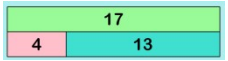
Mount Pleasant Primary School Calculation Policy 2020

Year 2- By the end of year 2 we expect children to:

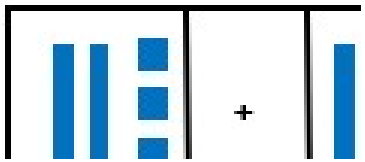
Addition

Numbers to 50

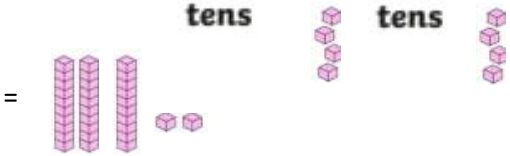
Use bar models



Use Dienes



28 + 4 =

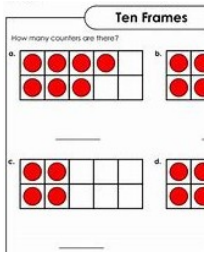


=

Concrete –
Use Numicon for doubles
8+8=16

Subtraction

Numbers to 50

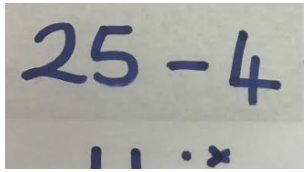


Use tens frame and bar models to derive subtract facts to 20
To derive bonds to 100 label the counters with 10. And count in 10s

10	10	10		

30 + 70 = 100

Use Dienes to subtract tens and ones. Not crossing ten. Move to drawing
Dienes.

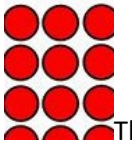


Use Dienes to subtract a 1 digit, tens and 2 digit from a 2 digit number, extend to drawing Dienes

Multiplication

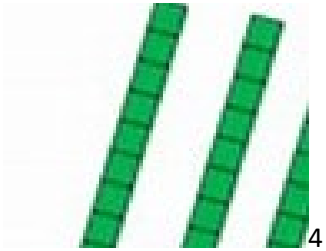
Use concrete apparatus- cubes
Eg. 3 x 2=

Draw arrays to calculate.

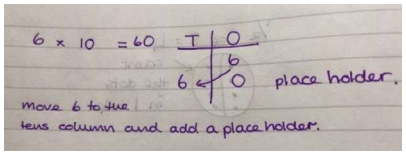


This is 4 x 5 = 20

Draw arrays on a whiteboard then rotate the white board to demonstrate commutativity.

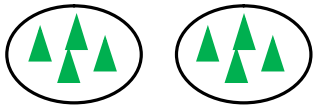


4 x 10

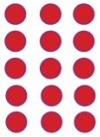


Division

Do the concept of division as sharing.
Eg. Share 8 into 2 groups



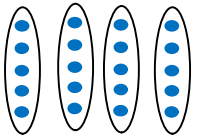
Arrays



3 columns of 5 counters
5 + 5 + 5 = 15
3 lots of 5 equals 15

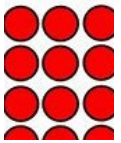
Division to be shown by grouping. Use counters to support.
10 ÷ 5 = 2

Then move on to show
20 ÷4= 5



Understand division as grouping

20 ÷ 5 can be modelled as:



20-5-5-5-5 = 0
Then show as repeated subtraction below.

Grouping – There are 6 sweets. How many people can have 2 each? (How

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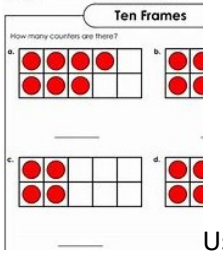
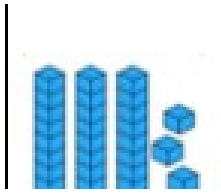
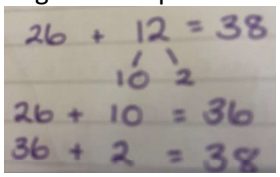


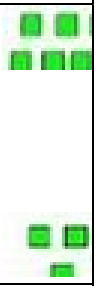
Use the 10s frame.



Begin to use partitioning:



Then use Dienes in a column frame.

Tens	ones
	
5	9

Teach subtraction by partitioning:

26 – 12 = 14

/\

10 2

26 – 10 = 16

16 – 2 = 14

Begin to demonstrate the concept of subtracting in columns by placing Dienes in a column subtraction frame.

Tens	Ones

Extend to drawing the Dienes and crossing out, then replace pictures with numbers.

Use bar models to create fact families and recognise inverse.

20	
15	5

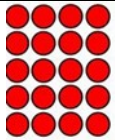
15 + 5 = 20

5+15 =20

20-5=15

20-15=5

Find a small difference by counting on using a numbered number line.



5+5+5+5=20

4 x 5=20

Start with tens and multiply by a single digit

(Grid Method)

TU x U

x	30	5
2	60	10

Missing numbers

□ x 2 = 14 14 = 2 x □

□ x ∇ = 14 14 = □ x ∇

Problem solving - (Applying the grid method)

How many stamps would you have if you bought four books of stamps, with each having 10 stamps in it?

Partition-

23 x 3= 20 x 3

3 x 3

many 2's make 6?)

÷ = signs and missing numbers

16 ÷ 2 = □ □ = 16 ÷ 2

16 ÷ □ = 8 8 = 16 ÷ □

Using known number facts

8 ÷ 2= 4 8 ÷ 4=2

80÷2=40 80 ÷ 4=20

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Extend to drawing Dienes in the column frame followed by:

T	O
3	6
+2	3
	9
+5	0
5	9

Begin to work beyond 100.

12 + ☐ = 18

18	
12	?

Create a bar model then use the inverse to calculate.

Number Line (partially numbered)
number lines to include- thermometer, weighing scales, metre sticks

Compensation method- 35 + 9=
Adjusting (may not be shown on a number line)
Add 9 or 11 by adding 10 and adjusting by 1
35 + 9 = 44
(teaching- bar model, arrows cards and Dienes equipment

Expanded column subtraction - (not exchanging tens)

76 – 45 =

	70	6
–	40	5
		1
+	3	0
	3	1

Explain that we are putting our tens and ones back together.