We ♥ Maths

Welcome to
The Parent's Lesson

Multiplication

The aims of this meeting

- How we feel about maths

- Multiplication
  - Multiplication in EYFS / Key Stage 1
  - Written methods in Key Stage 2
  - Very practical

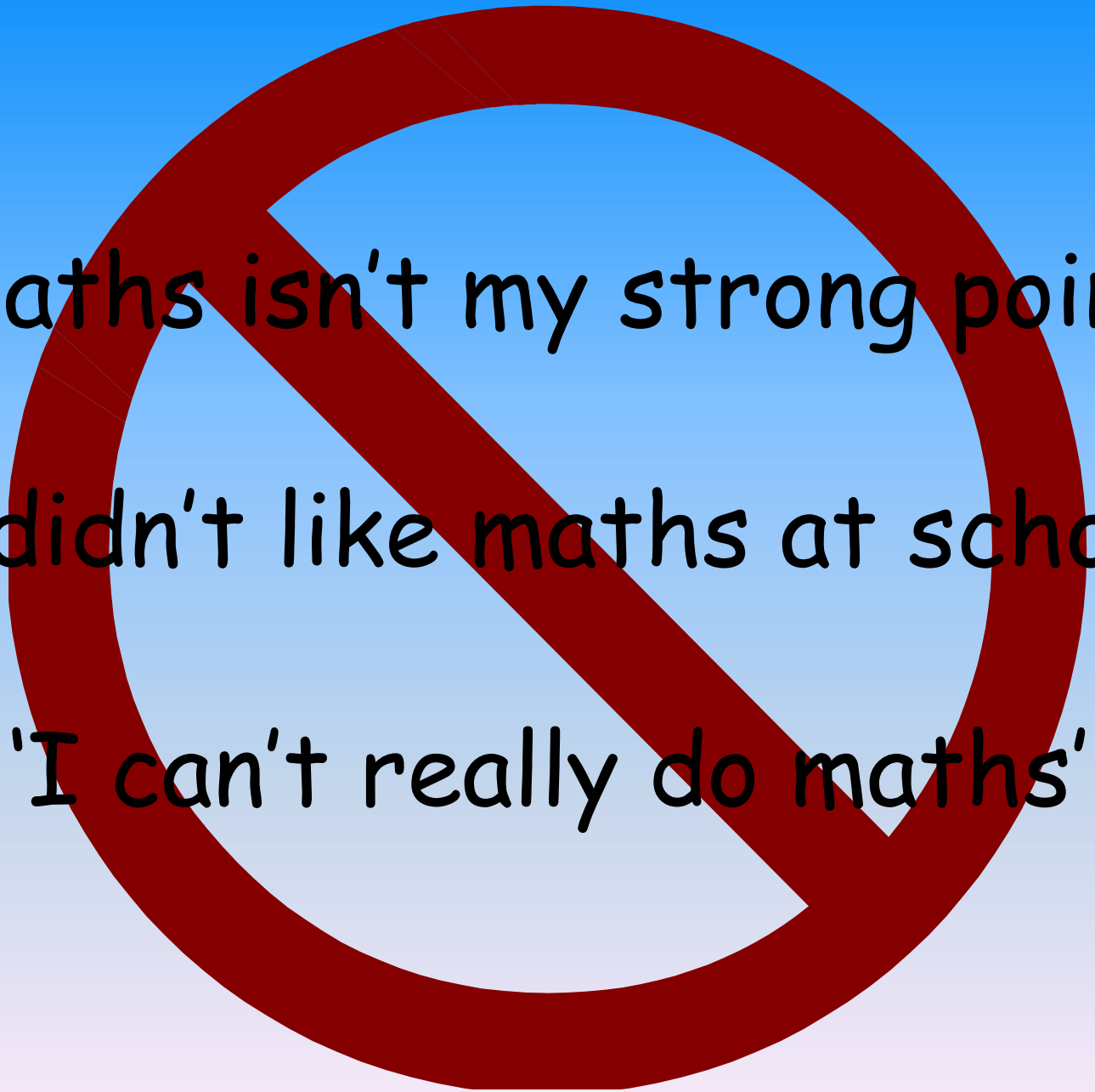
- What's happening in the classroom
  - A chance for you to flex your mental muscles!

How do you feel about maths?

'Maths isn't my strong point'

'I didn't like maths at school'

'I can't really do maths'



'Maths isn't my strong point'

'I didn't like maths at school'

'I can't really do maths'

Billingshurst Primary School

Adults face mathematical challenges 14 times a day on average - learndirect

Parents who say 'I can't do maths' are harming pupils and Britain's economic prospects, minister warns

Parents who say 'I can't do maths' are harming their children and Britain's long-term economic prospects, the schools minister warned yesterday.

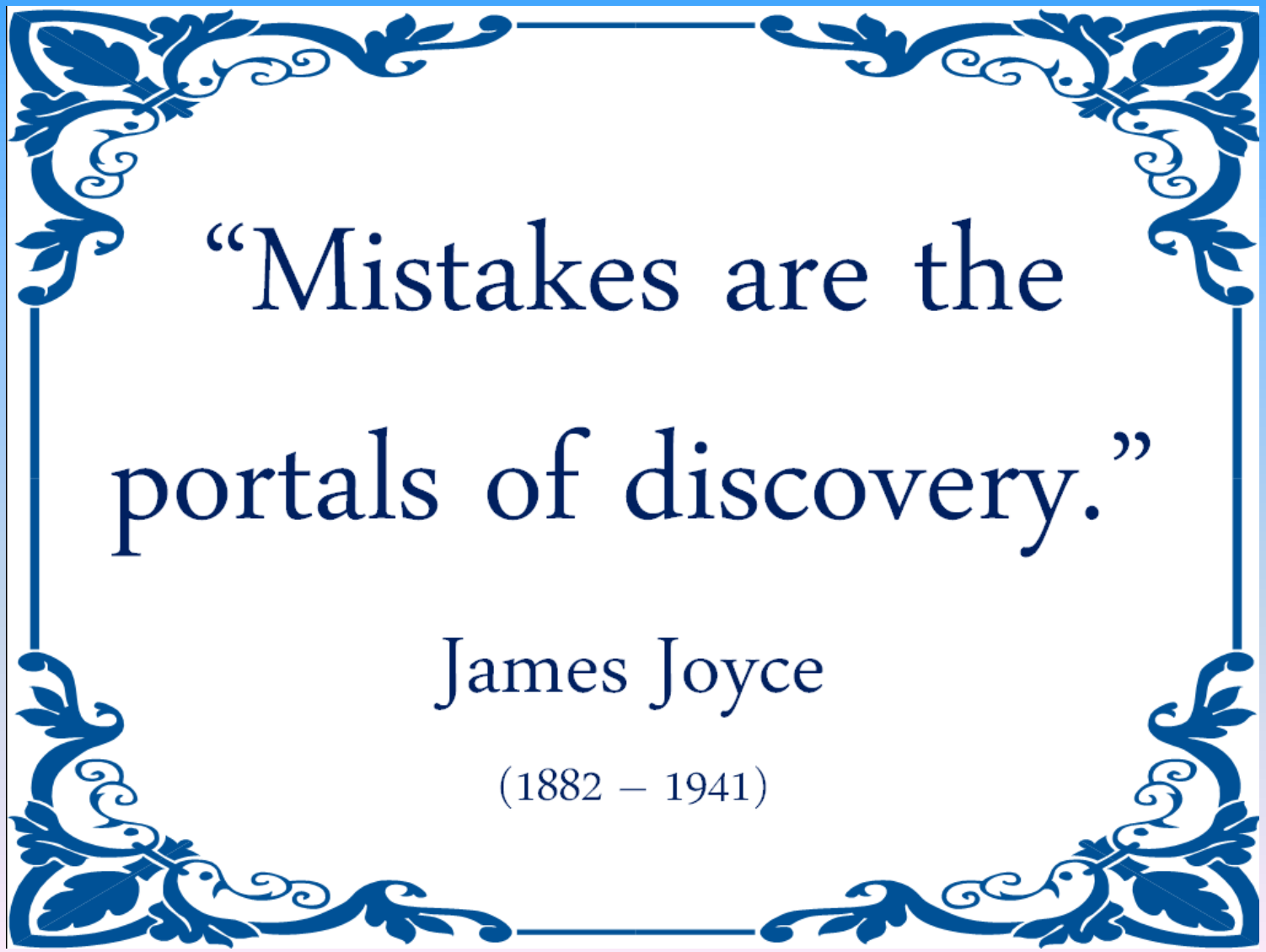
Elizabeth Truss said that a damaging 'anti-maths culture' must be reversed to stop the country and our students slipping further and further behind international rivals.

She condemned adults who 'chuckle at their own ineptitude' at basic arithmetic, claiming they are giving their children a 'dangerous' message that maths is unimportant.

‘I can’t do this’

'I can't do this

...YET!'


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

What is multiplication?

Multiplication is repeated addition

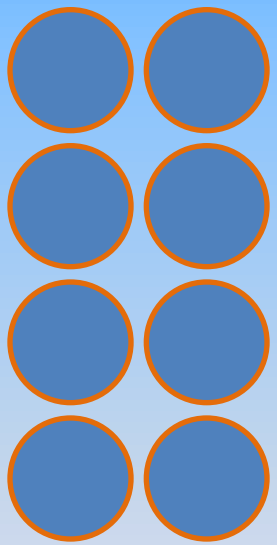
Multiplication is repeated addition

4×2

Multiplication is repeated addition

2

4

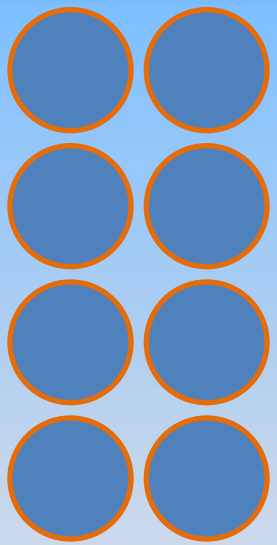


4 x 2

Multiplication is repeated addition

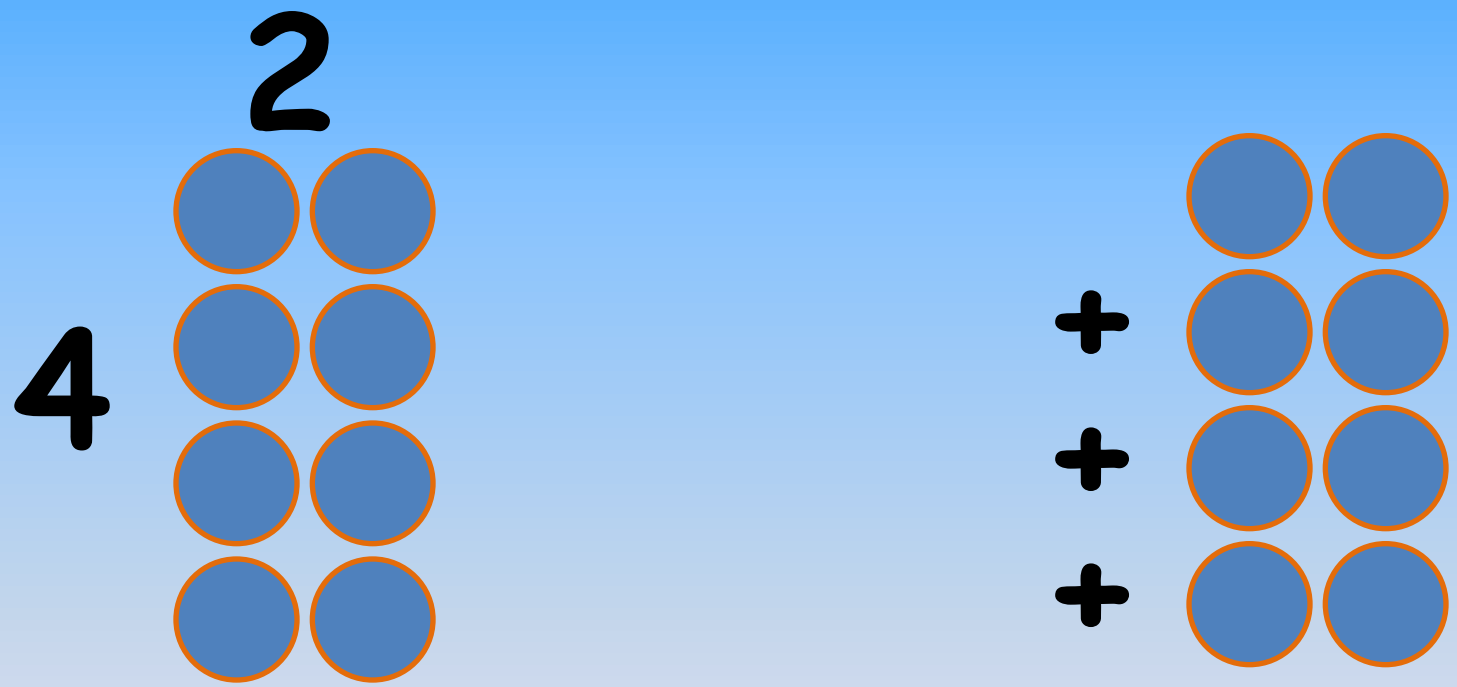
2

4



4 lots of 2

Multiplication is repeated addition



4 x 2 = 2 + 2 + 2 + 2

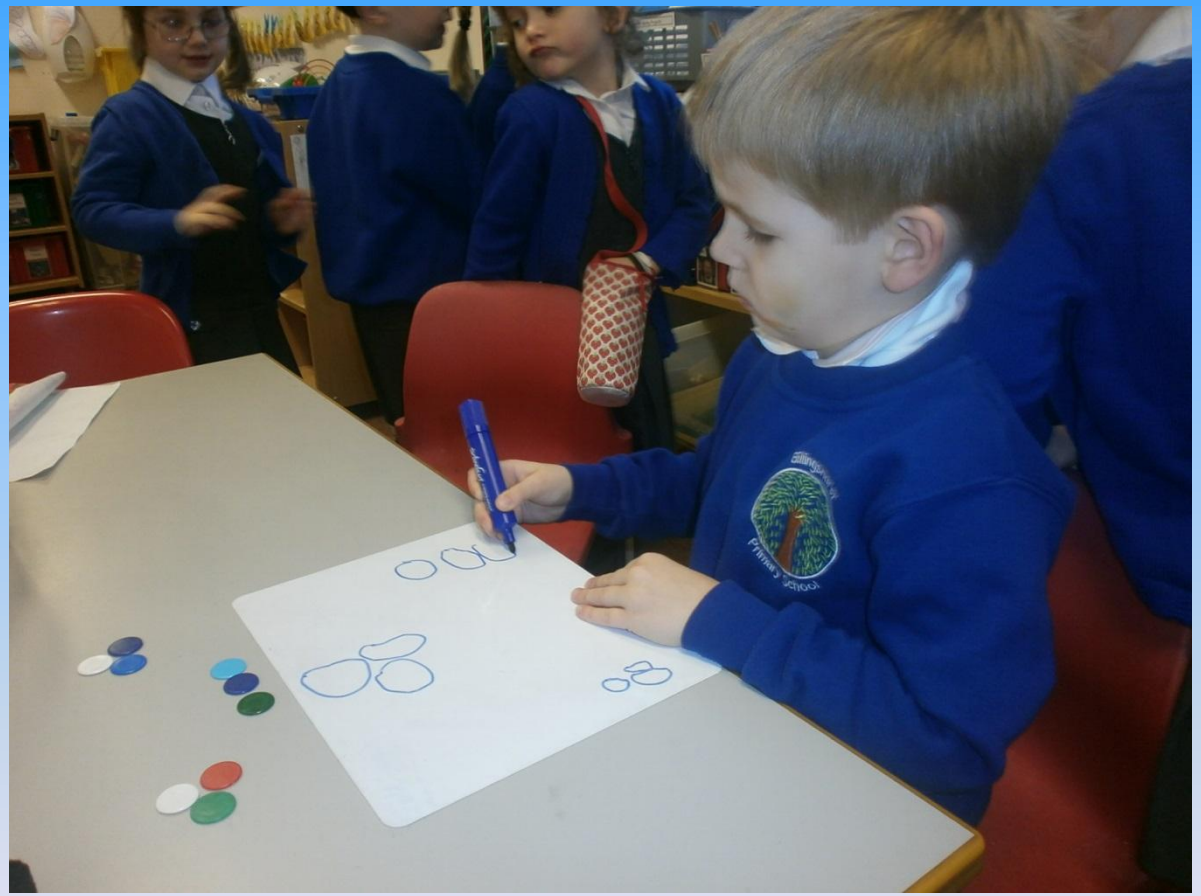
4 lots of 2

But the problem is, for example...

472 X 53

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:



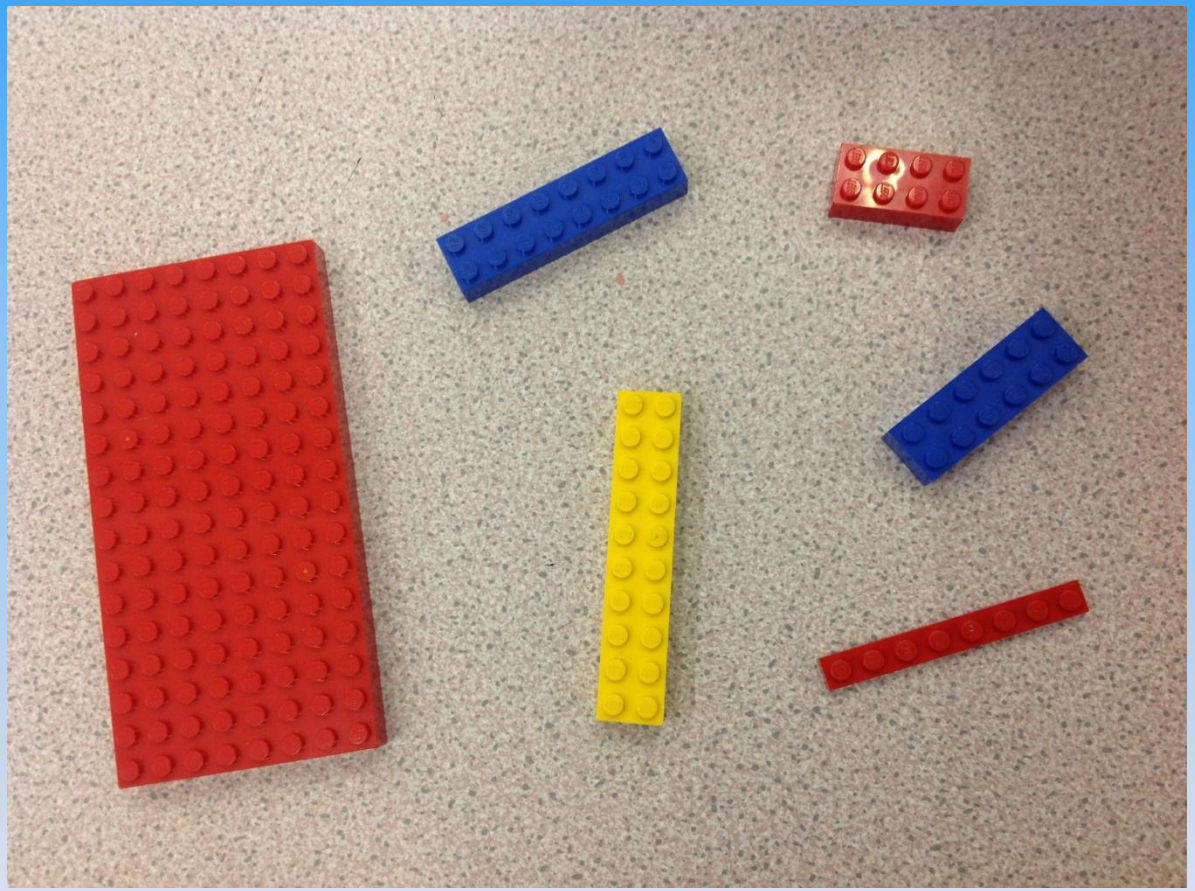
Drawing equal groups of objects.
In this case, 3 lots of 3 = 9.

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

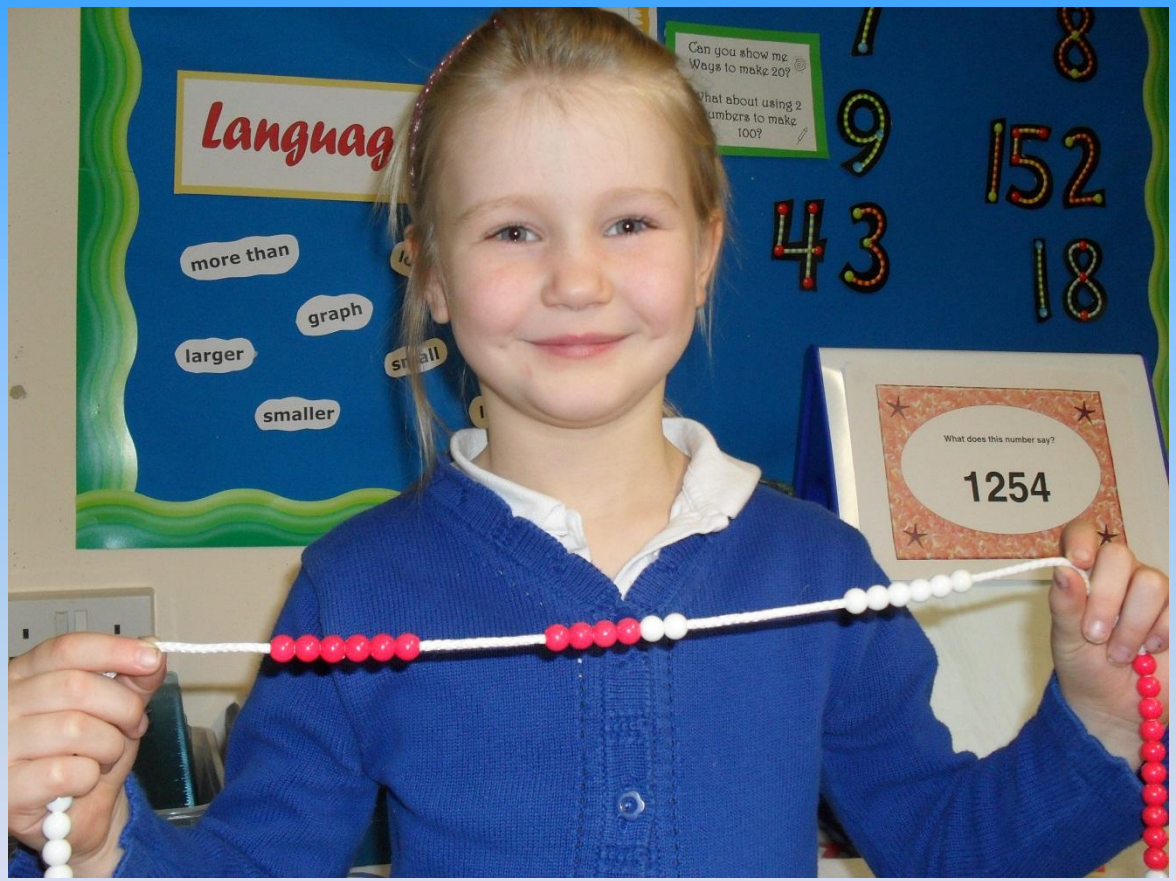
The Language of Multiplication	Methods
X Lots of Groups of Times Multiply Once, twice, three times… ten times… ….times as big, long, wide… and so on Repeated addition Double Pairs How many in each group? How many altogether?	Practical problem solving, for example:



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

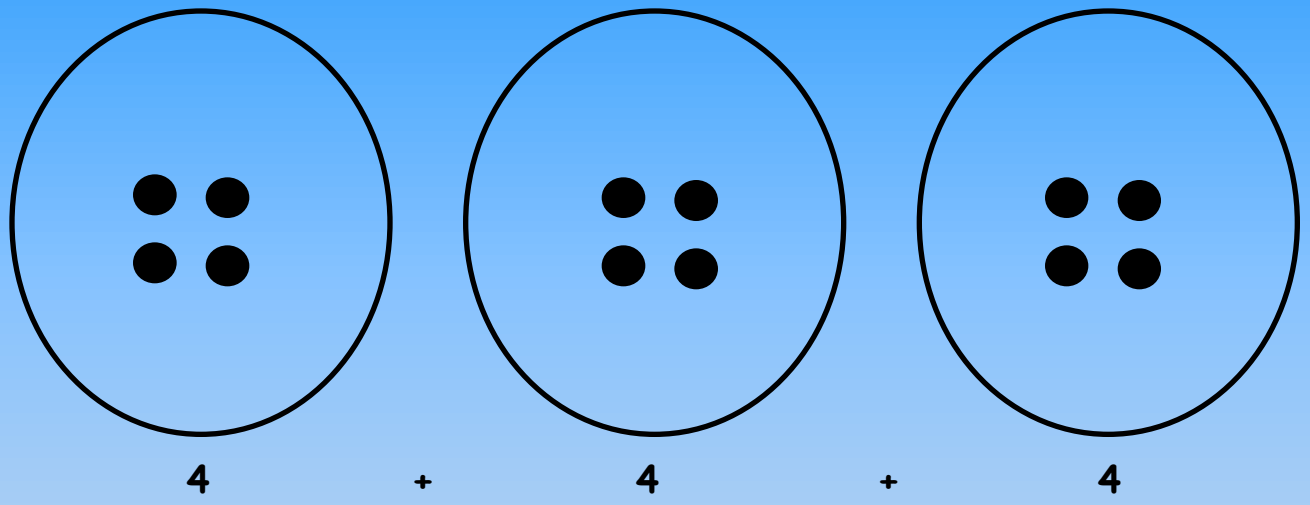
Underpinning ideas	Written methods

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.

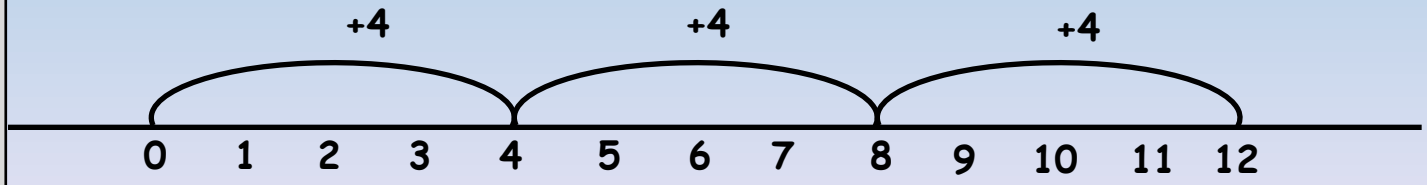
The children will use jottings and diagrams.

For example, 3 x 4



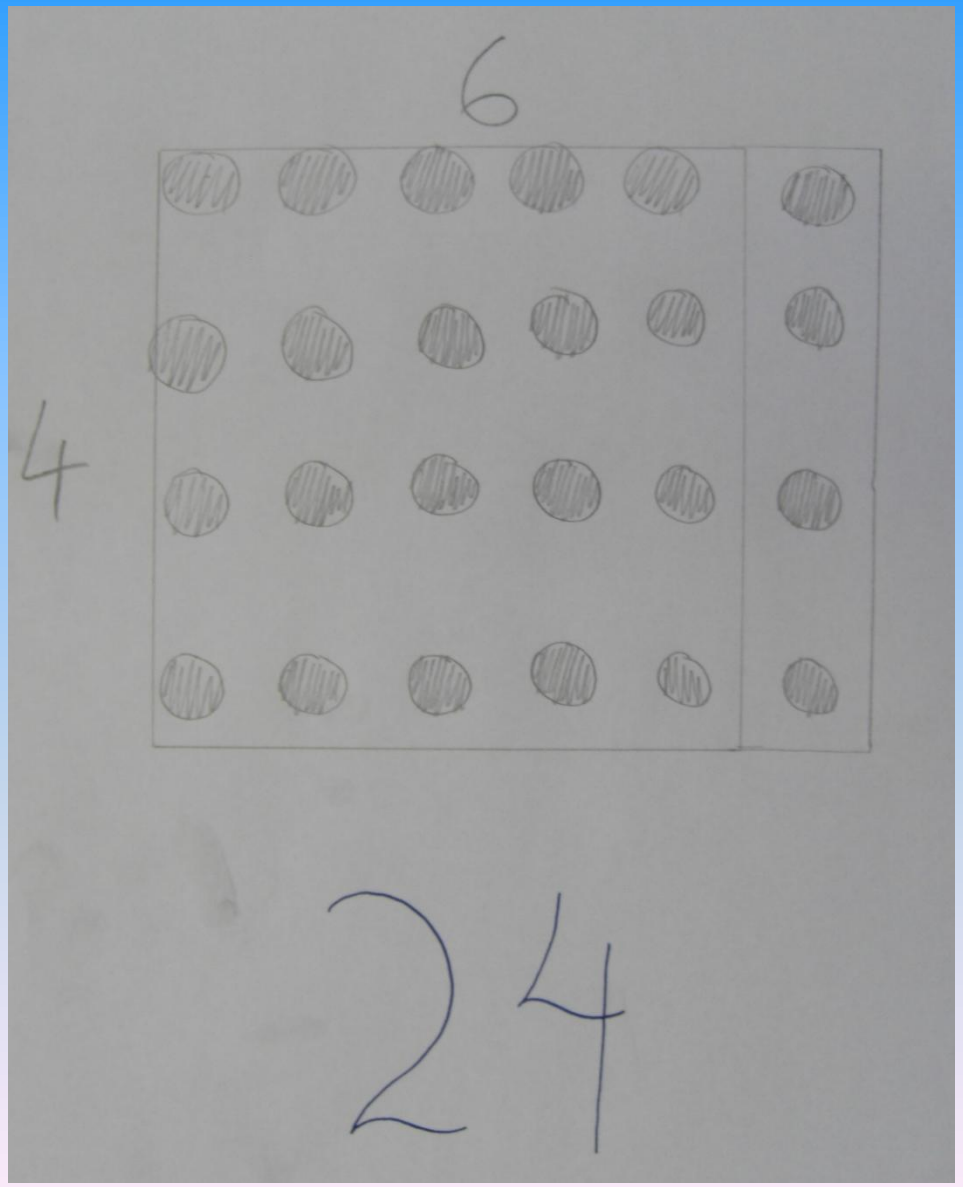
3 x 4 is 4 + 4 + 4 = 12 or 3 lots of 4 or 4 x 3

This can be shown on a number line:

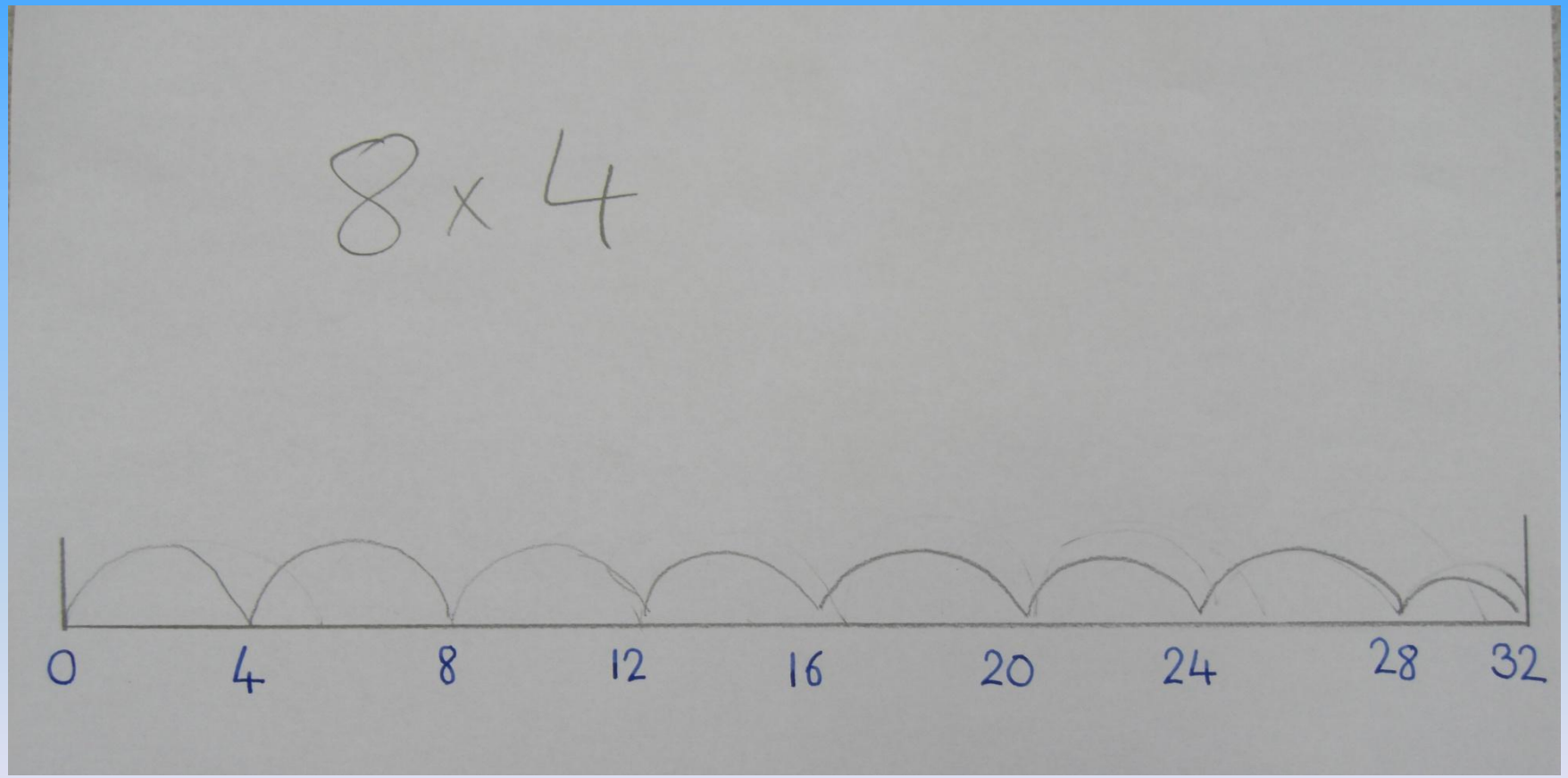


Or a bead string:

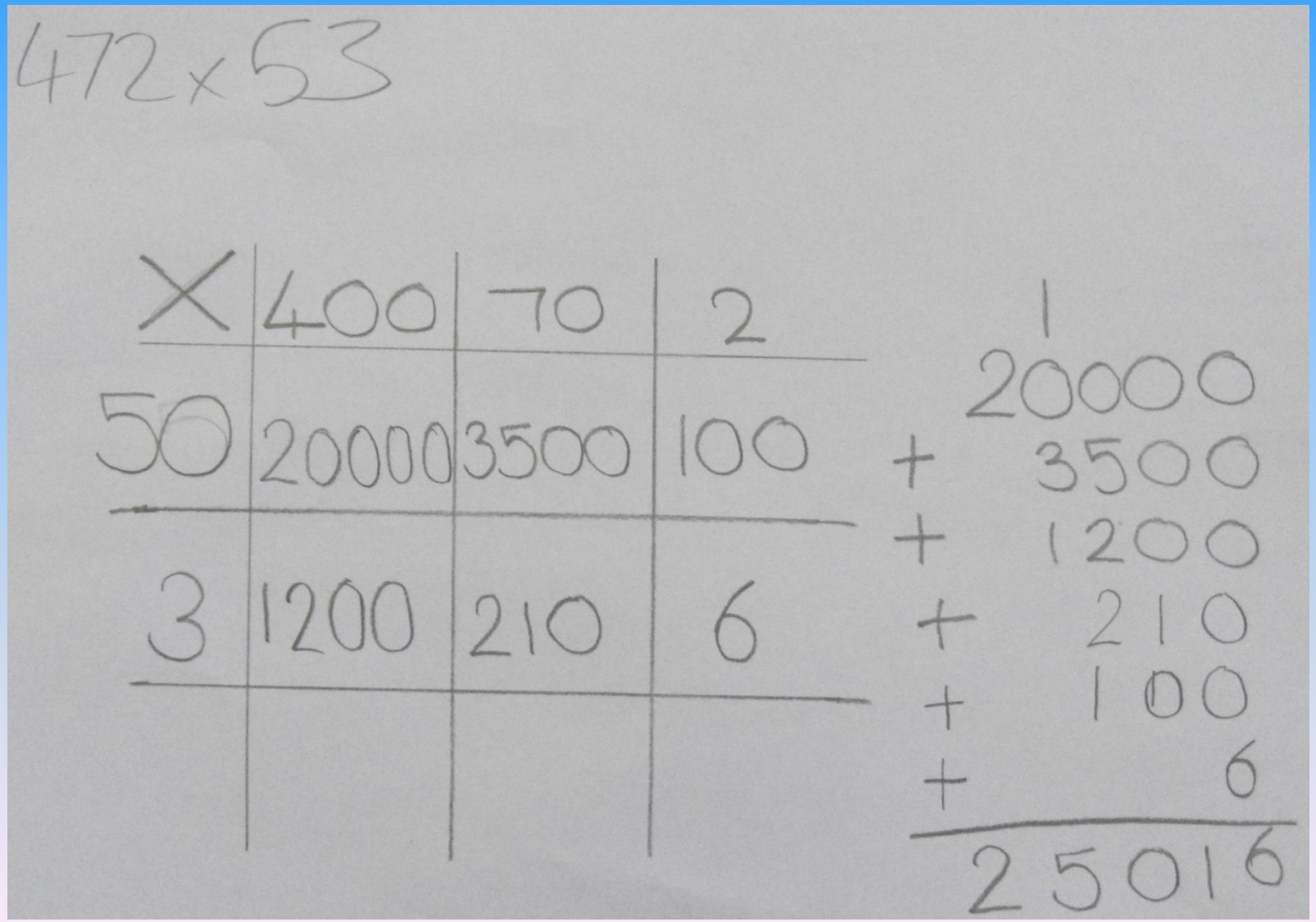
Array



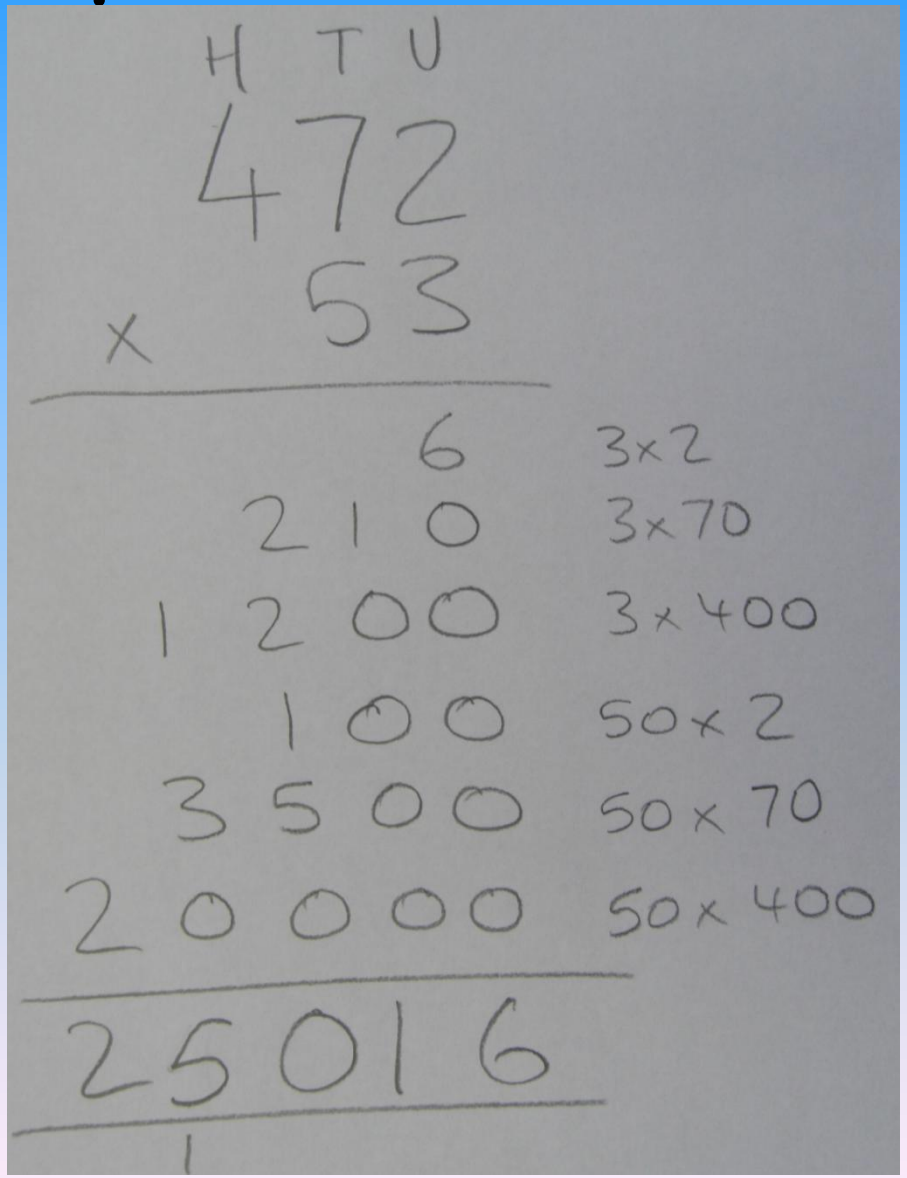
Number line



Grid method


472 x 53
X | 400 | 70 | 2
50 | 20000 | 3500 | 100
3 | 1200 | 210 | 6
1
20000
+ 3500
+ 1200
+ 210
+ 100
+ 6
25016

Long multiplication



We are going to focus on

- Grid Method

But before that…

- Place Value

But before that…

- Place Value

M	100 Th	10 Th	Th	H	T	U	●	t	h	th

Key skill for grid method

- Multiplying by 10, 100 and 1000
- Dividing by 10, 100 and 1000

Key skill for grid method

- Multiplying /Dividing by 10, 100 and 1000

M	100 Th	10 Th	Th	H	T	U	●	t	h	th

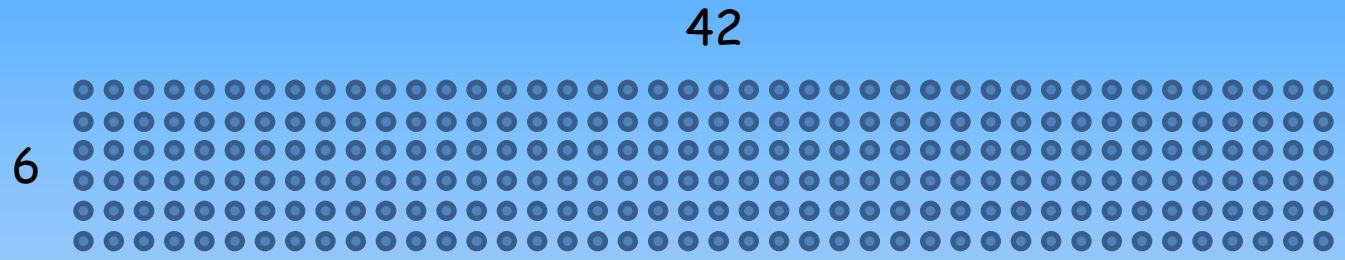
Key skill for grid method

- Partitioning

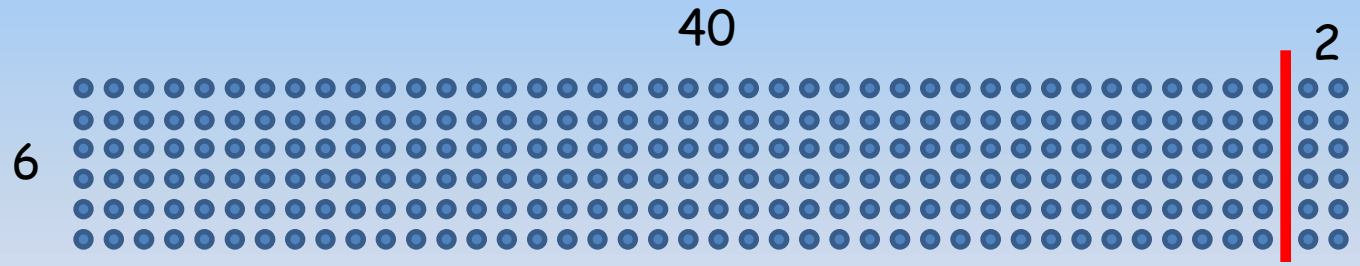
Key skill for grid method

- Partioning

Consider 42 x 6
If this was set out as an array you would get:



Essentially 42 lots of 6.
However, you could also think of this as:



Now we have 40 lots of 6 and 2 lots of 6. We have partitioned 42 lots in to 40 lots and 2 lots.

This will help us to calculate the answer using grid method, by completing the grid and replacing the dots with numbers.

Grid method

And now, the moment you've all been waiting for!

In class...

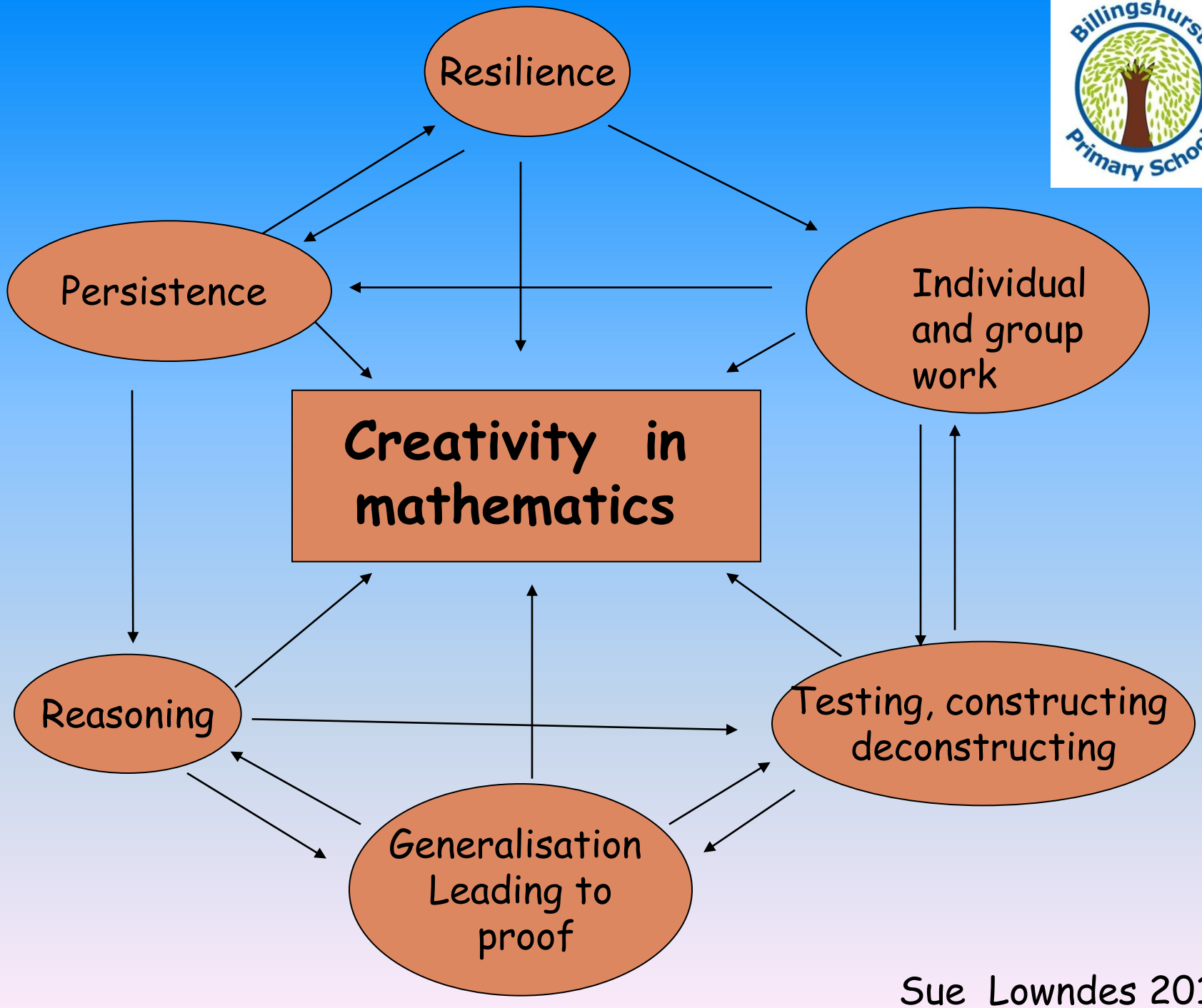
- The chance to learn and practise mathematical skills

In class...

- The chance to learn and practise mathematical skills
- Context
- Real life
- The children should ask – 'Why?'

Maths is about...

- Deep inquiry
- Pattern spotting
- Making connections
- Communicating
- Looking for generalisations



Sue Lowndes 2010

Problem solving

The Dice Train

RULE 1: Faces that touch each other have the same number.
So, underneath the white dice is a 3 touching a 3 on the blue dice.
The blue dice has a 6 on the face that touches the 6 on the middle blue dice.
The middle blue dice has a 1 that touches the 1 on the last dice.
RULE 2: The number on the top of the funnel must equal the total of the numbers showing on top of the remaining dice (carriages).

How many solutions can you find?

Any questions?

Thank you for coming!