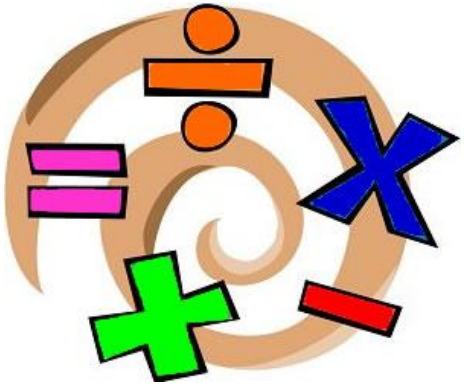
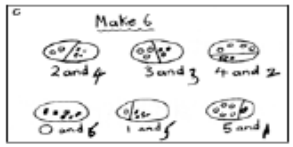
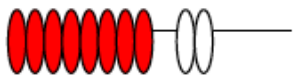
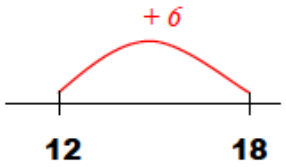
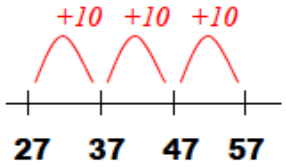
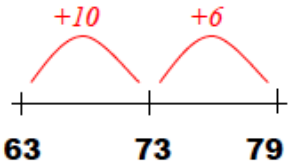
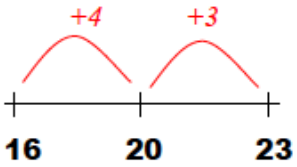
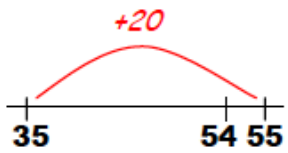
Asby Endowed School School

Pupil Progression in Calculations



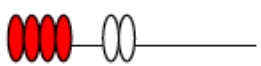
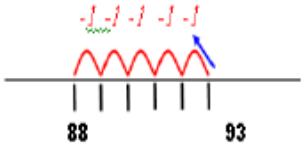
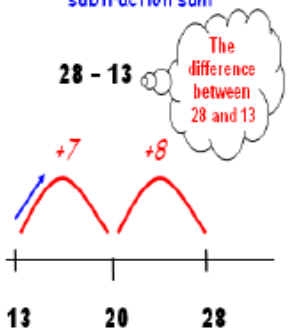
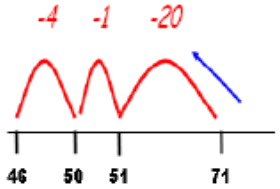
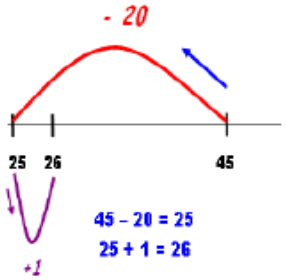
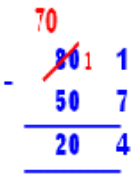
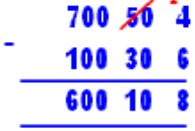
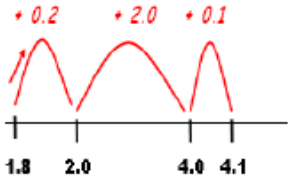
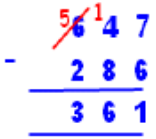
Progression in Addition

I can record calculations using pictures	I can use bead strings or bead bars to illustrate addition	I can use a number line to count on in units	I can use a number line to count on in tens	I can use a number line to count on in tens and units by partitioning	I can partition a number to bridge through a multiple of ten
Make 6  **2 + 4 = 6** **3 + 3 = 6**	**8 + 2**  **8 + 2 = 10**	**12 + 6**  **12 + 6 = 18**	**27 + 30**  **27 + 10 + 10 + 10 = 57** **27 + 30 = 57**	**63 + 16**  **63 + 10 + 6 = 79** **63 + 16 = 79**	**16 + 7**  **16 + 4 + 3 = 23** **16 + 7 = 23**

I can add near multiples of ten by adding in tens and then adjusting	I can use methods of partitioning to solve more complex addition	I can use the expanded method to add amounts	I can carry numbers to add using the compact method of addition	I can add decimal amounts using the compact method	
35 + 19  **35 + 20 - 1 = 54** **35 + 20 - 1 = 54**	**375 + 167**  **5 + 7 = 12** **70 + 60 = 130** **300 + 100 = 400** **400 + 130 + 12 = 542** **375 + 167 = 542**	**215 + 176** 215 + 176 11 (5 + 6) 80 (10 + 70) 300 (200 + 100) 391 **215 + 176 = 391**	**625 + 48** 625 + 48 673 1 **625 + 48 = 673**	**16.4 kg + 7.68 kg** 16.40 + 7.68 24.08 1 1 **16.4 + 7.68 = 24.08 kg**	

Vocabulary: Add, addition, total, plus, more than, and, altogether, increase, equals, make, sum etc.

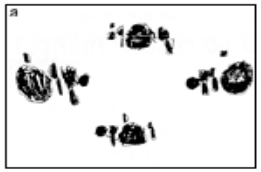
Progression in Subtraction

I can record calculations using pictures  8 – 5 = 3	**I can use bead strings or bead bars to illustrate subtraction** 6 - 2  6 -2 = 4	I can use a number line to count back when subtracting 93 - 5  93 – 5 = 88	I can count on using a number line to solve a subtraction sum 28 - 13  28 – 13 = 15	I can bridge through multiples of 10 when counting back 71 - 25  71 – 20 = 51 51 – 1 = 50 50 – 4 = 46 71 – 25 = 46	I can subtract near multiples of 10 by taking away in tens and adjusting 45 - 19  45 – 20 = 25 25 + 1 = 26 45 – 19 = 26
I can partition numbers and subtract using decomposition 81 – 57  81 – 57 = 24	I can solve more complex subtractions by partitioning and decomposition 754 - 136  754 – 136 = 618	I can use number line to subtract (or find the difference between) decimal amounts 4.1 – 1.8  1.8 + 0.2 + 2.0 + 0.1 = 4.1 4.1 - 1.8 = 2.3	I can use compact decomposition to solve subtraction sums 647 - 286  647 – 286 = 361	I can use compact decomposition to solve decimal subtractions 137.4 - 29.6  137.4 - 29.6 = 107.8	

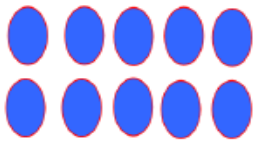
Vocabulary: Subtract, subtraction, take away, minus, less than, difference, decrease, leave, how many left etc

Progression in Multiplication

I can count in 2s, 5s and 10s
I can place objects in equal groups



I can understand multiplication as repeated addition



5 X 2

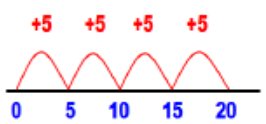
= 2 + 2 + 2 + 2 + 2

=10

I can understand multiplication as repeated addition using a number line

4 X 5 =...

4 lots of 5



4 X 5 = 20

I can multiply numbers by 10, 10, 100

10 Thousand	Th	H	T	U
			9	4
		9	4	0
	9	4	0	0
9	4	0	0	0

X 10 ← → ÷ 10

94 X 10 = 940

94 X 100 = 9400

94 X 1000 = 94000

I can partition numbers to simplify multiplication

13 X 3 =...

13 lots of 3 ?

3 X 3 = 9

3 lots of 3

10 X 3 = 30

10 lots of 3

13 X 3 = 39

I can solve problems involving multiples of 10, 100, 1000.

6 X 20

2 X 10

= 6 X 2 X 10

= 120

8 X 300

3 X 100

= 8 X 3 X 100

= 2400

I can use the grid method to solve multiplication problems

23 X 8 =

X	20	3
8	160	24

	1	6	0
+		2	4
	1	8	4

23 X 8 = 184

I can use expanded multiplication methods

32 X 6 =

		3	2
	X		6
		1	2 (2 X 6)
+	1	8	0 (30 X 6)
	1	9	2 (32 X 6)

32 X 6 = 192

I can use the grid method to solve more complex problems

72 X 38

X	70	2
30	2100	60
8	560	16

	2	1	6	0
+		5	7	6
	2	7	3	6

1

72 X 38 = 2736

I can use the grid method to include decimal numbers

4.9 X 3

X	4.0	0.9
3	12.0	2.7

	1	2	.	0
+		2	.	7
	1	4	.	7

4.9 X 3 = 14.7

I can use the compact method of multiplication (TU X TU)

24 X 37

		1 2	4
X		3	7
	1	6	8
	7	2	0
	8	8	8

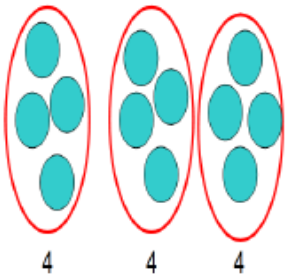
24 X 37 = 888

Vocabulary: Multiply, multiplication, multiple, times, lots of, "groups of" product, "10 times…" etc

Progression in Division

I can share items into equal groups
I can count in 2s, 10s and 5s

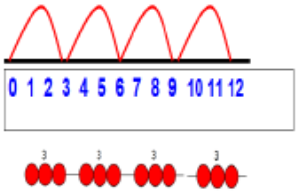
I can share items into equal groups



12 shared between 3 is 4

I can understand division as repeated addition

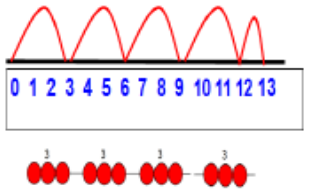
12 ÷ 3 =



12 ÷ 3 = 4

I can understand division as repeated addition (with remainders)

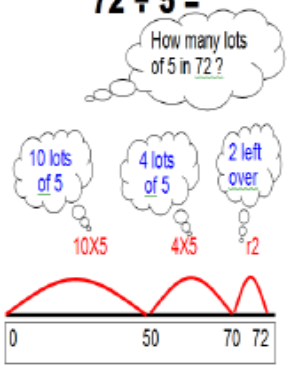
13 ÷ 3 =



12 ÷3 = 4 r 1

I can divide a number by using a blank number line and grouping the divisor

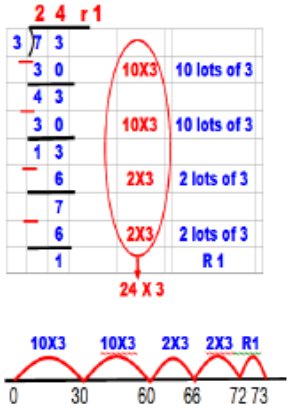
72 ÷ 5 =



72 ÷ 5 = 14 r 2

I can divide a number by chunking

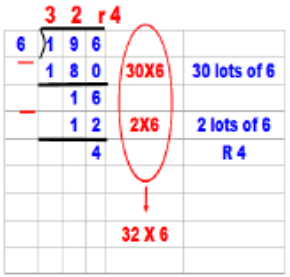
73 ÷ 3 =



73 ÷ 3 = 24 r 1

I can divide a number by chunking (grouping in multiples of 10)

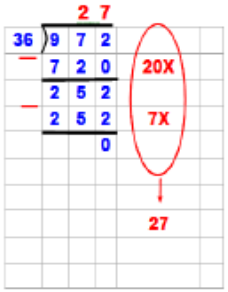
196 ÷ 6 =



196 ÷ 6 = 32 r4

I can divide a number by chunking (HTU -TU)

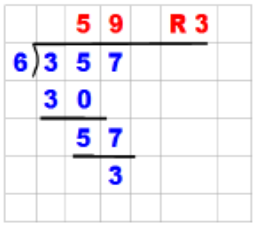
972 ÷ 36 =



972 ÷ 36 = 27

I can use a semi-compact division method

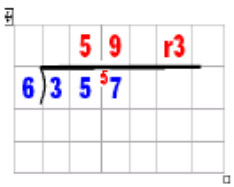
357 ÷ 6 =



357 ÷ 6 = 59 r 3

I can use a compact division method

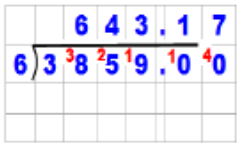
357 ÷ 6 =



357 ÷ 6 = 59 r3

I can use a compact division method *(showing the remainder as a decimal)*

3859 ÷ 6 =



3859 ÷ 6 = 3859.17
(to 2 dp)

Vocabulary: Divide, division, divided by, share, sharing, equal, equally, how many, remainder, factor, chunking.