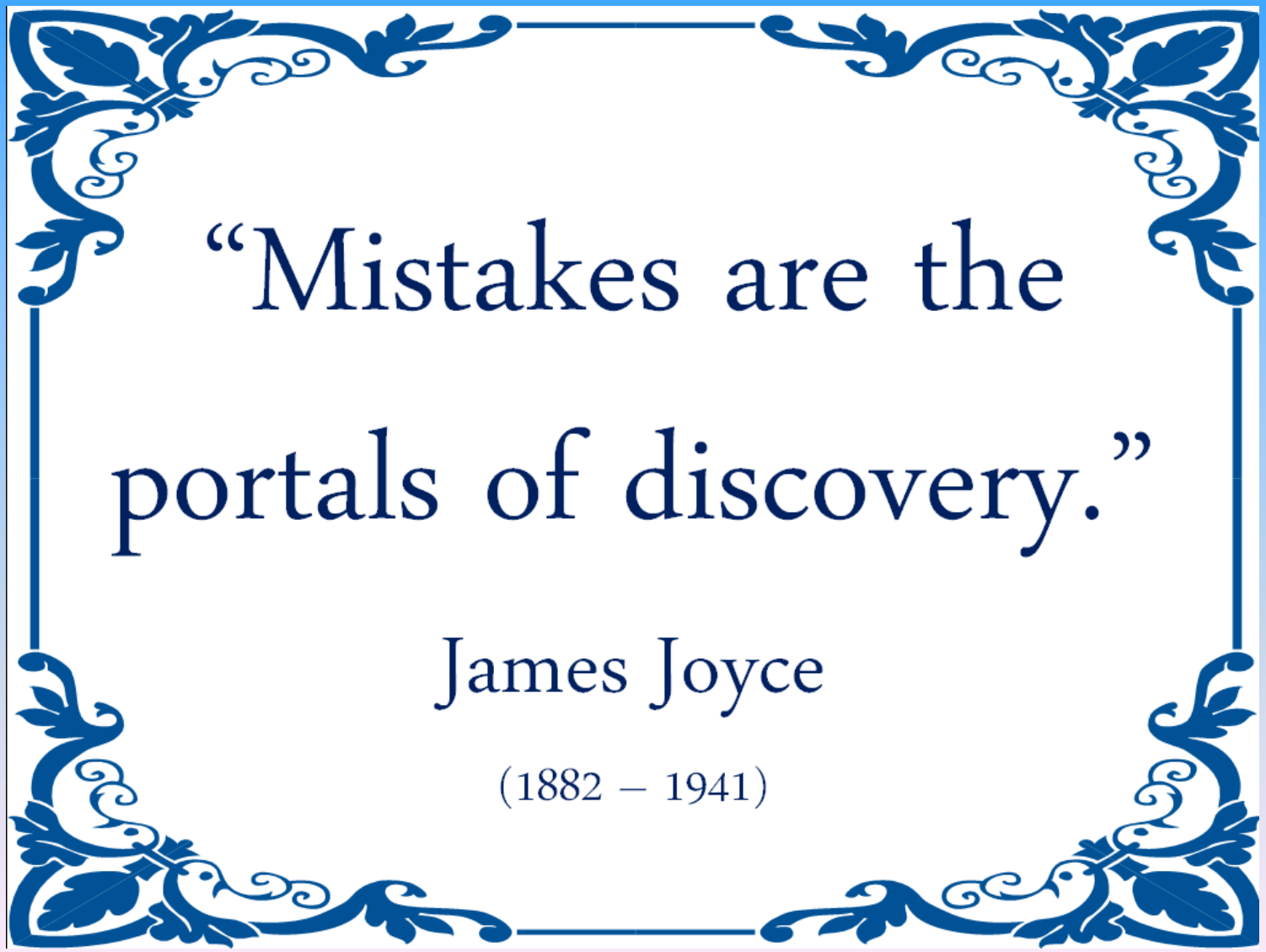
We Maths

Welcome to
the parent and carer session

Everything you ever wanted to know about times tables

The aims of this meeting

- Explain why multiplication table knowledge is important...
- How can your children learn them?
- Send you home with something useful
- Answer any questions you may have


"Mistakes are the portals of discovery."
James Joyce
(1882 – 1941)

However…

VS

National Centre for Excellence in the Teaching of Mathematics

"It is not the learning of times tables that is causing anxiety but rather it is lack of times table knowledge. It should be an educational entitlement that all children are helped to learn their times tables."

Charlie Stripp, director of the NCETM

'Last week, her call for Britain to stop testing young children on their ability to recite times tables – because it causes "crippling fear" and "puts them off maths" – prompted a backlash from fellow academics who believe the opposite. '

The Daily Telegraph 12.12.15

All pupils to sit new times table test as part of KS2 Sats

Pupils will expected to know all tables up to 12x12, with the skill measured using an "on-screen check" examination ... being rolled out across English primaries in 2017... But [Prof. Jo Boaler] said the message of timed tests was that being able to memorise things quickly was the same thing as being good at maths.

tes

3.1.16

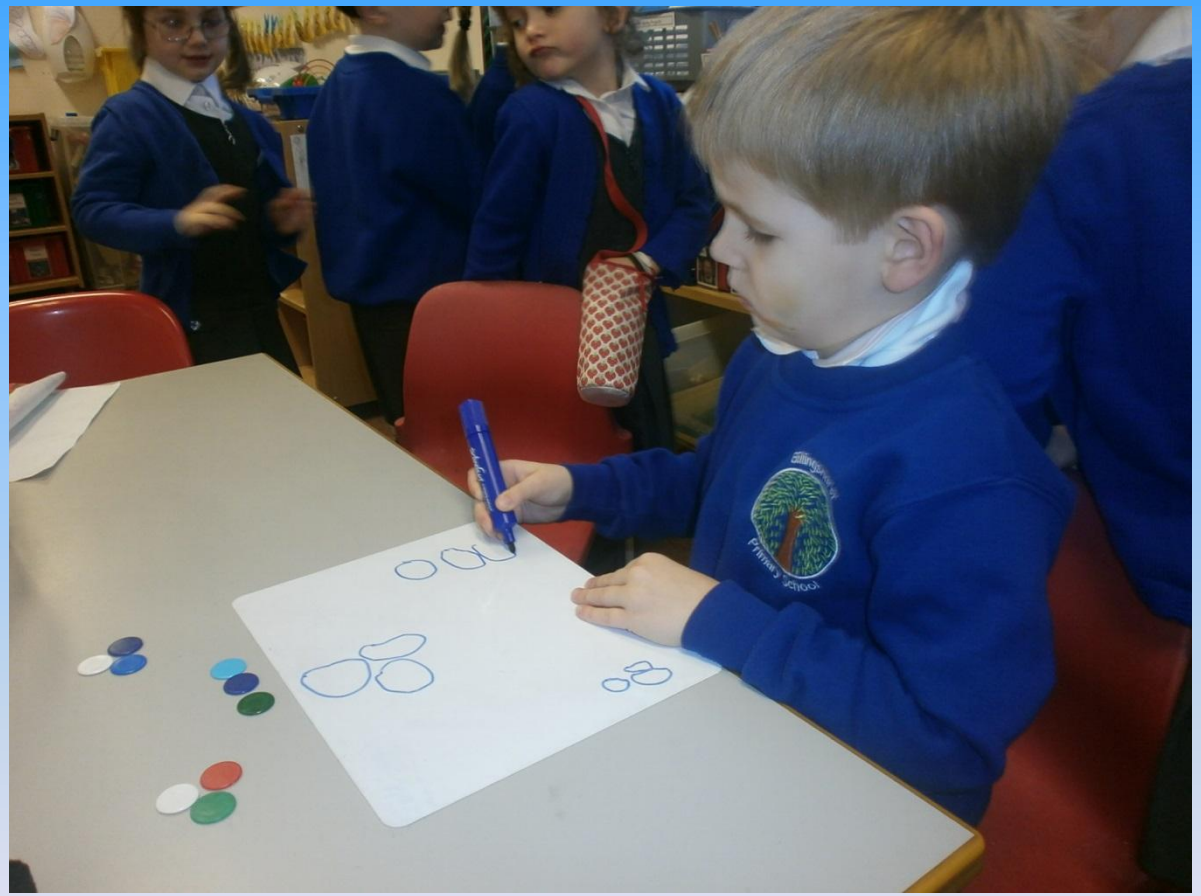
What is multiplication?

X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

It's not just a multiplication grid. There is a lot that must come first.

Early multiplication

The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Drawing pictures, for example:



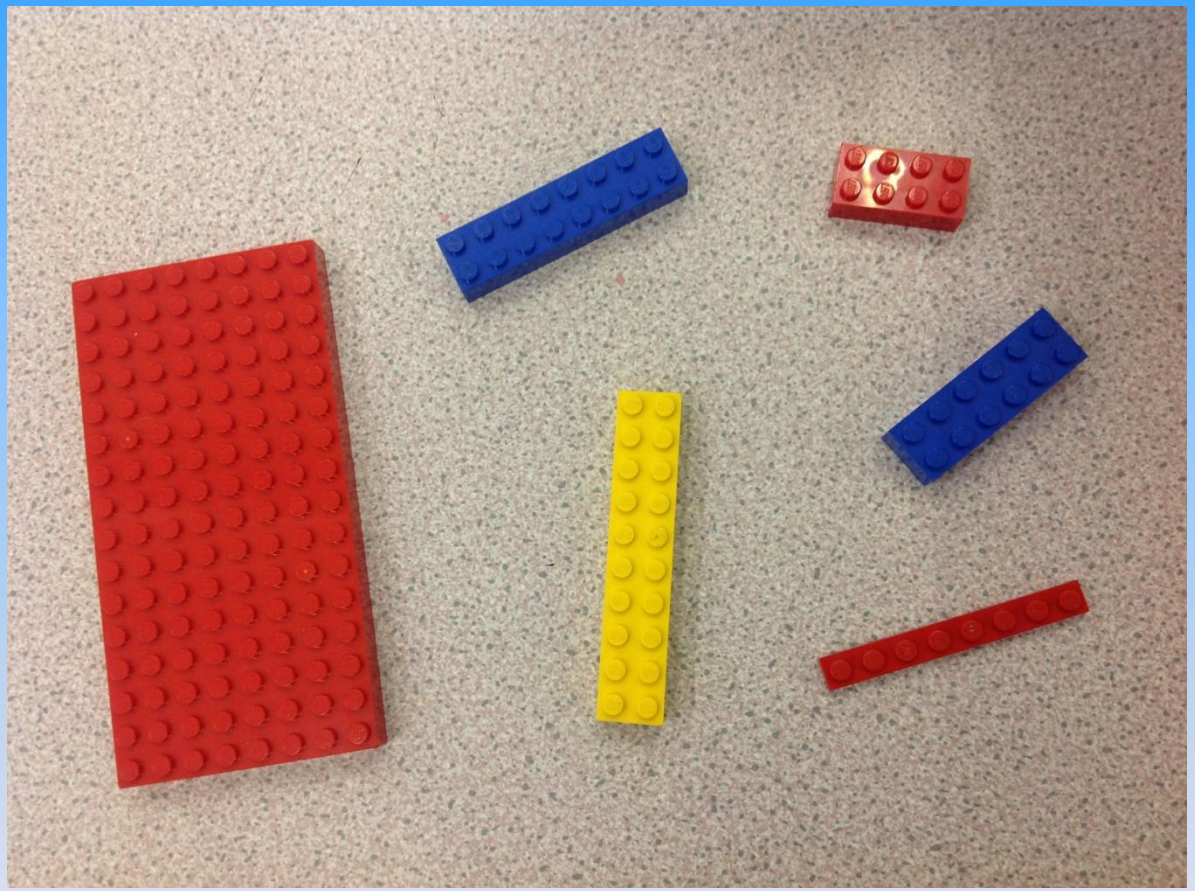
Drawing equal groups of objects.
In this case, 3 lots of 3 = 9.

Early multiplication

The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Practical activities, for example lining up in pairs:

Early multiplication

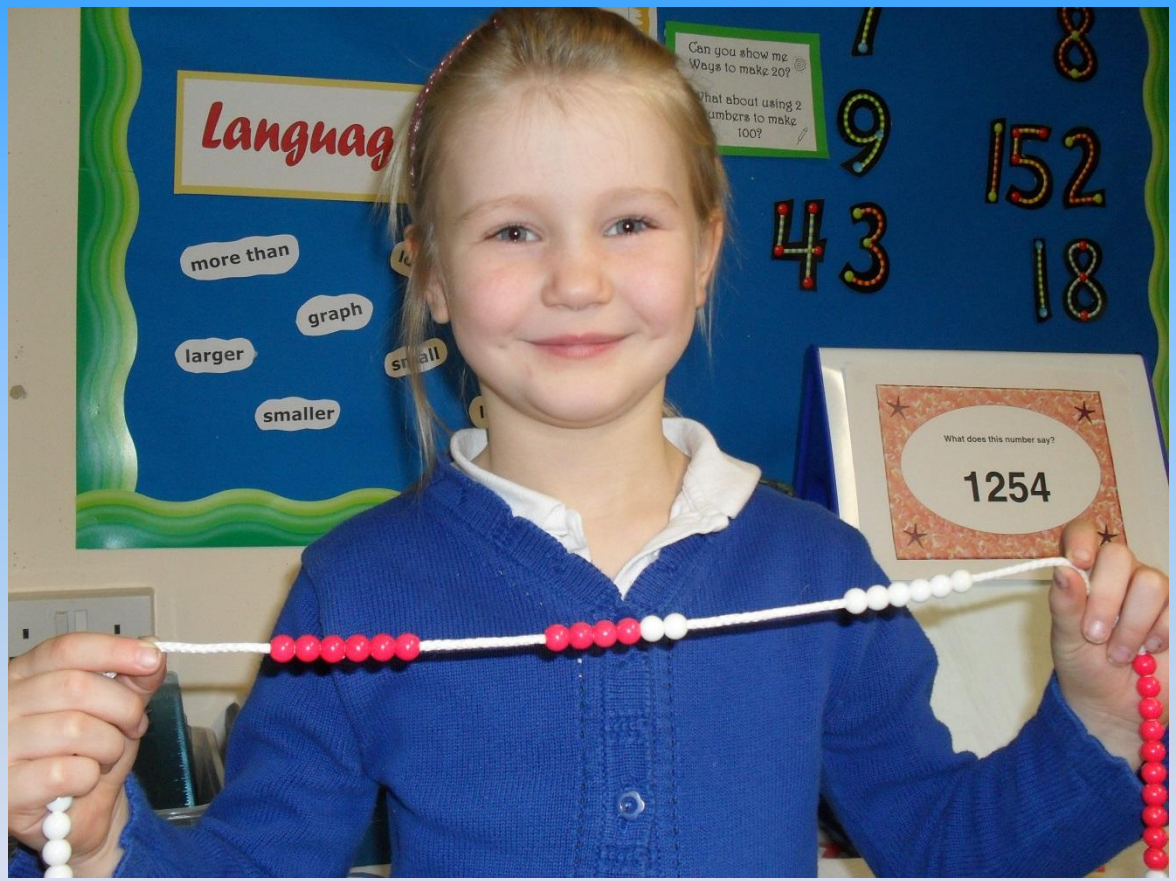
The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Practical problem solving, for example:



Lego features multiplication in the number of studs on each brick .

Early multiplication

The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Using resources, such as a bead string:



In this example, showing three lots of six, or, 3 x 6 = 18

Early multiplication

The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Using resources, such as a number line:  In this example, showing three lots of six, or, 3 x 6 = 18

Early Multiplication – REPEATED ADDITION

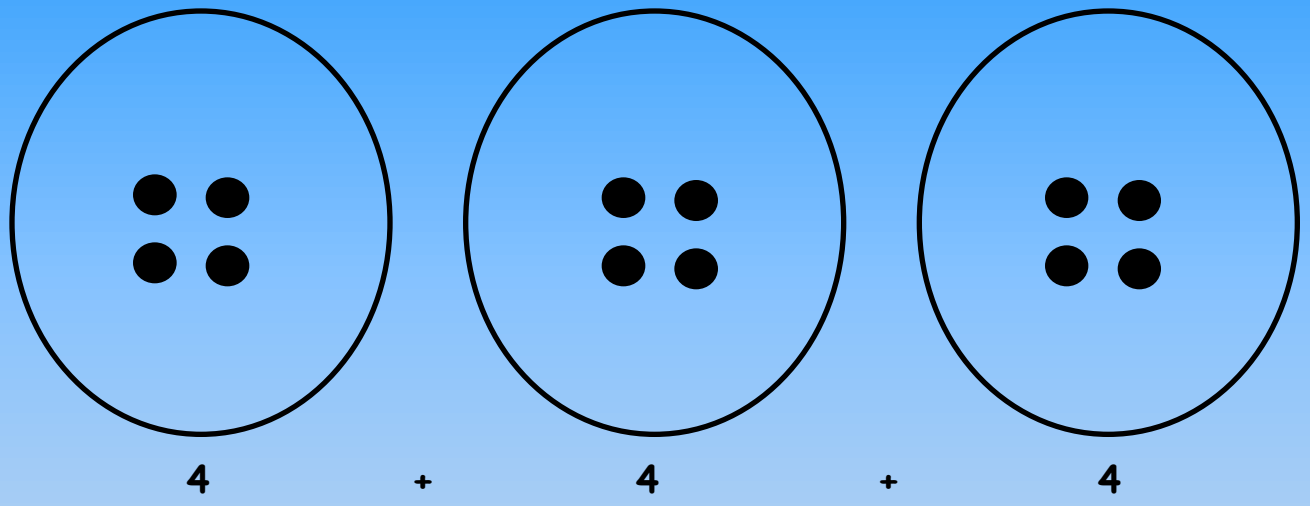
Underpinning ideas	Written methods

The children will already understand the ideas behind addition.

They will use this knowledge to help them, identifying that multiplication is adding the same number on again and again – repeated addition.

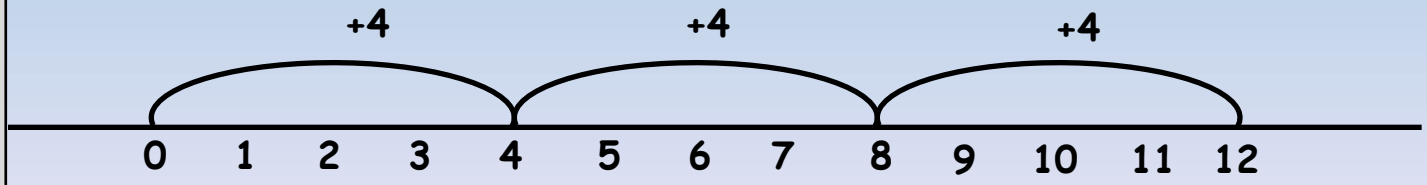
The children will use jottings and diagrams.

For example, 3 x 4



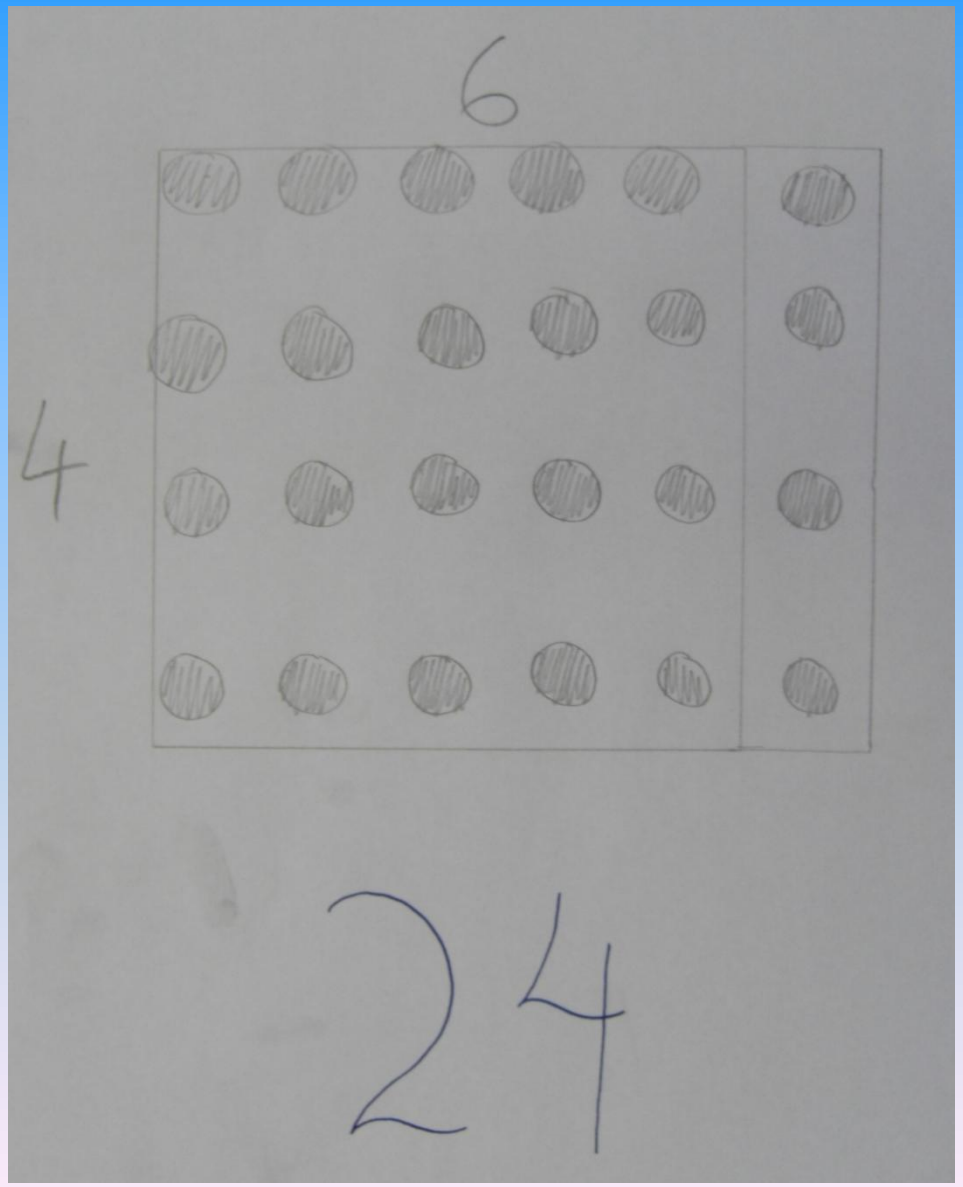
3 x 4 is 4 + 4 + 4 = 12 or 3 lots of 4 or 4 x 3

This can be shown on a number line:

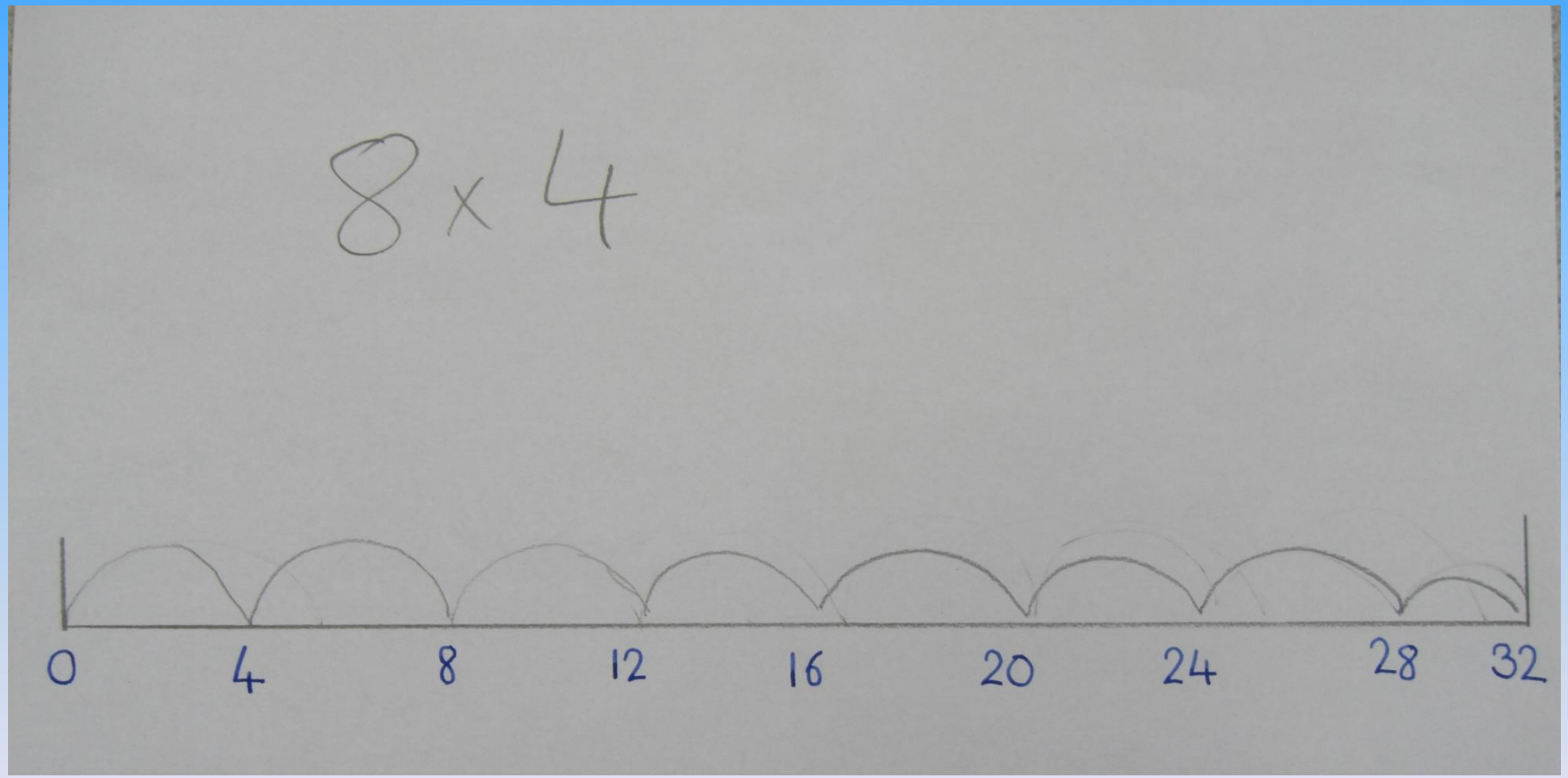


Or a bead string:

Array



Number line



As ever, it's all about...

conceptual understanding

Which tables? By when?

Year 2 – recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables

Year 3 – recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables

Year 4 – recall multiplication and division facts for multiplication tables up to 12 × 12 (6s, 7s, 9s, 11s, 12s)

Years 5 & 6 – be able to apply these facts to help you work out other problems.
For example, if you know 56 ÷ 8 = 7 then this can help you work out the answer to 0.56 ÷ 8

And…well, how?

GAMES!

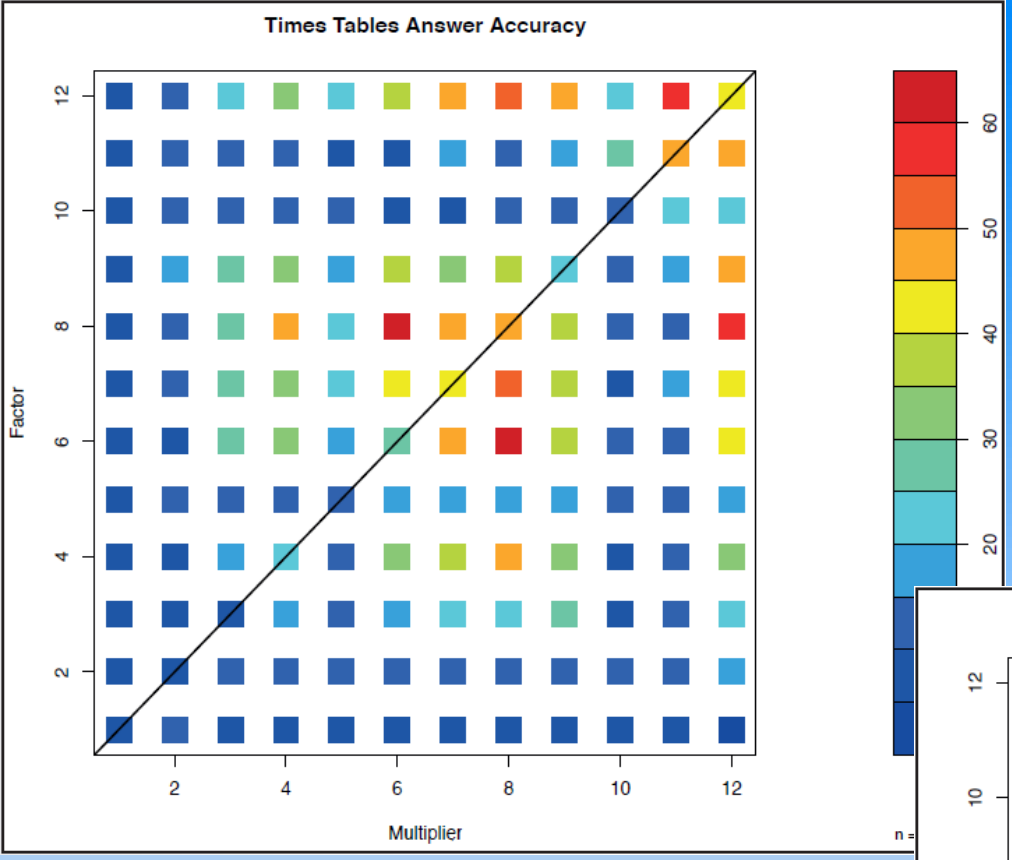
Strategies for learning

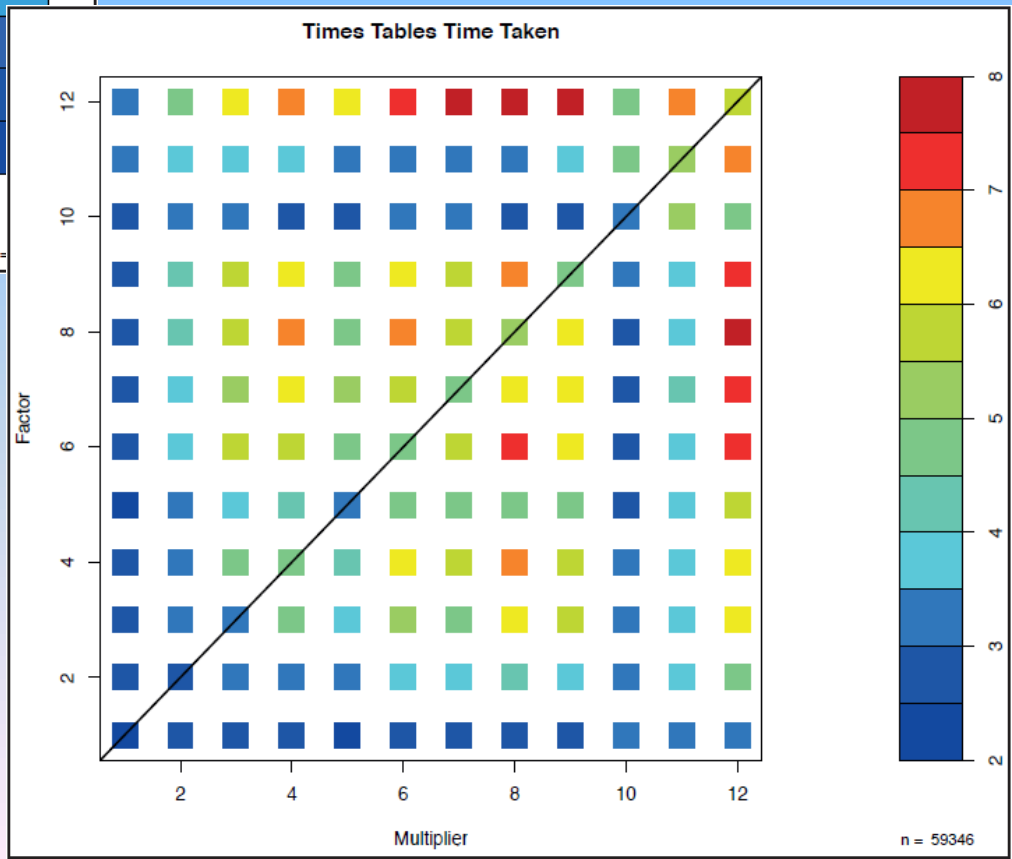
- Whole number sentence
- Out of order
- Tricks
- Using what you already know
- Mental flexibility
- Songs, raps, rhymes
- **Securing the insecure facts**

21 facts...

3 times table	4 times table	6 times table	7 times table	8 times table	9 times table
3 x 3 = 9	4 x 4 = 16	6 x 6 = 36	7 x 7 = 49	8 x 8 = 64	9 x 9 = 81
3 x 4 = 12	4 x 6 = 24	6 x 7 = 42	7 x 8 = 56	8 x 9 = 72	
3 x 6 = 18	4 x 7 = 28	6 x 8 = 48	7 x 9 = 63		
3 x 7 = 21	4 x 8 = 32	6 x 9 = 54			
3 x 8 = 24	4 x 9 = 36				
3 x 9 = 27					

But don't forget x11 and x12 facts...





'Why is 48 so hard to remember?'
Mike J Smith, Sue Teague
ATM July 2014

And when you've got them to 12 x 12?

If you know

$56 \div 8 = 7$

then this can help you work out the answer to

$0.56 \div 8$

$5.6 \div 0.8$

$560 \div 0.08$

And when you've got them to 12 x 12?

$$48 \div \square = 8$$

$$\square \div 11 = 12$$

Other resources to access

www.mymaths.co.uk

www.sumdog.co.uk

www.transum.com/Tables/Times_Tables.asp

www.mathsisfun.com/numbers/math-trainer-multiply.html