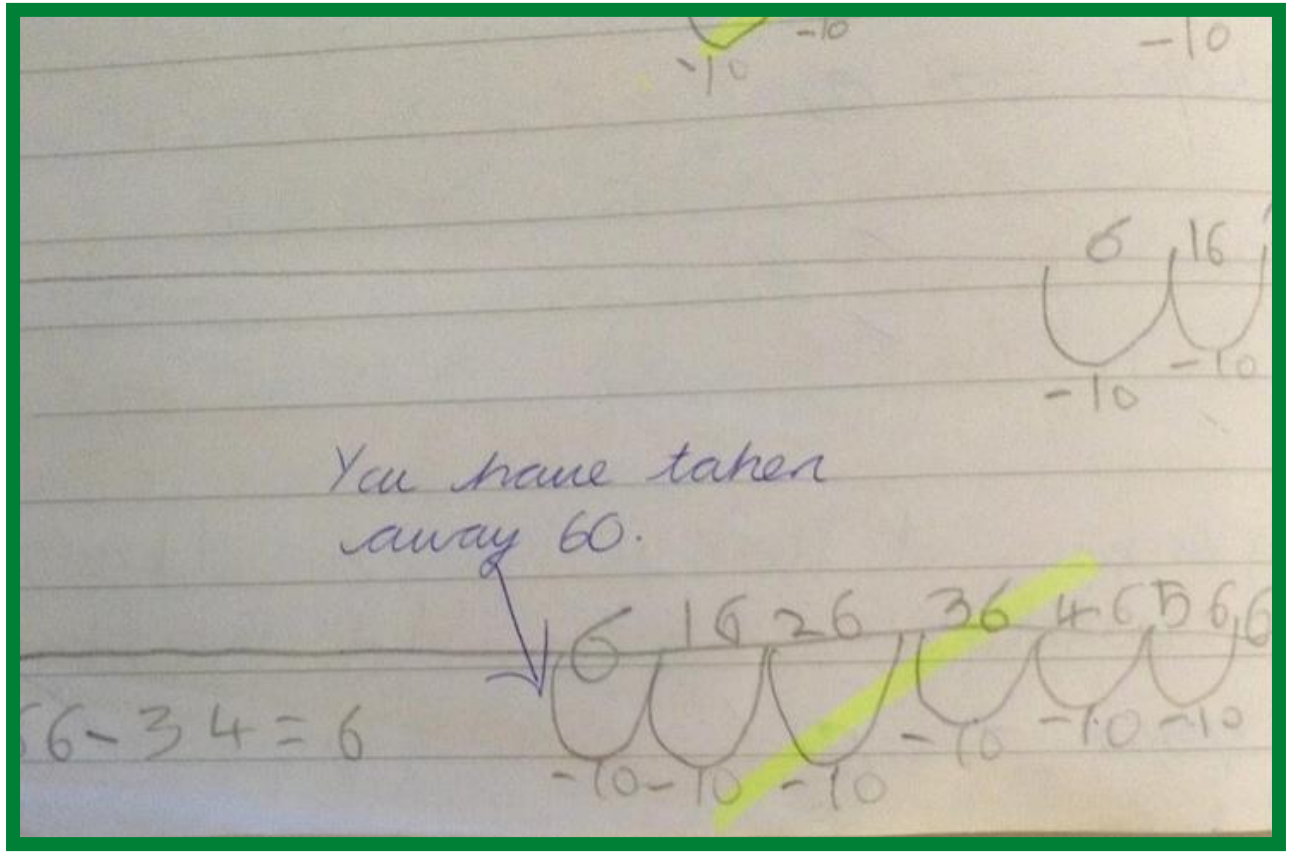

3 x 5 =
7 x 2 =
8 x 2 =
6 x 10 =
4 x 5 =
7 x 3 =
4 x 6 =
9 x 3 =
3 x 6 =
7 x 4 =
5 x 9 =
5 x 7 =
8 x 6 =
3 x 9 =
6 x 7 =
2x5=10
3x5=15
7x2=14
8x2=16

Accuracy examples

32+24 = 59	“I know this answer can’t be right because 2 add 4 is 6. There should be 6 ones in my answer.
40-16= 25	“I know this can’’t be right because 10 take away 6 equals 4 not 5”
20 ÷ 5 = 3	“I know this can’t be right because 5 times 3 is 15”

Accuracy

With taught written methods



Flexibility

I know the maths fact 10x2 =20

From this the child can then solve problems such as:

I HAVE 10 SWEETS AND MY FRIEND GIVES ME ANOTHER 10. HOW MANY DO I HAVE ALTOGETHER?	THERE ARE 20 CHILDREN IN THE CLASS AND HALF OF THEM ARE BOYS. HOW MANY ARE BOYS?	THERE ARE 20 CAKES AND YOU SHARE THEM BETWEEN YOUR TWO FRIENDS. HOW MANY DO THEY HAVE EACH?
I NEED 10G OF BAKING SODA FOR ONE BIRTHDAY CAKE. HOW MUCH WILL I NEED TO DOUBLE THE RECIPE?	I HAVE 10P IN MY POCKET AND I FOUND ANOTHER 10P. HOW MUCH MONEY DO I HAVE NOW?	THERE ARE 200 STICKERS IN MY BOOK AND I USE HALF OF THEM. HOW MANY DO I HAVE NOW?

Flexibility

Is the ability to use have more than one approach to solve a problem

Q. There are 30 sparklers and I put them into boxes of 3.
How many boxes are needed?

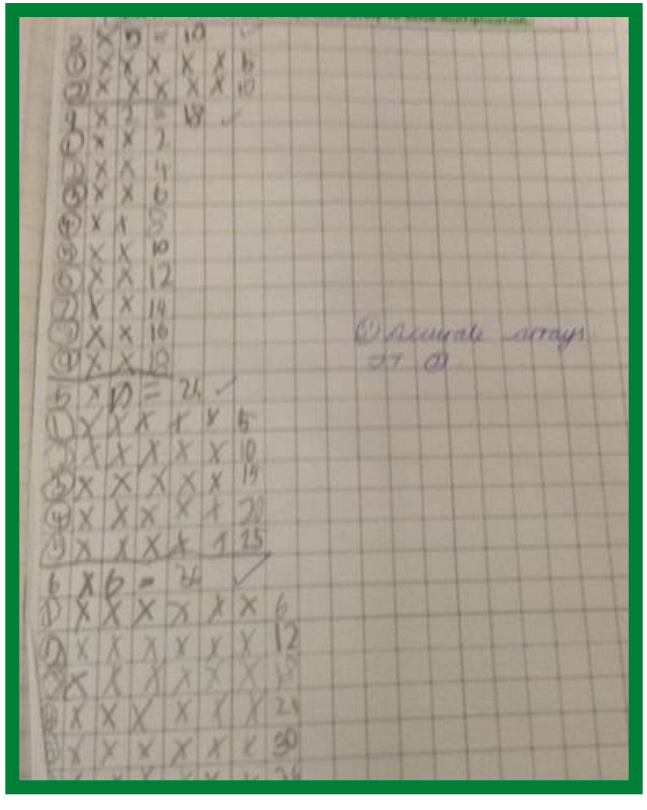
A child could:

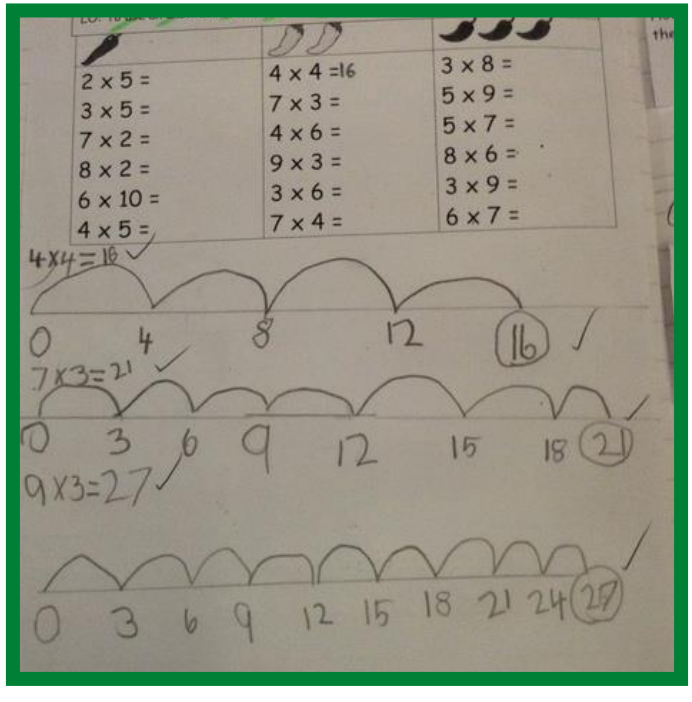
Use their mental maths skills – 10 x 3 = 30 so the answer must be 10

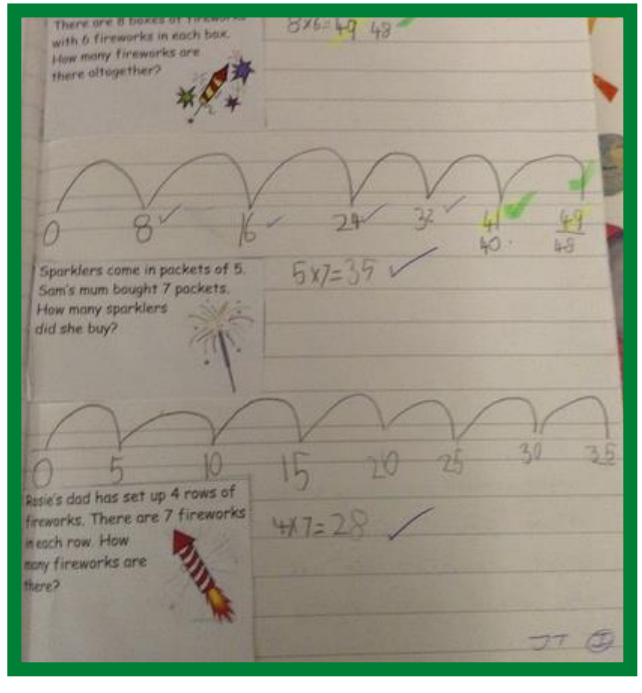
Draw a diagram grouping 30 dots into 3s.

Draw an unstructured number line counting in steps of 3 to 30 and count the jumps.

Flexibility

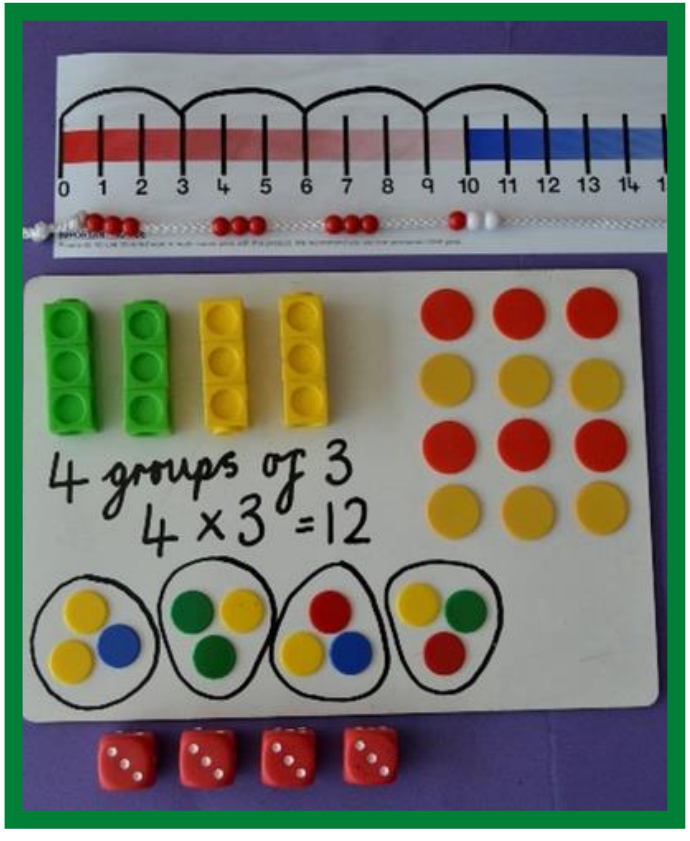




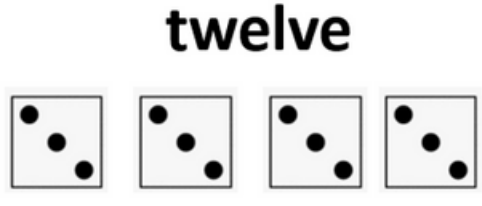


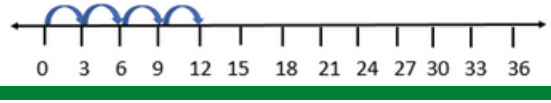
How do we develop fluency?

Use a variety of physical resources and pictorial representations to show maths facts in different ways.



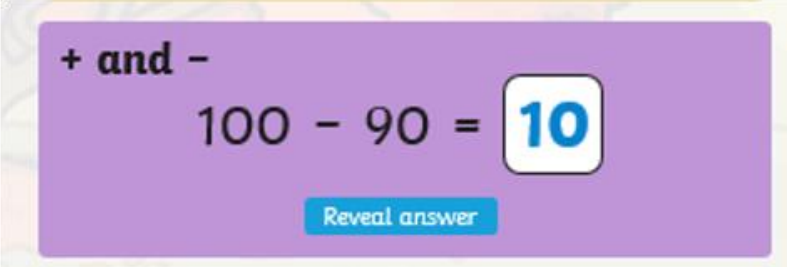
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



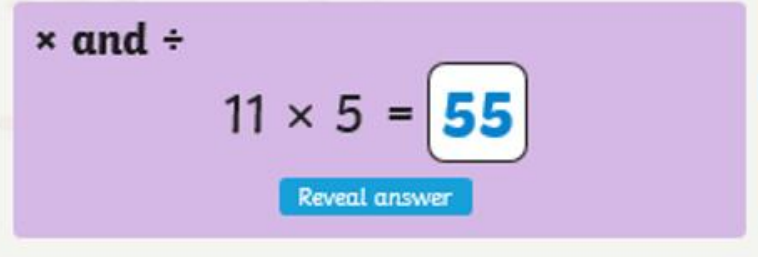


How do we develop fluency?

Using “maths talk”



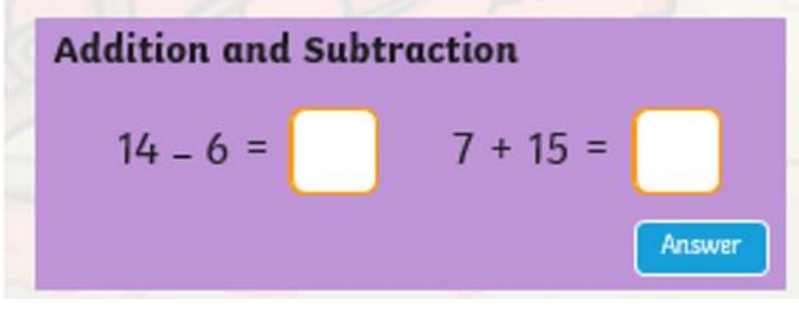
I used my number bonds to 10. I know 10 – 9 = 1 so 100 take away 90 is 10.



- I know that if a number is in the 11 times table the digit is repeated (up to 9x11)
- I know that 10 x 5 is 50 and I added another 5.
- I know 12 x 5 is 60 and I subtracted a 5.

Discussion around strategies

Who has the most efficient strategy?



- I counted back 6 on my fingers.
- I took away 4 to get to 10 and then I used my number bonds to 10 to take away 2 more.
- I drew a number line and counted back 6.
- I drew 14 dots and crossed out 6.

Some of these strategies will work with smaller numbers but won't be useful when numbers get larger.

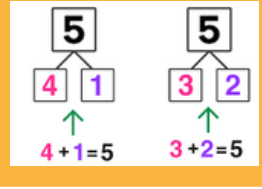
Fluency & mental maths facts

As you can see, for a child to be fluent when problem solving they need to have a strong understanding and recall of mental maths facts

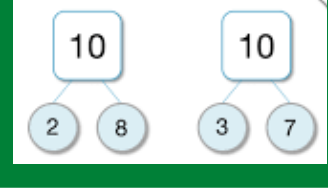
Mental maths facts for Year 1

KNOW ONE MORE AND ONE LESS OF NUMBERS WITHIN 20 INITIALLY AND THEN MOVING ONTO 100.

KNOW NUMBER BONDS THAT MAKE 5.



KNOW NUMBER BONDS THAT MAKE 10.



KNOW SOME ADDITION AND SUBTRACTION FACTS TO OTHER NUMBERS E.G. 5+3=8

KNOW NUMBER BONDS THAT MAKE 20.

KNOW DOUBLES OF NUMBERS TO 20.

KNOW HALVES OF NUMBERS TO 20.

KNOW 10 MORE AND 10 LESS THAN ANY NUMBER TO 100.

COUNTING IN PATTERNS OF 2,5 OR 10

Mental maths facts for Year 2

RECALL ADDITION AND SUBTRACTION FACTS TO 20 AN DERIVE RELATED FACTS TO 100	ADD AND SUBTRACT TWO-DIGIT NUMBERS AND ONES	ADD AND SUBTRACT TWO-DIGIT NUMBERS AND TENS	ADD AND SUBTRACT TWO TWO-DIGIT NUMBERS
ADD THREE ONE-DIGIT NUMBERS	KNOW THAT ADDITION AND SUBTRACT ARE INVERSE	KNOW MULTIPLICATION AND DIVISION FACTS FOR THE 5, 2, AND 10 TIMES TABLE AND DERIVE RELATED FACTS	KNOW THAT X2 IS THE SAME AS DOUBLING AND ÷2 IS THE SAME AS HALVING

How can we support children to develop fluency?

HELP CHILDREN TO UNDERSTAND THE MATHEMATICS BEHIND THE FACTS.

LEARN A FEW FACTS AT A TIME.

ENSURE ANY GAMES OR ACTIVITIES ARE SIMPLE SO THEY CAN FOCUS ON THE MATHS.

FIND THE MATHS IN REAL LIFE.

LITTLE AND OFTEN!

HELP THEM TO SPOT THE CONNECTIONS BETWEEN THE CONCEPTS

Thank You

website
www.fleet.hants.sch.uk

email
info@fleet.hants.sch.uk