IMPACT in Learning

Involving More Parents And Children Together

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Good schools with good 'stuff'

= 5% on average

Parents who are involved and informed

= 30% on average

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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

MyMaths.co.uk
Bringing maths alive

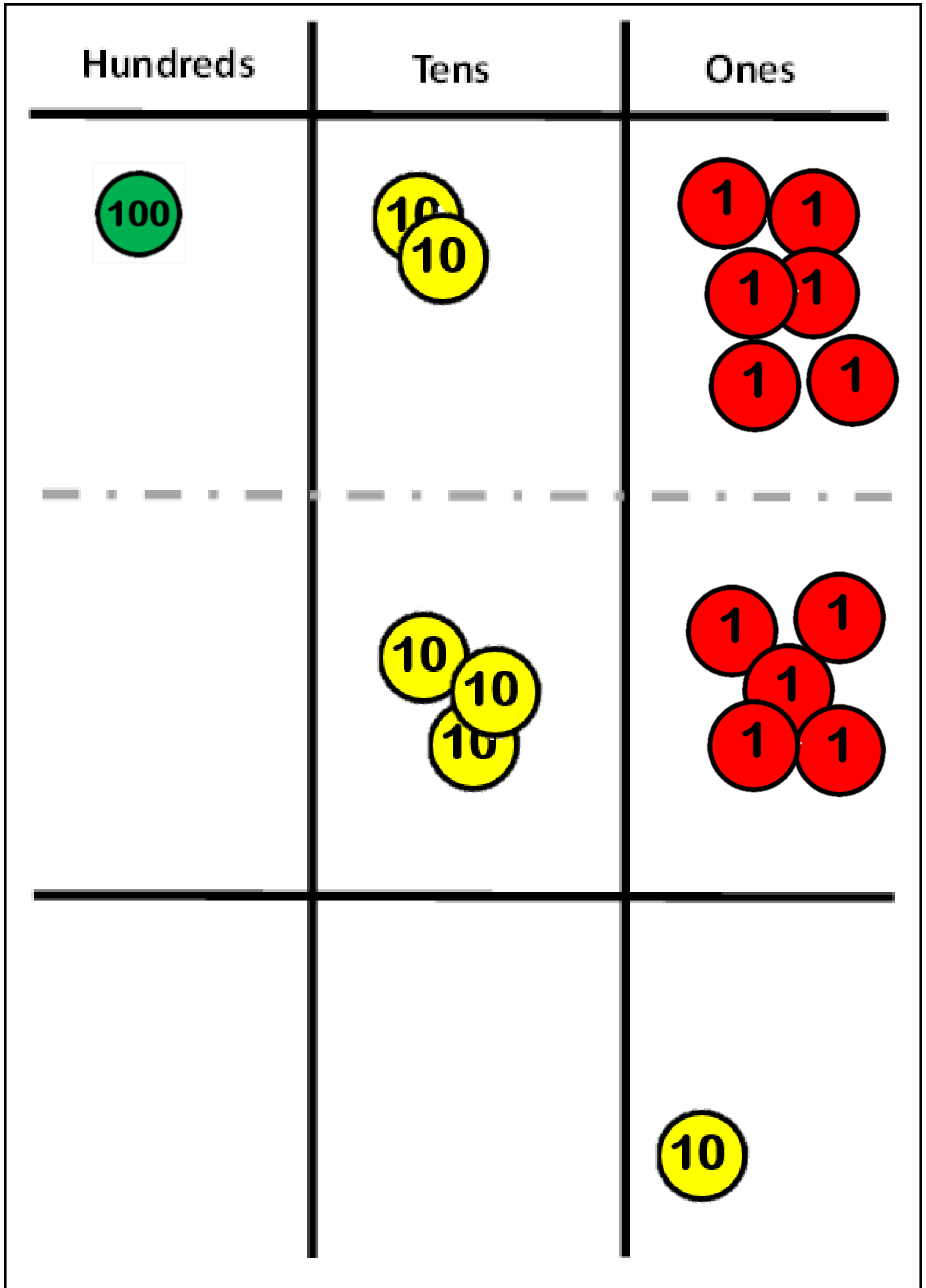
Addition

Year 3

- Physical objects leading to written method

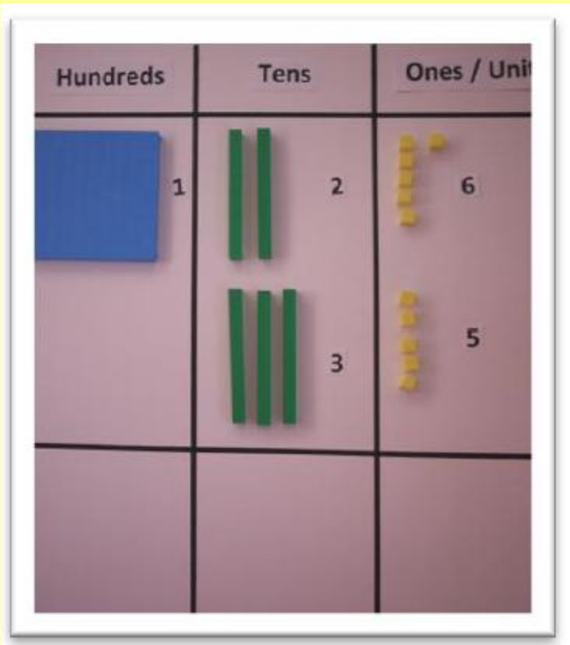
- Regrouping required.

$$
\begin{array}{cccc}
 & 1 & 2 & 6 \\
+ & & 3 & 5 \\
\hline
 & 1 & 6 & 1 \\
\hline
 & & {\scriptstyle 1} & \\
\end{array}
$$



	1	2	6
+		3	5
	1	6	1
		1	

Addition



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

	1	2	6
+		3	5
	1	6	1
		1	

Addition

Year 4

- Progress to dealing with thousands.
- Year 4s will also start to add several numbers together, with different numbers of digits.
- Introduce decimals using money.

Addition

Year 5

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

	2	1	.	3	0
+		9	.	0	8
	3	0	.	3	8
	1				

- More than 4 digits.
- Up to 3 decimal places.

Addition

Year 6

	3	0	2	4	3	2
+	1	1	0	7	0	9
	4	1	3	1	4	1
			1		1	

	1	0	6	.	0	3	5
			2	.	8		
		2	3	.	3	8	
+	2	1	0	.	1	2	4
	3	4	2	.	3	3	9
		1	1		1		

- Larger numbers
- One and two step problems

Addition

* Try 25235 + 4023

** Try 2. 812 + 6.7

(make sure the decimal points line up!)

*** Try 53 + 2.7 + 0.12

(make sure the decimal points line up!)

Addition

```
 25235
+ 4023
 29258
```


```
   2.812
+  6.700
   9.512
   1
```

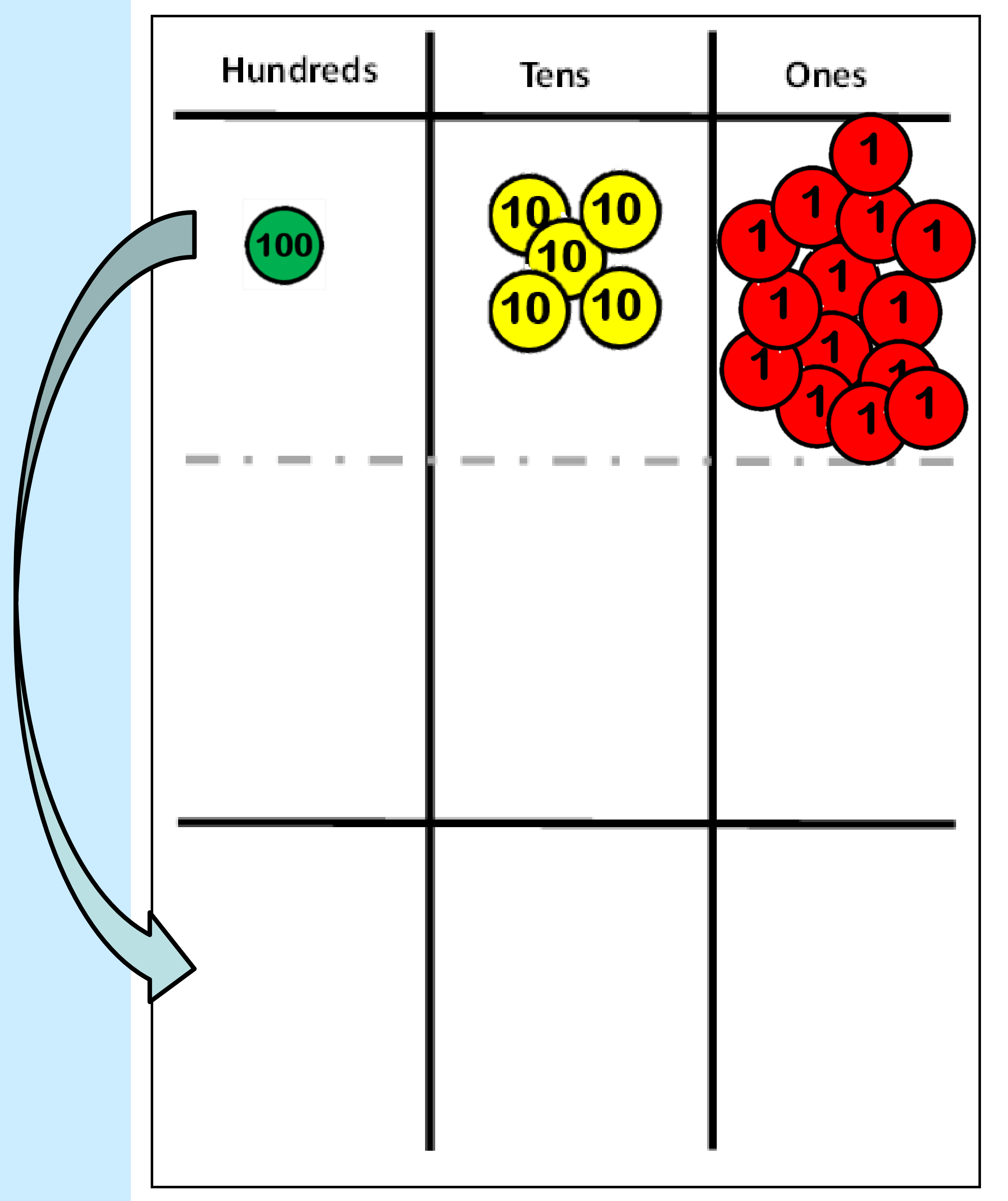
```
 53.00
  2.70
+ 0.12
 55.82
```

Subtraction

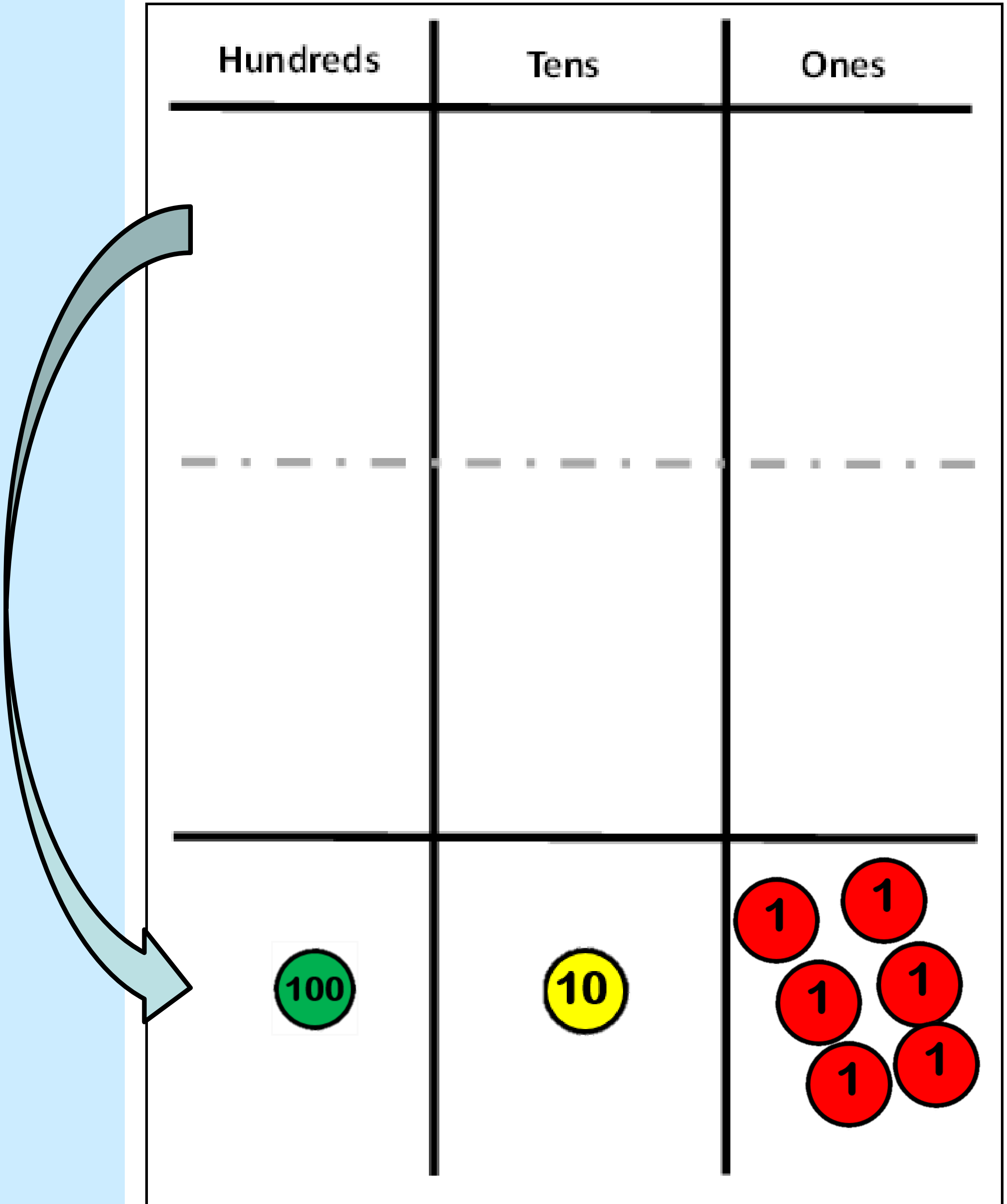
Year 3

- Use grouped objects with exchange.

$$
\begin{array}{rccc}
 & & 4 & \\
 & 1 & \cancel{5} & {}^{1}3 \\
- & & 3 & 7 \\
\hline
 & 1 & 1 & 6 \\
\hline
\end{array}
$$



$$\begin{array}{cccc} & & 4 & \\ & 1 & \cancel{5} & {}^{1}3 \\ - & & 3 & 7 \\ \hline & 1 & 1 & 6 \\ \hline \end{array}$$



$$\begin{array}{rccc} & & 4 & \\ & 1 & \cancel{5} & {}^{1}3 \\ - & & 3 & 7 \\ \hline & 1 & 1 & 6 \\ \hline \end{array}$$

Subtraction

Year 4

- Up to 4 digits.
- Money used to introduce decimals.

Subtraction

Year 5

$$
\begin{array}{cccccc}
 & & {\scriptstyle 5} & {\scriptstyle 1} & {\scriptstyle 2} & {\scriptstyle 1} \\
 & 4 & \cancel{6} & 1 & \cancel{3} & 2 \\
- & 2 & 3 & 5 & 2 & 8 \\
\hline
 & 2 & 2 & 6 & 0 & 4 \\
\hline
\end{array}
$$

$$
\begin{array}{ccccccccc}
 & & {\scriptstyle 4} & {\scriptstyle 11} & {\scriptstyle 1} & & {\scriptstyle 2} & {\scriptstyle 1} & \\
 & 1 & \cancel{5} & \cancel{2} & 1 & . & \cancel{3} & 0 & 4 \\
- & & 3 & 7 & 9 & . & 0 & 8 & 3 \\
\hline
 & 1 & 1 & 4 & 2 & . & 2 & 2 & 1 \\
\hline
\end{array}
$$

- **More than 4 digits.**
- **Column subtraction.**

Subtraction

Year 6

	2	1	1	1	2	1
	~~3~~	0	~~2~~	4	~~3~~	2
-	1	1	0	7	0	9
	1	9	1	7	2	3

	0	1	5		1		
	~~1~~	2	~~6~~	.	0	3	5
-		5	2	.	8	0	3
	0	7	3	.	2	3	2

- Subtraction with larger numbers
- Decimals included (of differing lengths)

Subtraction

* Try 67423 - 42262

** Try 5.95 – 3.86
(make sure the decimal points line up!)

*** Try 643.27 – 2.142
(make sure the decimal points line up!)

Subtraction

$$
\begin{array}{r}
67\overset{3}{\cancel{4}}\,{}^{1}23 \\
-\ 42262 \\
\hline
25161 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
5.\overset{8}{\cancel{9}}\,{}^{1}5 \\
-\ 3.86 \\
\hline
2.09 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
643.2\overset{6}{\cancel{7}}\,{}^{1}0 \\
-\ \quad 2.142 \\
\hline
641.128 \\
\hline
\end{array}
$$

Multiplication

Year 5

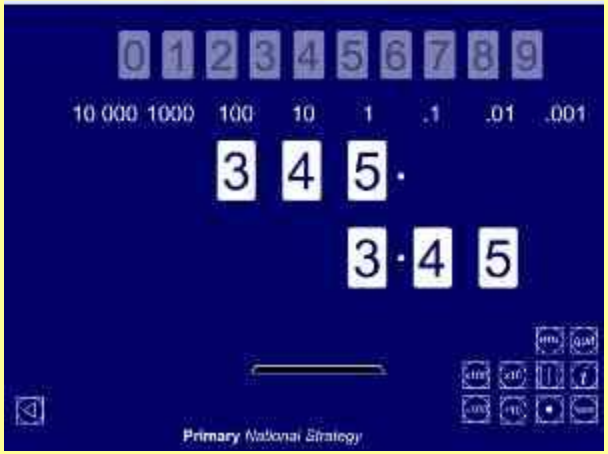
	2	7	4	1
x				6
1	6	4	4	6
	4	2		

- 4 digit numbers by 1 digit numbers.

		4	2	7	6
x				3	4
	1	7	1	0	4
		1	3	2	
1	2	8	2	8	0
		2	1		
1	4	5	3	8	4
	1				

- 4 digit x 2 digit numbers in long multiplication.

Multiplication



		3	2	5
x				6
			3	0
		1	2	0
	1	8	0	0
	1	9	5	0

		3	2	5
x				6
	1	9	5	0
	1	1	3	

Multiplication

* 652 x 3

** 85.64 x 4

Multiplication

$$\begin{array}{r} 652 \\ \times \quad 3 \\ \hline 1956 \\ \hline \end{array}$$

1

$$\begin{array}{r} 85.64 \\ \times \qquad 4 \\ \hline 342.56 \\ \hline \end{array}$$

2 2 1

Multiplication

Year 6

- multiply one-digit numbers with up to 2 decimal places by whole numbers

$$
\begin{array}{rrcrr}
 & 2 & . & 5 & 2 \\
\times & & & 3 & 4 \\
\hline
1 & 0 & . & 0 & 8 \\
 & {\scriptstyle 2} & & & \\
7 & 5 & . & 6 & 0 \\
{\scriptstyle 1} & & & & \\
\hline
8 & 5 & . & 6 & 8 \\
\hline
\end{array}
$$

Multiplication

Long Multiplication

Expanded Method

$$
\begin{array}{r}
53 \\
\times\ 24 \\
\hline
12 \\
200 \\
60 \\
1000 \\
\hline
1272 \\
\hline
\end{array}
$$

Compact Method

$$
\begin{array}{r}
53 \\
\times\ 24 \\
\hline
212 \\
{\scriptstyle 1} \\
1060 \\
\hline
1272 \\
\hline
\end{array}
$$

Multiplication

* 54 x 23

** 7564 x 14

Year 6:

*** 75.64 x 14

Multiplication

54
x 23
12
150
80
1000
1242
1

54
x 23
162
1
1080
1242
1

Multiplication

Year 6:

$$
\begin{array}{lr}
 & 7564 \\
\times & 14 \\
\hline
 & 30256 \\
 & {\scriptstyle 2\ \ 2\ \ \ 1\ \ } \\
 & 75640 \\
\hline
 & 105896 \\
\hline
\end{array}
\qquad\qquad
\begin{array}{lr}
 & 75.64 \\
\times & 14 \\
\hline
 & 302.56 \\
 & {\scriptstyle 2\ \ 2\ \ \ \ 1\ \ } \\
 & 756.40 \\
\hline
 & 1058.96 \\
\hline
\end{array}
$$

Division

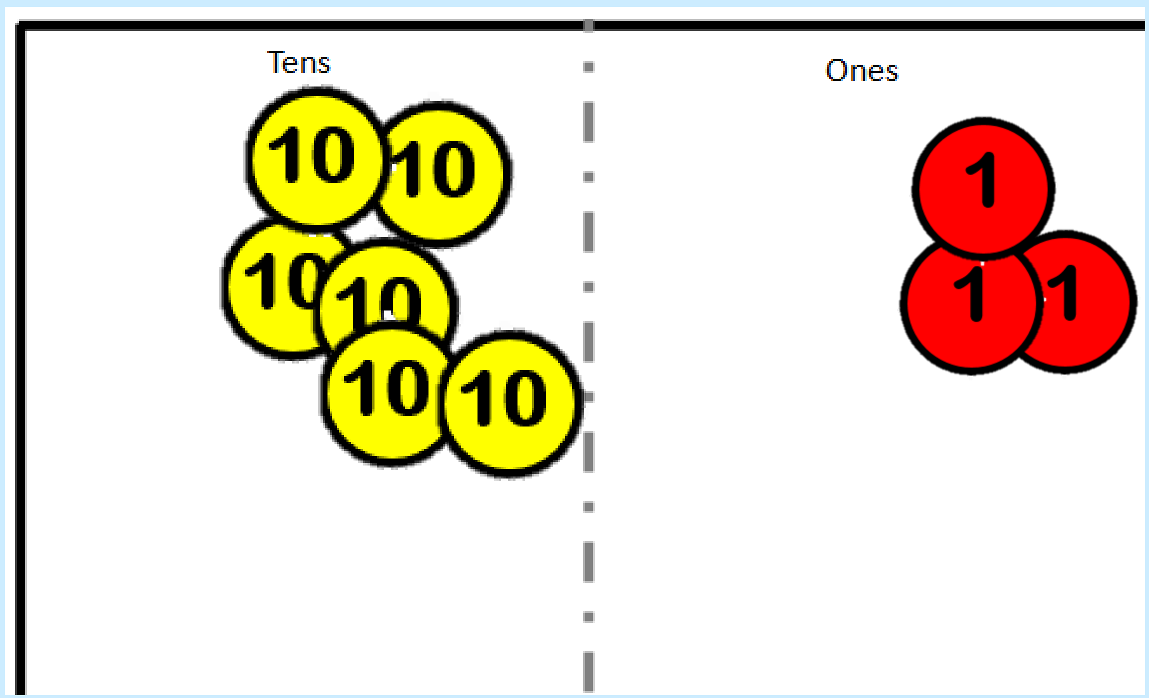
Year 3

63 ÷ 3

$$\begin{array}{r|rr} & 2 & 1 \\ \hline 3 & 6 & 3 \end{array}$$

2 1

3



Division

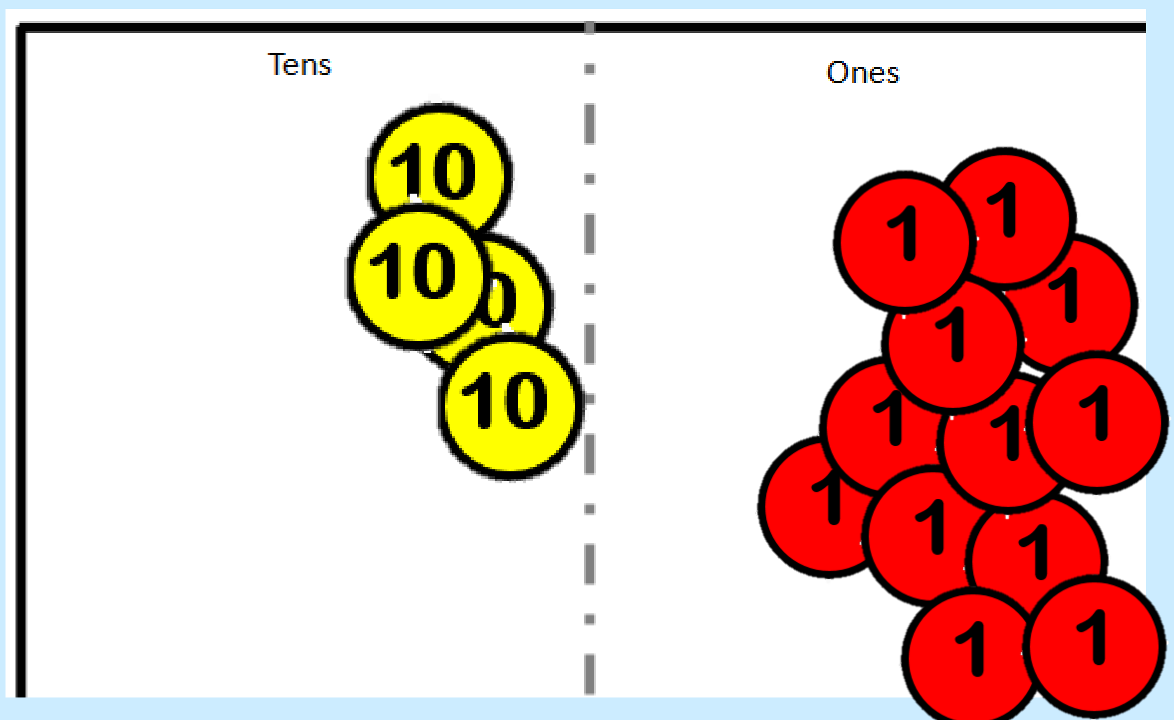
Year 3

$$\begin{array}{r|l} \multicolumn{2}{r}{1\;4} \\ \cline{2-2} 3 & {}^{3}\cancel{4}\;{}^{1}2 \end{array}$$

$42 \div 3$

1 4

3



Division

Year 5

$$\begin{array}{r} 0\ \ 8\ \ 6\ \ 4\ \ {}^{1}/_{5} \\ 5\,\overline{\big)\,4\ \ {}^{4}3\ \ {}^{3}2\ \ {}^{2}1} \end{array}$$

Working towards 4 digit ÷ 1 digit

including exchange and remainders <u>as fractions.</u>

Division

Year 6

- Divide numbers up to 4 digits ÷ **2 digit** using a formal written method of short division when appropriate

$$\begin{array}{r|l} & 0\ \ 4\ \ 5\ \ \text{r.}1 \\ \hline 1\ \ 1 & 4\ \ {}^{4}9\ \ {}^{5}6 \end{array}$$

or
(depending
on context)

$$\begin{array}{r|l} & 0\ \ 4\ \ 5\ \ {}^{1}/_{11} \\ \hline 1\ \ 1 & 4\ \ {}^{4}9\ \ {}^{5}6 \end{array}$$

Division

Year 6

- **Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division**

- **Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context**

1 5 | 4 2 0

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0		
		1	5	0	15	X 10

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- **Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division**

- **Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context**

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- **Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division**

- **Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context**

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10
		1	2	0		

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10
		1	2	0		
			7	5	15	X 5

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10
		1	2	0		
			7	5	15	X 5
			4	5		

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- **Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division**

- **Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context**

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10
		1	2	0		
			7	5	15	X 5
			4	5		
			4	5	15	X 3

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division

- Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context

1	5	4	2	0		
		1	5	0	15	X 10
		2	7	0		
		1	5	0	15	X 10
		1	2	0		
			7	5	15	X 5
			4	5		
			4	5	15	X 3
				0		

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Year 6

- **Divide numbers up to 4 digits ÷ 2 digit using a formal written method of long division**
- **Interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context**

		0	2	8	
1	5	4	2	0	
		1	5	0	15 X 10
		2	7	0	
		1	5	0	15 X 10
		1	2	0	
			7	5	15 X 5
			4	5	
			4	5	15 X 3
				0	

Box of Facts

1 x 15 = 15
2 x 15 = 30
5 x 15 = 75
10 x 15 = 150

Division

Box of Facts

1 x 32 = 32
2 x 32 = 64
10 x 32 = 320
5 x 32 = 160

Year 5

* 163 ÷ 3

** 8384 ÷ 4

Year 6

* 384 ÷ 32

$32 \overline{)384}$

(x 32)

(x 32)

Division

Year 5

$$\begin{array}{r} 054 \quad \text{r.}1 \\ 3\overline{)\,1\,{}^{1}6\,{}^{1}3} \end{array}$$

$54\frac{1}{3}$

$$\begin{array}{r} 2096 \\ 4\overline{)\,8\,{}^{3}3\,8\,{}^{2}4} \end{array}$$

Division

Year 6

384 ÷ 32

Box of Facts

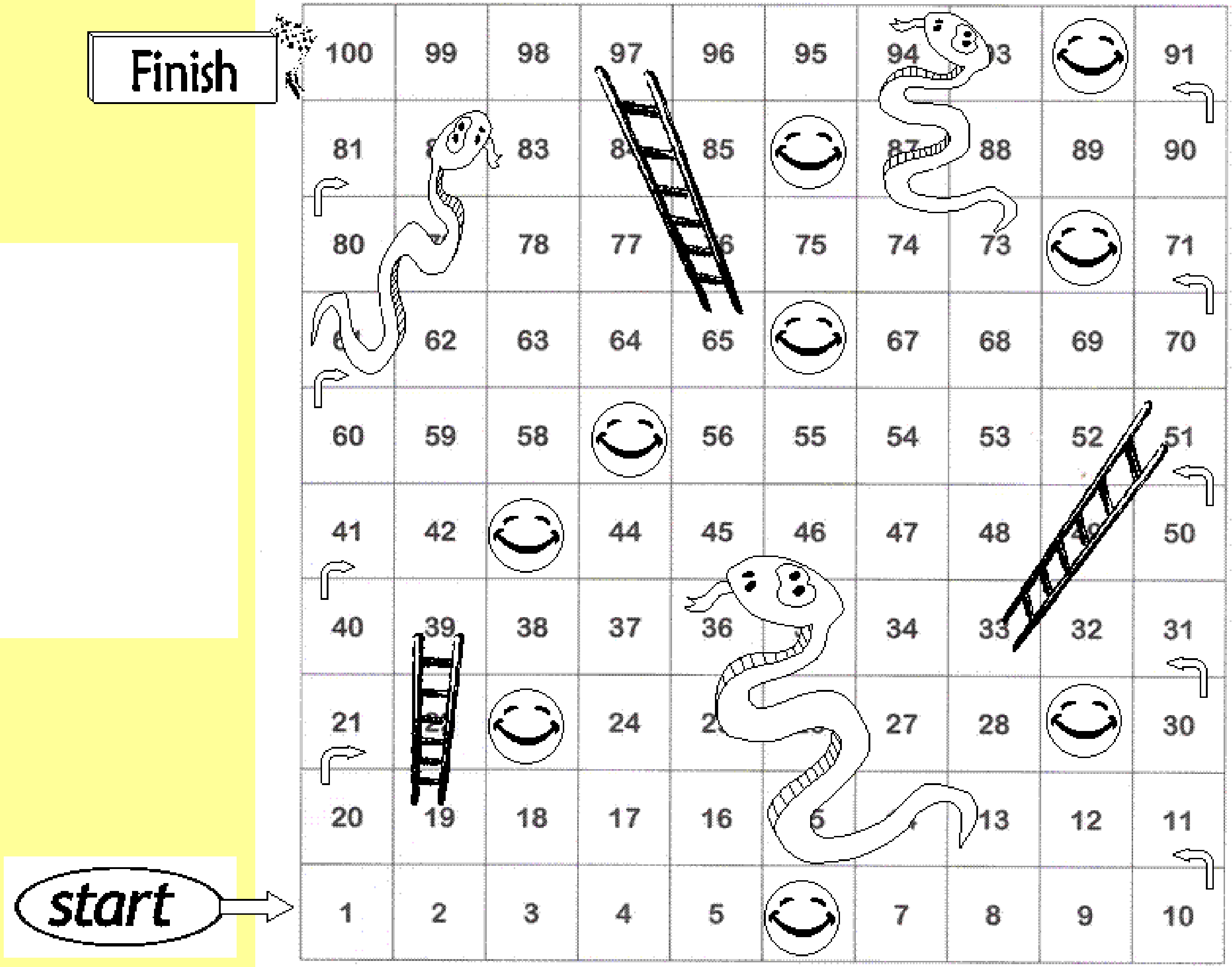
1 x 32 = 32
2 x 32 = 64
10 x 32 = 320
5 x 32 = 160

$$\begin{array}{r|l} & 12 \\ \hline 32 & 384 \\ & 320 \\ \cline{2-2} & 64 \\ & 64 \\ \cline{2-2} & 0 \end{array}$$

(10 x 32)

(2 x 32)

Snakes, ladders and smiley faces



Place your game cards here

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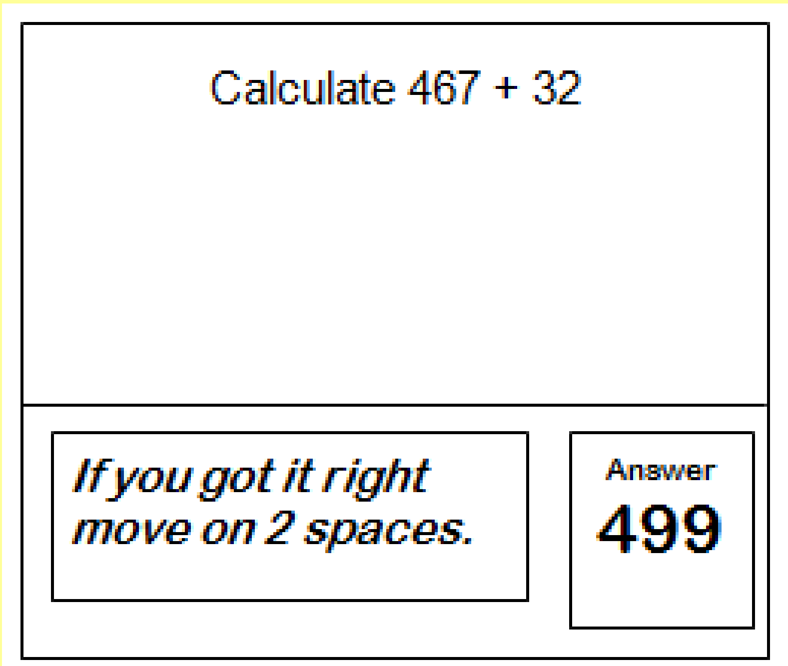

www.bgfl.org/virtualdice

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 4 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!

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