Chapelford Village Primary School

Learn · Achieve · Respect

Maths

Calculation Policy

Place Value

2024

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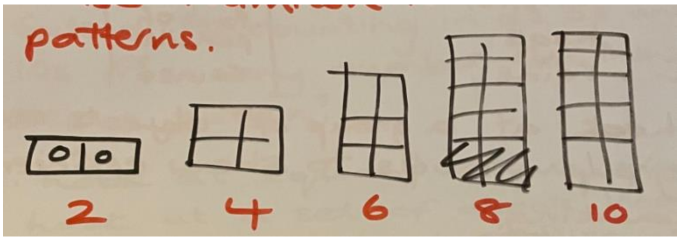
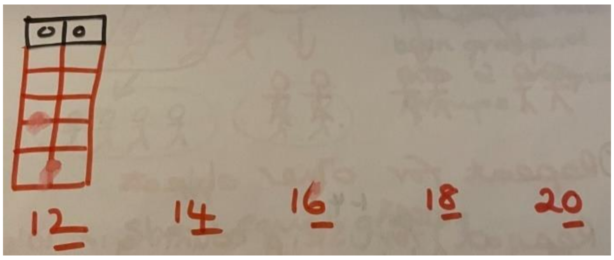
Year One:

- I can skip count in 2s

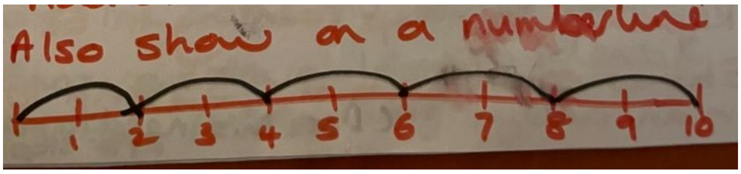
Use Numicon to look at patterns.



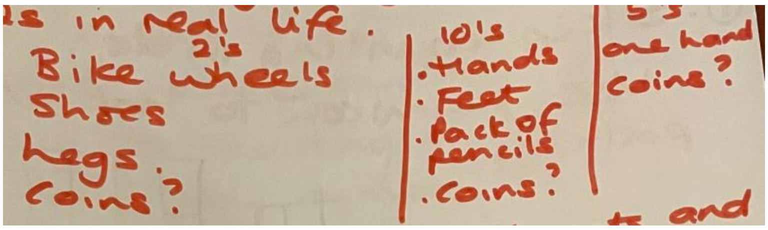
Show by adding the ten tile, the pattern continues.



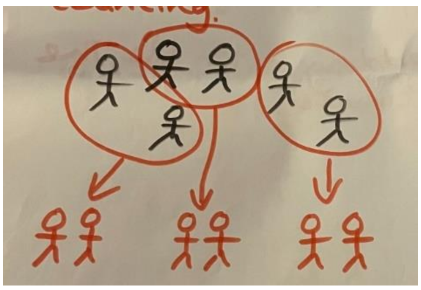
- I can skip count in 2s on a numberline



- I can count objects in 2s using real life contexts



- I can group objects in 2s to show efficient counting



- I can show counting in 2s using arrays

- I can skip count in 10s

See previous methods

- I can skip count in 10s on a number line

See previous methods

- I can count objects in 10s using real life contexts

See previous methods

- I can group objects into 10s to show efficient counting

See previous methods

- I can show counting in 10s using arrays

See previous methods

- I can skip count in 5s

See previous methods

- I can skip count in 5s on a number line

See previous methods

- I can count objects in 5s using real life contexts

See previous methods

- I can group objects into 5s to show efficient counting

See previous methods

- I can show counting in 5s using arrays

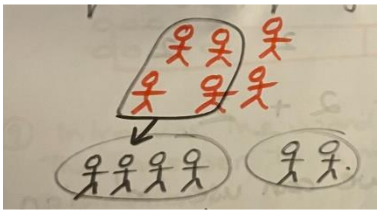
See previous methods

Year Two:

- I can skip count in 2s, 5s and 10s
- I can skip count in 2s, 5s and 10s on a number line
- I can count objects in 2s, 5s and 10s using real life contexts
- I can show counting in 2s, 5s and 10s using arrays

- I understand what an equal group is
- I understand what an unequal group is

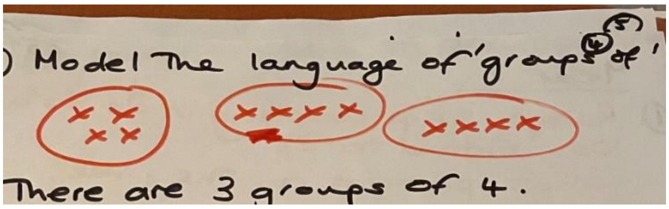
Model how to group objects and discuss equal and unequal groups.



The people have been grouped into 2 unequal groups.

The groups are equal because there are the same number of people in it. Encourage children to identify equal and unequal groups.

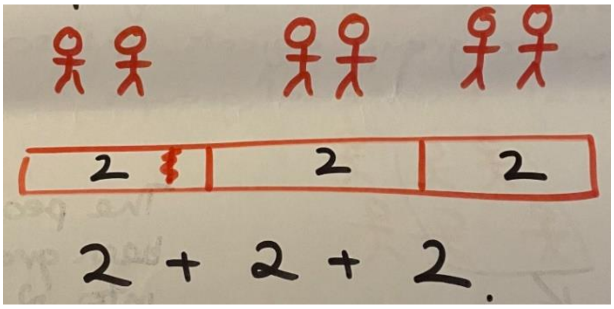
I can use 'groups of'



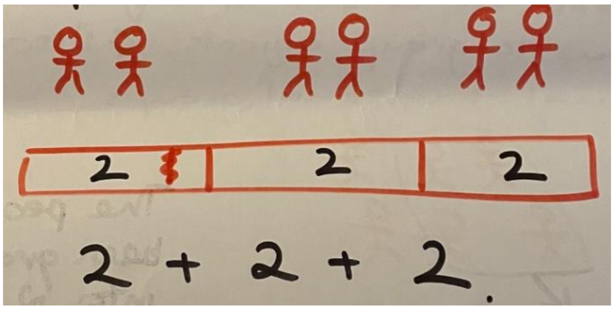
There are 3 groups of 4.

I can use repeated addition

1. *Use Numicon*
2. *Using arrays*
3. *Bar model*
4. *Writing as a calculation → 4 + 4 + 4*



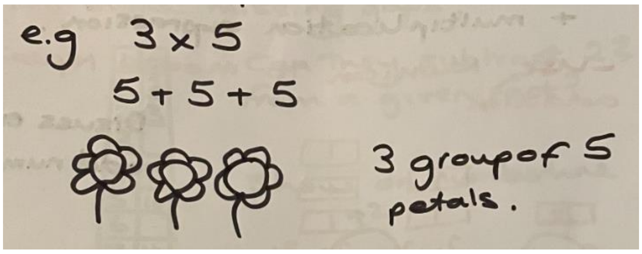
I can use the 'x' sign to show equal groups



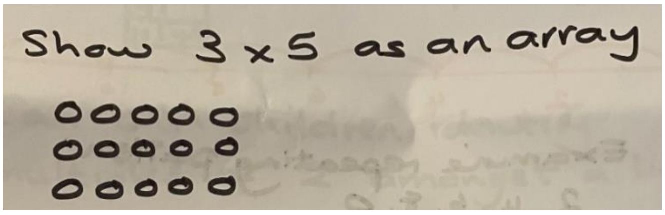
3 x 2

3 groups of 2

I can describe a picture using a multiplication fact

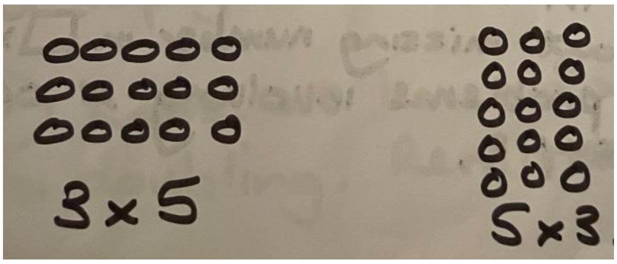


I can show a multiplication fact using an array



I can use 'product' when describing a multiplication fact

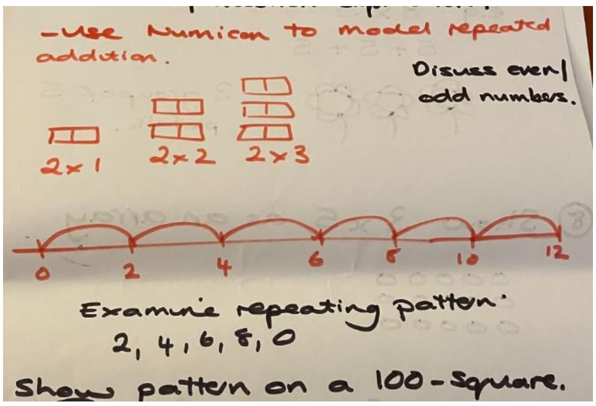
I understand that multiplication is commutative

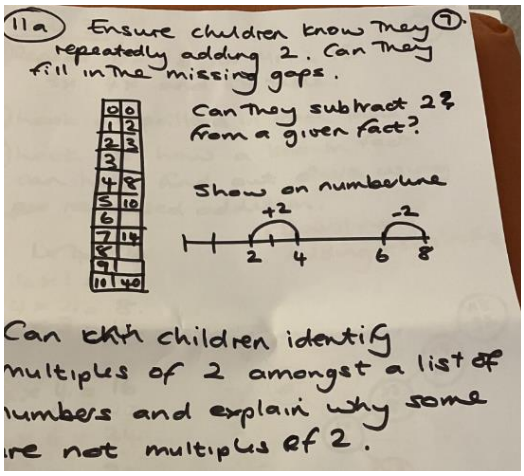


Discuss:
It gives you the same product but the image is different.

I can explore the patterns and relationships within the 2 times table

1. ***Objects***
2. ***Number lines***
3. ***Bar models***
4. ***Multiplication arrays***





(11b) Look again at ~~commu~~ how multiplication can be written in any order. How can this help you work out facts?

- I know the link between doubling and multiplying by 2

- I can explore the patterns and relationships within the 10 times tables

  Use previous method

- I can explore the patterns and relationships within the 5 times tables

  Use previous method

- I know the relationship between the 10 and 5 times table

  Are all the 5s in the 10 x table? Why?

- I solve missing number questions

  e.g. → ___ x 5 = 10

- I can solve problems involving multiplying equal groups

<u>Year Three:</u>

- I understand what an equal group is
- I understand what an unequal group is
- I can use 'groups of'
- I can use repeated addition
- I can use the 'x' sign to show equal groups
- I can describe a picture using a multiplication fact
- I can show a multiplication fact using an array
- I can use 'product' when describing a multiplication fact
- I understand that multiplication is commutative
- I can explore the patterns and relationships within the 2 times table
- I can explore the patterns and relationships within the 10 times tables
- I can explore the patterns and relationships within the 5 times tables
- I know the relationship between the 10 and 5 times table
- I can explore the patterns and relationships within the 3 times tables
  - ***Objects***
  - ***Number lines***
  - ***Bar models***
  - ***Multiplication arrays***

- I can explore the patterns and relationships within the 6 times tables

  Same method as previous for x 2

I know the relationship between the 3 and 6 times table

I can explore the patterns and relationships within the 4 times tables

Same method as previous for x 2

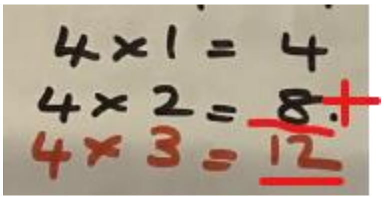
I can explore the patterns and relationships within the 8 times tables

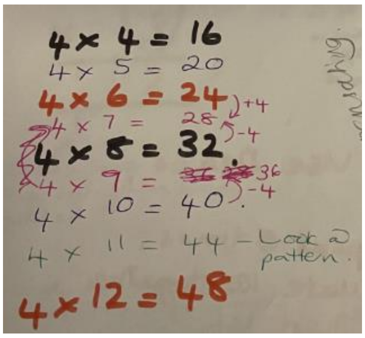
Same method as previous for x 2

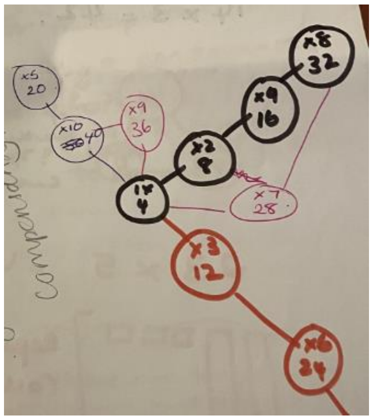
I know the relationship between the 4 and 8 times table

I can use known facts to find other facts

Doubling
Adding
Subtracting







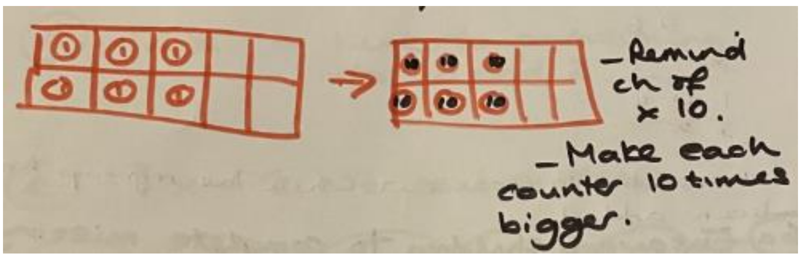
I know the link between doubling and multiplying by 2

I can use doubling to show the link between the 2, 4 and 8 times tables

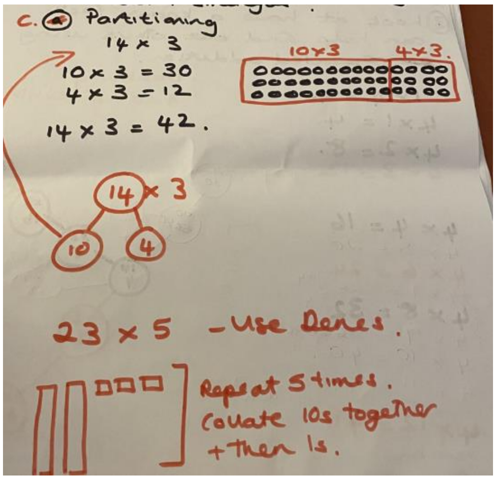
I can use times table to deduce facts that are unknown using mental strategies

- ***If I know 12 x 4, then I also know 13 x 4***
  12 x 4 = 48 so add 4 = 52

- ***If I know 3 x 2, then I also know 30 x 2***



- ***Partitioning***



I can use the formal written method of multiplication with 2 and 1 digit numbers without crossing the boundary

$1\underline{3} \times \underline{2} =$

	1	3		
×		2		
	2	6		

1 → Underline the ones digits
2 → Line them up
3 → Multiply the ones column
2 x 3 = 6 ones
4 → Multiply the tens column
2 x 1 = 2 tens

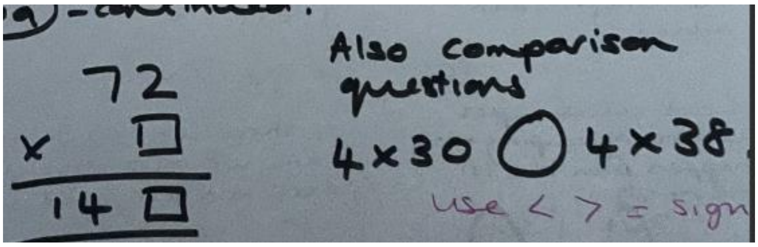
I can use the formal written method of multiplication with 2 and 1 digit numbers when crossing the boundary

$2\underline{4} \times \underline{3} =$

	2	4		
×		3		
	7	2		
	1			

Look at examples where regrouping may happen from tens to hundreds.

1 → Underline the ones digits
2 → Line them up
3 → Multiply the ones column
3 x 4 = 12 ones
What is 12 made up of? 1 ten and 2 ones so we must carry the 1 into the tens column
4 → Multiply the tens column
3 x 2 = 6 tens *add on our extra 1 ten to get 7 tens*



- I apply my knowledge of multiplication to a range of problems

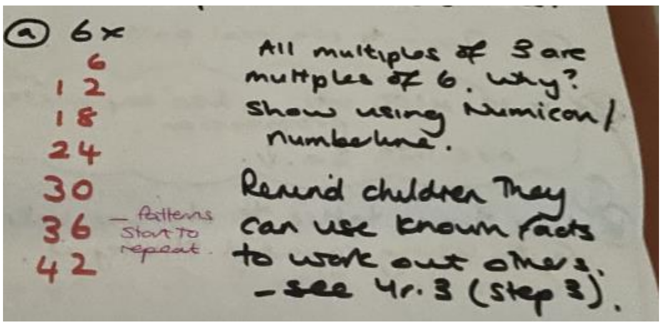
Include contextual problems, eg:

The height of a box is 36cm. If I stack 6 on top of each other, how tall will the stack be?
Children may need to draw diagrams to support.

Year Four:

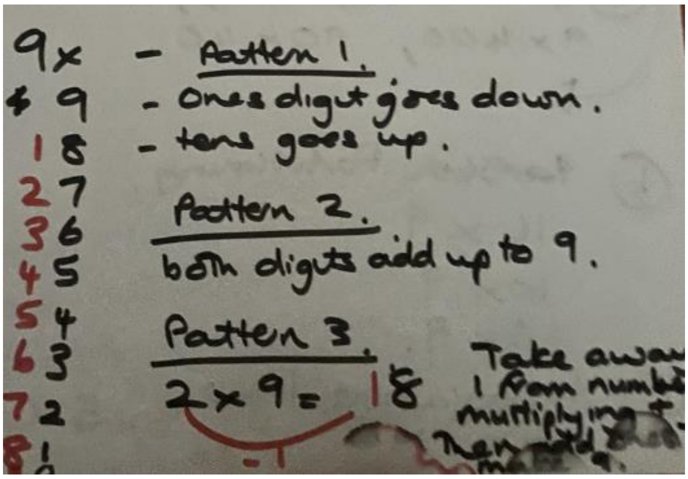
- I can explore the patterns and relationships within the 3 times tables
- I can explore the patterns and relationships within the 6 times tables
- I know the relationship between the 3 and 6 times table
- I can explore the patterns and relationships within the 4 times tables
- I can explore the patterns and relationships within the 8 times tables
- I know the relationship between the 4 and 8 times table
- I can understand the effect of multiplying by 0
- I can understand the effect of multiplying by 1
- can explore the patterns and relationships within the 6 times tables

Use methods from Year 2 x2 as well as…



I can explore the patterns and relationships within the 9 times tables

Use methods from Year 2 x2 as well as…



I can explore the patterns and relationships within the 11 times tables

Use methods from Year 2 x2 as well as…

The digits in the tens and ones are equal → 11 x 3 = 33

I can explore the patterns and relationships within the 12 times tables

Use methods from Year 2 x2 as well as…

Link to partitioning into 10 and 2

E.g. → 12 x 6 = 72
10 x 6 = 60
2 x 6 = 12

I can explore the patterns and relationships within the 7 times tables

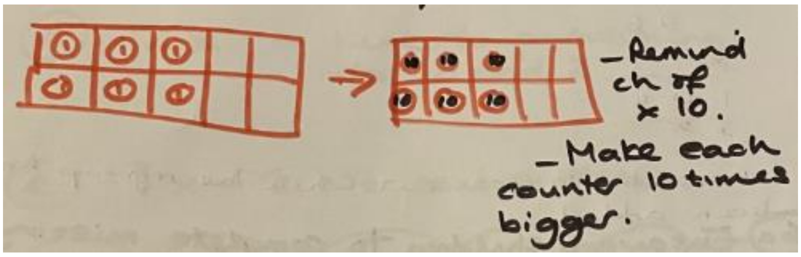
Use methods from Year 2 x2 as well as…

There aren't any real patterns

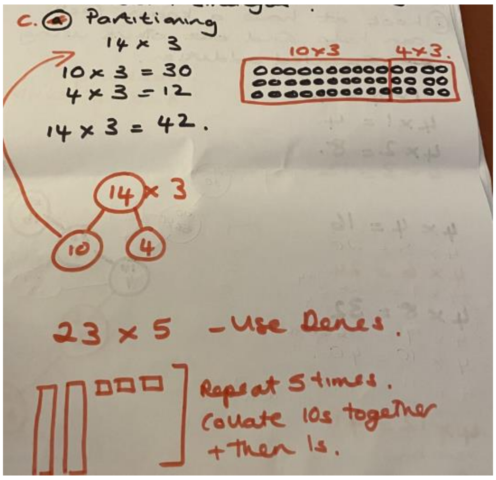
- I can recognise factor pairs
- I can use factor pairs
- I can use times table to deduce facts that are unknown using mental strategies

- ***If I know 12 x 4, then I also know 13 x 4***
  12 x 4 = 48 so add 4 = 52

- ***If I know 3 x 2, then I also know 30 x 2***

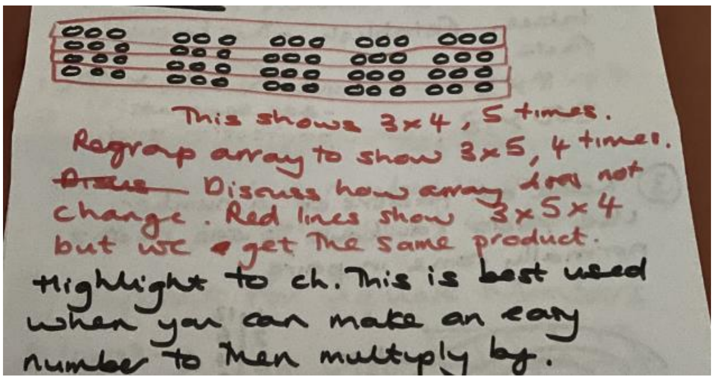


- ***Partitioning***



- ***Associative law***

  6 x 7 x 5 *Do 6 x 5 first = 30*
  30 x 7 so 3 x 7 =21



- I can use the formal written method of multiplication with 2 and 1 digit numbers without crossing the boundary

- I can use the formal written method of multiplication with 2 and 1 digit numbers when crossing the boundary

- I can use the formal written method of multiplication with 3 and 1 digit numbers without crossing the boundary

13 x 2 =

	1	3		
x		2		
	2	6		

1 → Underline the ones digits
2 → Line them up
3 → Multiply the ones column
2 x 3 = 6 ones
4 → Multiply the tens column
2 x 1 = 2 tens

- I can use the formal written method of multiplication with 3 and 1 digit numbers when crossing the boundary

24 x 3 =

	2	4		
x		3		
	7	2		
	1			

1 → Underline the ones digits
2 → Line them up
3 → Multiply the ones column
3 x 4 = 12 ones
What is 12 made up of? 1 ten and 2 ones so we must carry the 1 into the tens column
4 → Multiply the tens column
3 x 2 = 6 tens *add on our extra 1 ten to get 7 tens*

Look at examples where regrouping may happen from tens to hundreds.

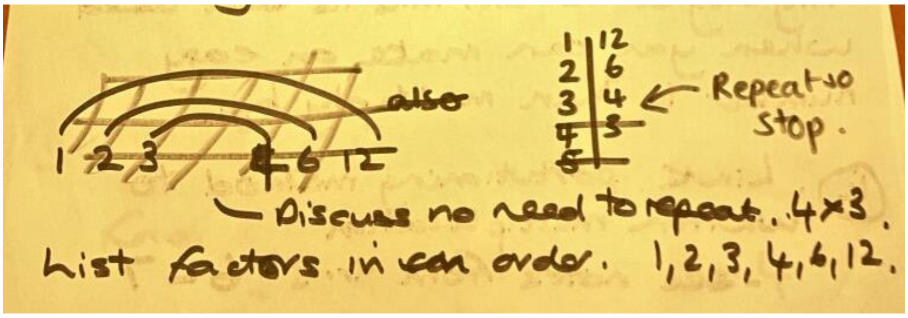
- I solve problems using all of the above

Year Five:

I can recall all times table facts (If not, refer back to steps in Yr2/3 to teach times tables and patterns)

I can create fact families for times tables. (Establish other known facts)
E.g
8 x 3
800 x 3
Link to x10 x100
See separate progression grid

I can look at factors of a number. To use factor rainbows to see that factors usually come in pairs.



Look at common facts between 2 numbers e.g. 12 and 36.

I can establish if a number is a prime up to 100.
Look at prime numbers. Why are they prime numbers?
Consider factors
Only 2 factors- 1 and itself

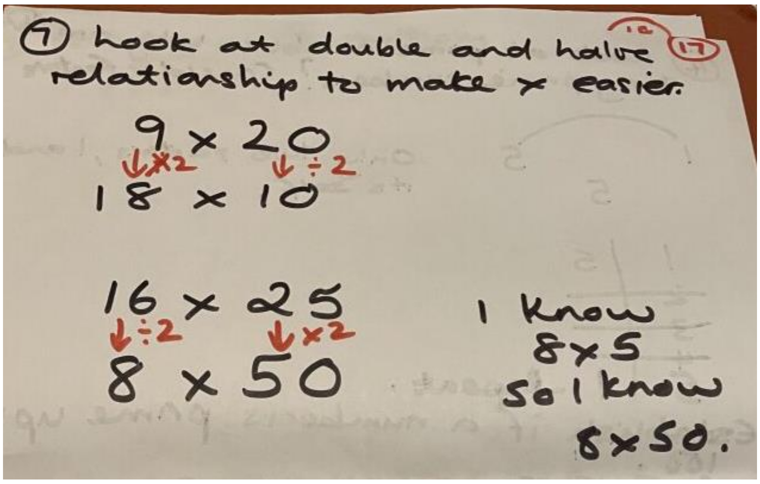
I can establish if a number is prime or composite (non-prime) numbers.

I can repeat for square numbers.

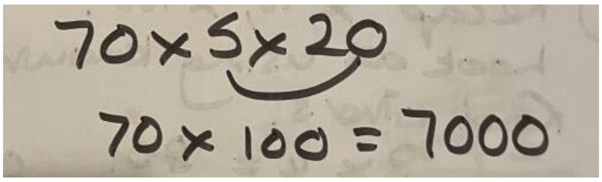
I can recap x10 and x100
Look at using known facts to find others
E.g.
3 x 4
30 x 4
30 x 40
0.3 x 4

0.3 x 0.4

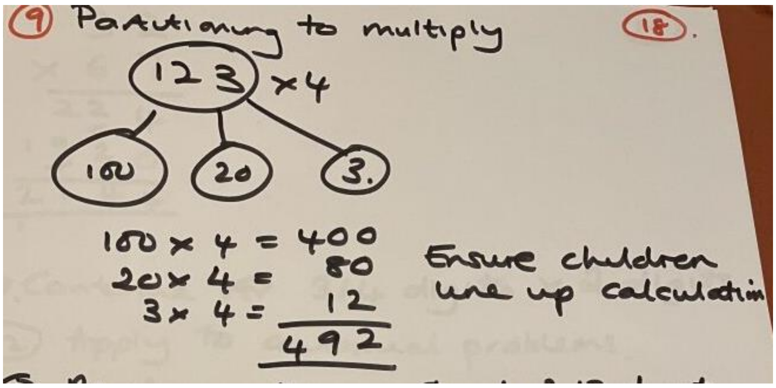
I can recognise the relationship between double and halve to make times tables easier.



I can re-order to make calculations easier.

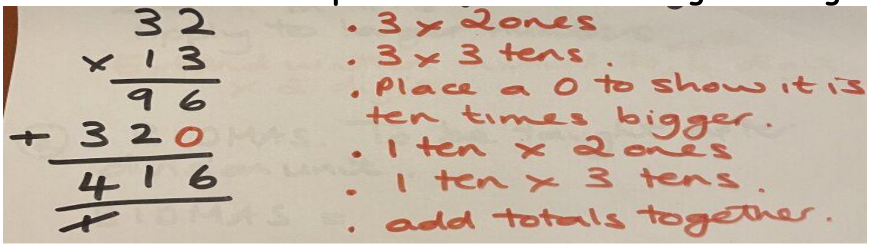


I can partition to multiply.

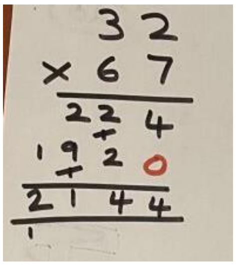


I can re-cap written method 2/3 digit x 1 digit (Year 4 steps 6-7)

I can use written multiplication method for 2 digit x 2 digit.



Model examples with a carry.



Continue with 3/4digits x 2 digits

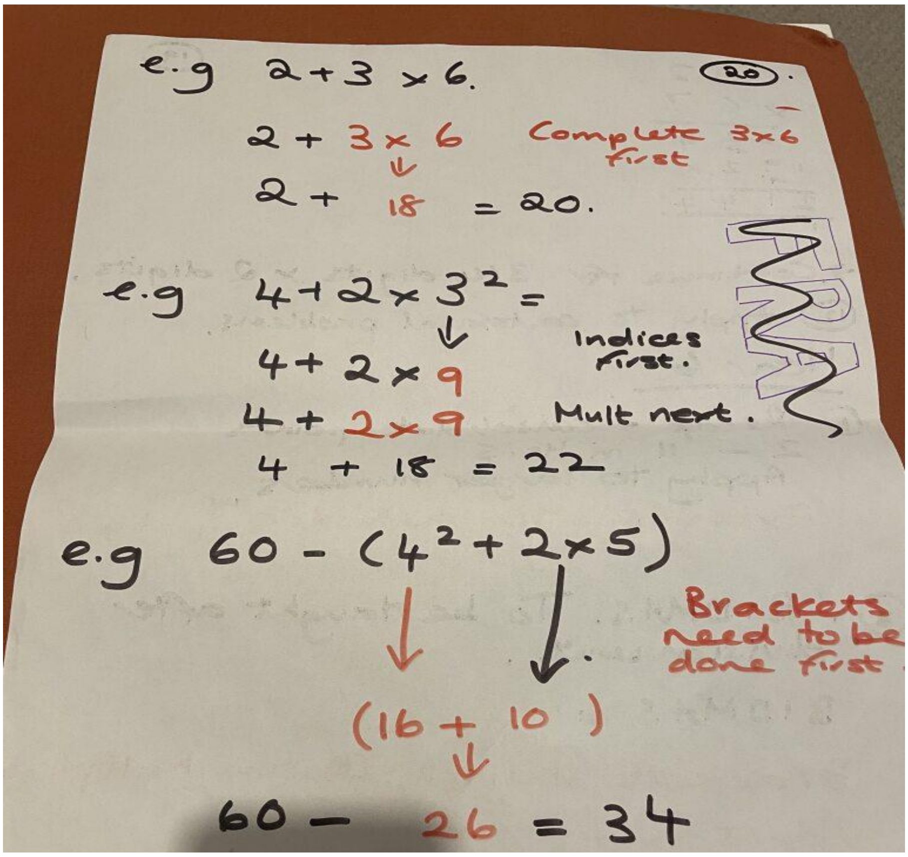
I can apply to contextual problems.

<u>Year Six:</u>

I can recap and consolidate points 2-11in Year 5
I can apply to larger numbers.
I can extend written method up to 4 digit x 2 digit.

BIDMAS – To be taught after divsion unit.
Brackets
Indices
Division
Multiplication
Addition
Subtraction

N.B.
Division and multiplication have equal priority
Addition and subtraction also have equal priority



I can apply all skills to contextual problems and SATS problems.