IMPACT

in Learning

Involving More Parents And Children Together

Good schools with good 'stuff'

=   5% on average

Parents who are involved and informed

=   30% on average

IMPACT in Learning

Involving More Parents And Children Together

In this workshop we aim to:

Encourage partnership

Demonstrate

Share tools

Offer tools for use at home

Support

Improve   (4 week programme)

When practising times tables, visual learners benefit greatly from circling the relevant numbers on a number grid.

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

Here is the 7 times table.

Other ways to practise times tables

Addition

Year 3

- **Physical objects leading to written method**

- **Regrouping required.**

- **Up to 3 digits numbers.**

```
    1  2  6
 +     3  5
 ─────────────
    1  6  1
          1
```
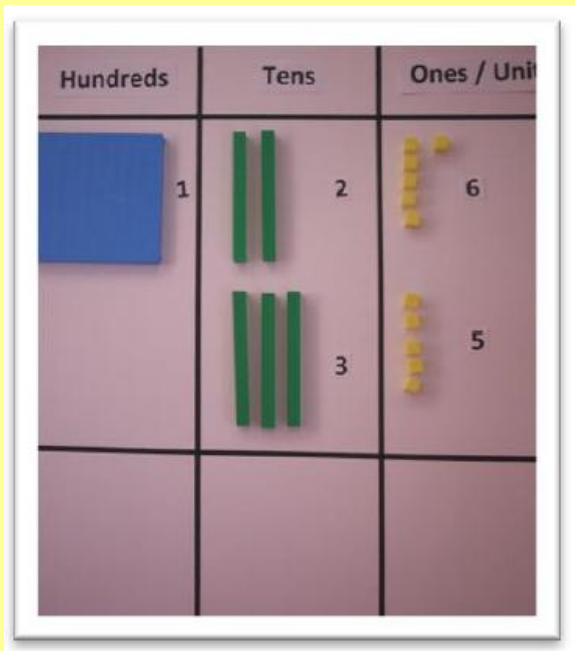
Year 4

- **Physical objects to support conceptual understanding, leading to written method**

- **Up to 4 digit numbers**

- **Decimals to 2 decimal places.**

- **Add several numbers at the same time.**

```
    1  4  8  3
 +  2  1  5  6
 ─────────────
    3  6  3  9
             1
```

```
    1  .  4  6
 +  2  .  4  5
 ─────────────
```

Addition

Encouraging students to see the links between practical model and the formal written method.

Hundreds	Tens	Ones
100	10 10	1 1 1 1 1 1
	10 10 10	1 1 1 1 1
		10

$$
\begin{array}{r}
1\ \ 2\ \ 6 \\
+\quad\ \ 3\ \ 5 \\
\hline
1\ \ 6\ \ 1 \\
\hline
1 \\
\end{array}
$$

Addition

Now try this one, using the Place Value Counters;

127 + 25

Addition

$$127$$
$$+ \ \ 25$$
$$\overline{152}$$
$$1$$

Subtraction

Year 3

- Up to three digits.

- Include exchange.

$$\begin{array}{r} 1\;\overset{4}{\cancel{5}}\;{}^{1}3 \\ -\;\;\;\;3\;\;7 \\ \hline 1\;\;1\;\;6 \end{array}$$

Year 4

- Up to 4 digits.

- Money used to introduce decimals.

$$\begin{array}{r} 3\;\overset{3}{\cancel{4}}\;\overset{1}{0}\;5 \\ -\;1\;2\;8\;4 \\ \hline 2\;1\;2\;1 \end{array}$$

Subtraction

Year 3: Using **base 10 equipment** to get to the written method.

Year 4: Using **place value counters** and then written method.

Hundreds	Tens	Ones

	4	
1	~~5~~	¹3
-	3	7
1	1	6
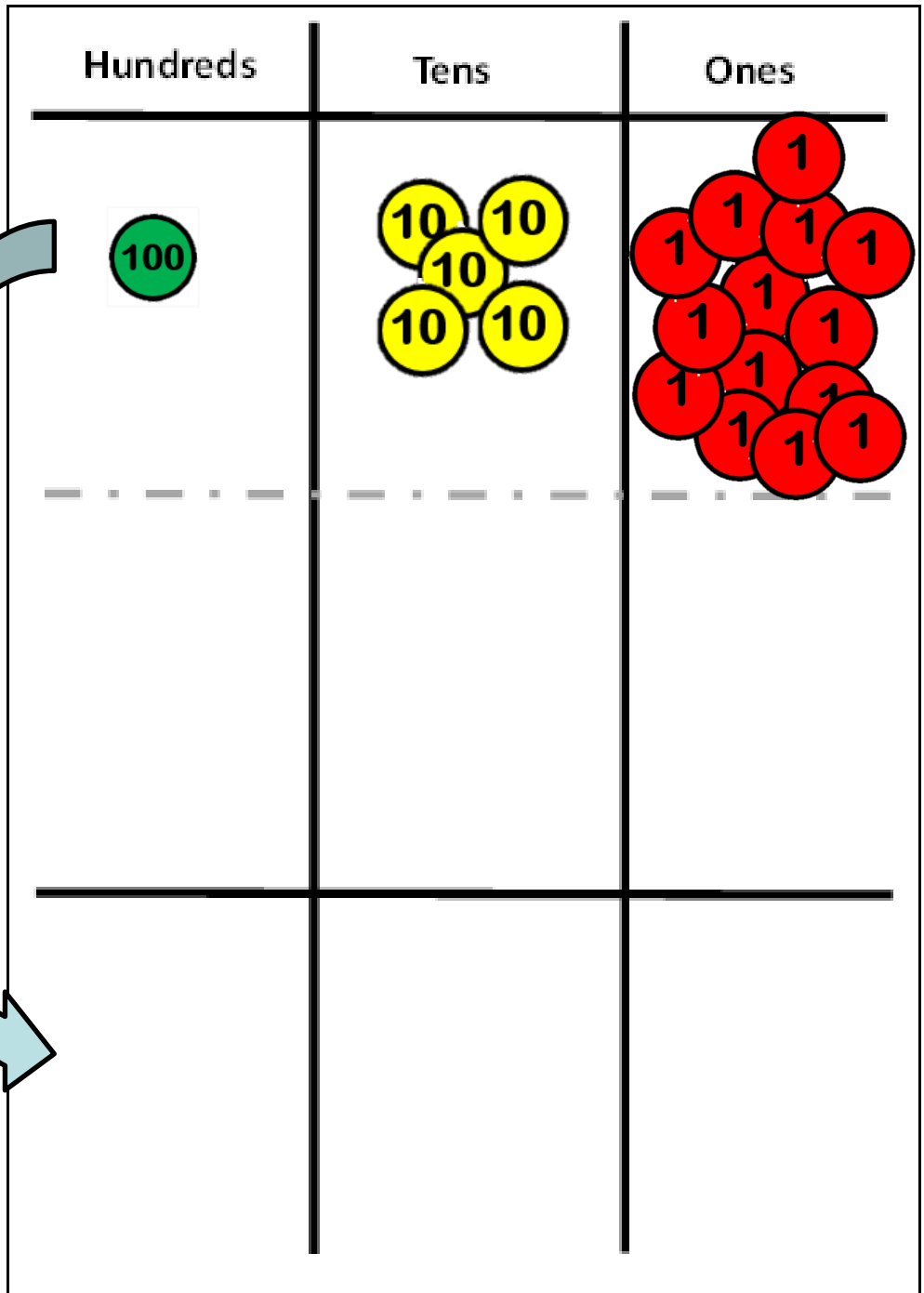
Subtraction

Now try this one, using the Place Value Counters;

132 - 51

Subtraction

$$\begin{array}{r} {}^{0}\!\!\not{1}\,^{1}32 \\ -\ \ 51 \\ \hline 81 \end{array}$$

Multiplication
Year 3

- **Recall facts in the 2, 3, 4, 5, 8 and 10 times tables.**

- **2 digit times 1 digit calculations. Mental and written methods.**

36 x 7

	30	6
7	210	42

```
   2 1 0
 +   4 2
   2 5 2
```
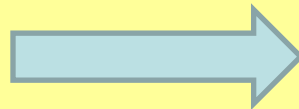
```
    3 6
  x   7
  -----
    4 2
  2 1 0
  -----
  2 5 2
```

Expanded column written method, progressing to the compact column written method

```
    3 6
  x   7
  -----
  2 5 2
    4
```
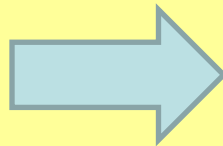
Multiplication

Year 4

- Recall multiplication and division facts for **all** multiplication tables up to 12 x 12.

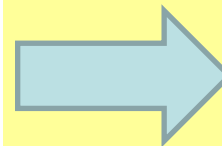- 2 and 3 digit times 1 digit calculations.

- Mental and written methods.

143 x 6

x	100	40	3
6	600	240	18

```
  6 0 0
  2 4 0
+   1 8
  8 5 8
```

```
    1 4 3
  x     6
  _____
      1 8
    2 4 0
    6 0 0
  _____
    8 5 8
```

```
    1 4 3
  x     6
  _____
    8 5 8
      2 1
```

Mental Multiplication

Now try this one, using the grid method.

27 x 3

Mental Multiplication

	20	**7**
3	60	21

$$\begin{array}{r} 60 \\ + \underline{21} \\ \underline{81} \end{array}$$

Multiplication
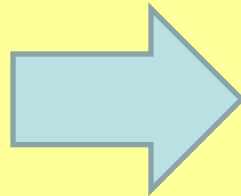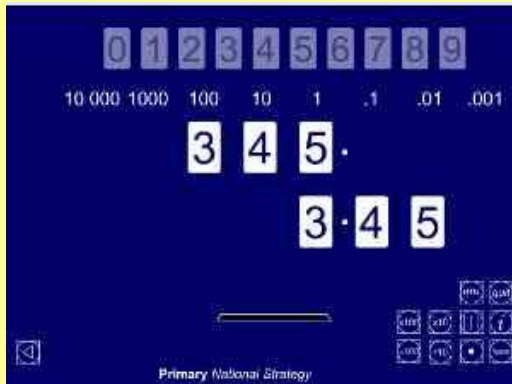
$$
\begin{array}{r}
5\ 2 \\
\times\ \ \ 5 \\
\hline
1\ 0 \\
2\ 5\ 0 \\
\hline
2\ 6\ 0 \\
\hline
\end{array}
$$

Expanded written method.
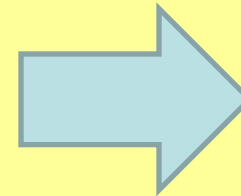
$$
\begin{array}{r}
5\ 2 \\
\times\ \ \ 5 \\
\hline
2\ 6\ 0 \\
\hline
1
\end{array}
$$

Compact written method.

Written Multiplication

Now try this one, using either the expanded or compact method

46 x 3

Written Multiplication

	40	6
3	120	18

```
  120
+  18
─────
  138
```

```
   46
x   3
─────
   18
  120
─────
  138
```

```
   46
x   3
─────
  138
   1
```

Division

63 ÷ 3

```
  2  1
3 | 6  3
```

```
  2  1  r2
3 | 6  5
```

2 digit ÷ 1 digit
using place value counters.

Remainders also required.

427 ÷ 3

```
  1  0  8  r5
       5
6 | 6  5  3
```

3 digit ÷ 1 digit

Including **exchange** and **remainders**

Division

63 ÷ 3

21
3 | 6 3

2   1

3

Tens   Ones

10 10
10 10
10 10

1
1 1
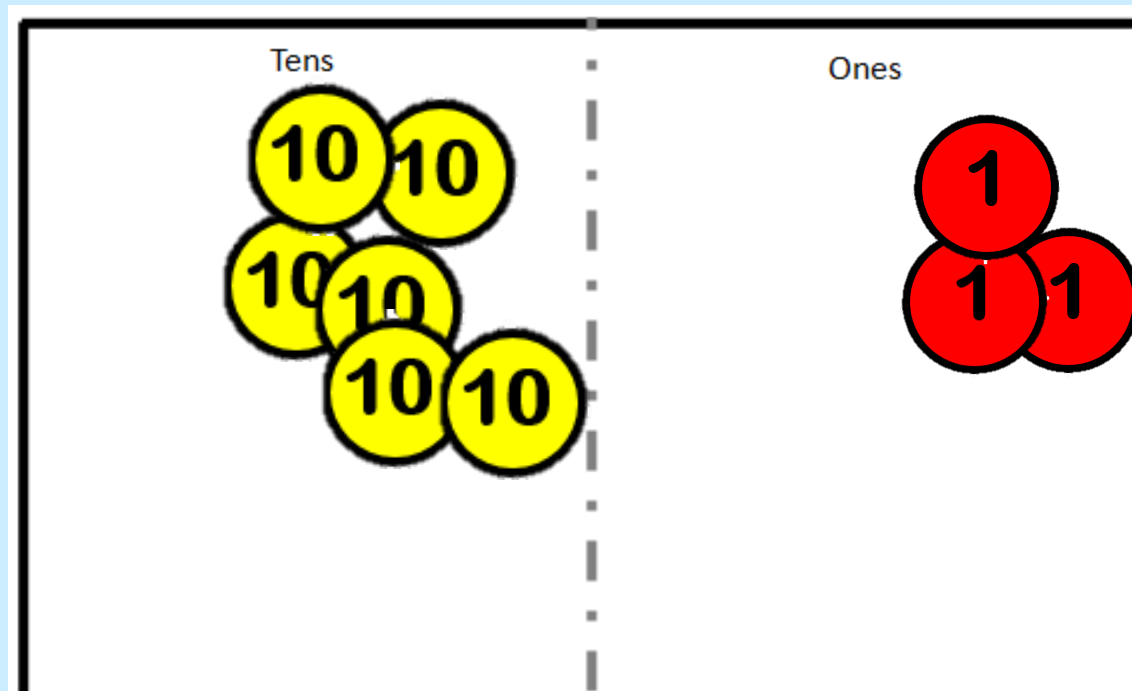
Division

Now try this one, using the Place Value Counters;

96 ÷ 3

Division

$$\begin{array}{r} 3\,2 \\ 3\,\overline{\smash{)}\,96} \end{array}$$

Division

$$42 \div 3$$

$$3 \overline{)4\,2} = 14$$

1   **4**

Tens	Ones
10 10 10 10	1 1 1 1 1 1 1 1 1 1 1 1

3
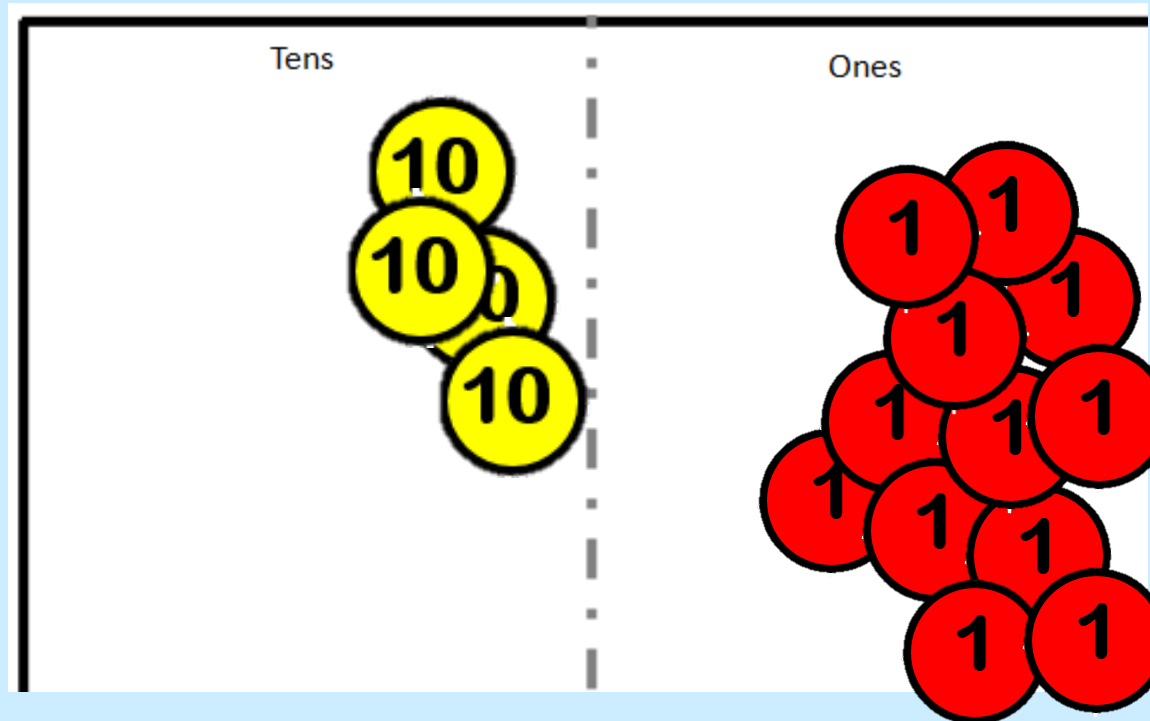
Division

Now try this one, using the Place Value Counters;

57 ÷ 4

Division

1 4 r 1

4 | 57

Division

2 9 r.2

6 | 1 2 5 6

Answer: 209 r.2

snakes, ladders and smiley faces

Finish

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

start

Place your game cards here

IMPACT in Learning
Teaching More Parents And Children Together

© Impact In Learning 2006
0121 706 4539

Calculate 467 + 32

If you got it right move on 2 spaces.

Answer
499

www.bgfl.org/virtualdice

All of the questions in week one will be on addition.

add   sum   total

increase   larger   more

Ryders Hayes Academy

NC Level	Control Group	Impact Pupils
Raised	41%	77%
Stayed same	42%	23%
Decreased	17%	0%

36% of the Impact pupils made 2 sub-levels progress in 5 weeks in maths.

Evaluation

- Please fill in the evaluation form before you leave.

- We hope you enjoyed the workshop.

- Good luck with your Maths game!

IMPACT

in Learning

Involving More Parents And Children Together