



# Welcome to the Mathemagician Morning

## Multiplication

# Plan of the Morning

9:05 - 9:40 Sharing methods of Multiplication in the hall

9:40 - 10:20 - Spending time in class with a range of multiplication activities

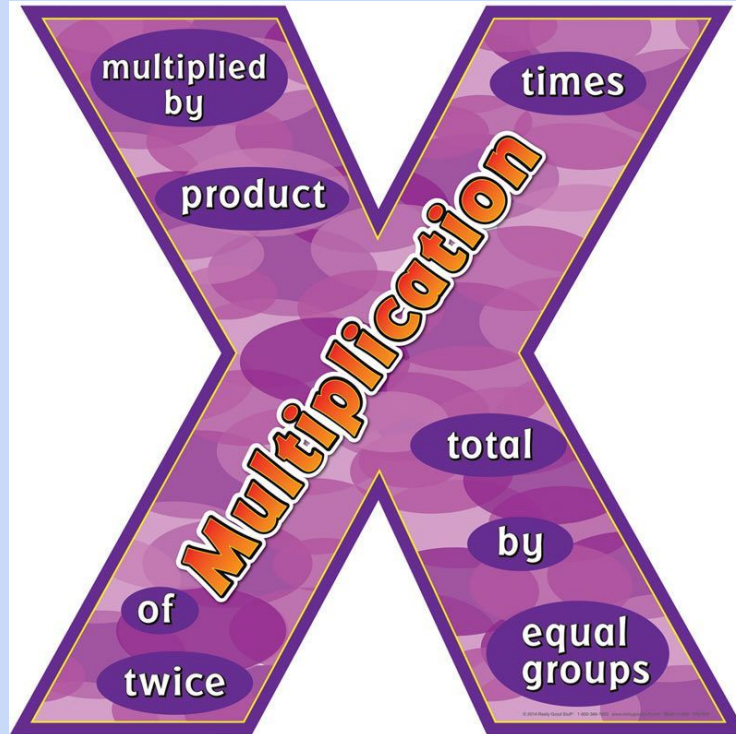
10.20 - 10.45 - Refreshments in the hall

10.45 - 11.20 - Making counting stick workshop in the hall with your child

# Pringle Tin Activity!



# Vocabulary



# Multiplication in the Early Years

Making groups with equal number of objects and recognising the possibility of counting the groups rather than the individual.



# Multiplication in KS1

## Grouping -

Noah's ark or similar activities - arranging objects in equal groups to aid counting; recognition of equivalent totals such as 3 groups of 4 or 4 groups of 3.



# Multiplication in EYFS/KS1

## Repeating Patterns-

grouping beads to make necklaces, make pattern sticks with linking cubes. Use of the word 'each' - 3 of each colour.



# Multiplication in EYFS/KS1

Rhythmic counting in ones -

Emphasising a particular number, counting forwards and backwards.



# Multiplication in EYFS/KS1

## Skip (or step counting) -

Children can often count in patterns but do not relate their counting to multiplication. One way to help to develop this is to use finger counting. If an addition finger is raised when counting in, say twos (say two, raise thumb, say four, raise forefinger etc) they can be stopped occasionally and asked 'How many twos have we counted?' Or 'How many twos in six?'



# Multiplication KS1

## Arrays



$$5 \times 3 =$$

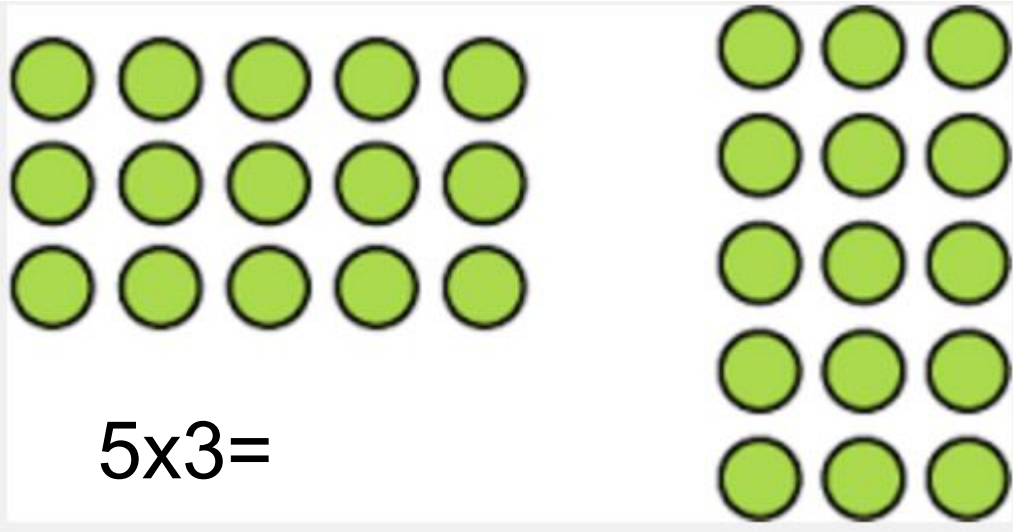


$$3 \times 5 =$$

Now try this.....

# Multiplication KS1 and Lower KS2

## Arrays



$$5 \times 3 =$$

$$3 \times 5 =$$

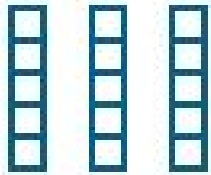
Now try this:

$$7 \times 4 =$$

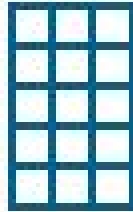
# Development of Arrays

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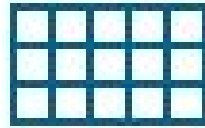
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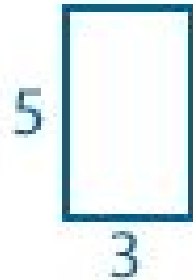
$$5 + 5 + 5 = 15$$



$$3 \times 5 = 15$$



$$5 \times 3 = 15$$



# Multiplication in KS1

Repeated Addition

$$5 \times 2 =$$

$$5 + 5 = \quad \text{or} \quad 2 + 2 + 2 + 2 + 2 =$$

# Multiplication in KS1

John bought 6 bags of balloons for his party. Each bag contains 10 balloons. How many balloons did he buy altogether?

# Multiplication Lower KS2

$$24 \times 3 =$$

$$\begin{array}{r|l|l|l} \times & 20 & 4 & \\ \hline 3 & 60 & 12 & = 72 \end{array}$$

Now try this.....

# Multiplication Lower KS2

$$24 \times 3 =$$

$$\begin{array}{r|l|l|l} \times & 20 & 4 & \\ \hline 3 & 60 & 12 & = 72 \end{array}$$

Now try this:

$$34 \times 7 =$$



# Multiplication Lower/Upper KS2

$$32 \times 46 =$$

x	30	2	
40	1200	80	= 1280
6	180	12	= 192
			<hr/>
			1472

Now try this.....

# Multiplication Lower/Upper KS2

$$32 \times 46 =$$

x	30   2	
40	1200   80	= 1280
6	180   12	= 192
		<hr/>
		1472

Now try this:

$$42 \times 75 =$$

# Multiplication Lower/Upper KS2

Th H T U

$$\begin{array}{r} 48 \\ \times 36 \\ \hline 48 \\ 240 \\ 240 \\ 1200 \\ \hline 1728 \end{array}$$

$$\begin{array}{l} (6 \times 8) \\ (6 \times 40) \\ (30 \times 8) \\ (30 \times 40) \end{array}$$

Now try this.....

# Multiplication Lower/Upper KS2

Th H T U

$$\begin{array}{r} 48 \\ \times 36 \\ \hline 48 \\ 240 \\ 240 \\ 1200 \\ \hline 1728 \end{array}$$

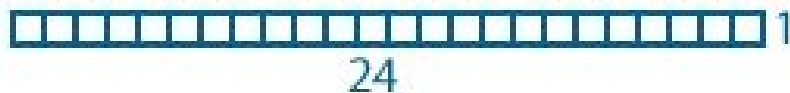
$$\begin{array}{l} (6 \times 8) \\ (6 \times 40) \\ (30 \times 8) \\ (30 \times 40) \end{array}$$

Now try this:

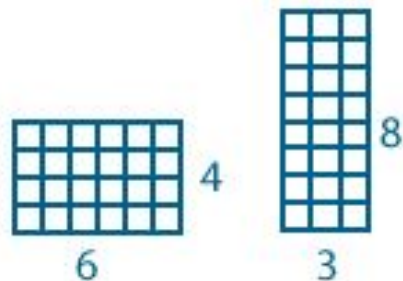
$$32 \times 26 =$$

# Factors

To explore factors of (say) 24, begin with a strip of squares (or equipment)



Rearrange to make a new array. Explore other arrays



The factors of 24 are 1, 2, 3, 4, 6, 8 and 12.

# Factors

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To explore factors of 18 using the equipment on your table.

# When do we use multiplication in maths ?

— — —

- Arithmetic
- Area & Volume
- Ratio & Proportion
- Doubling
- Fractions
- Using scales
- Percentages
- Algebra ( $7n + 5 = 40$  so  $n = ?$  )
- Problem solving (money)
- Factors & multiples
- Converting Measures (cm to m ... km to miles ...)
- Tally charts
- Scale factor & enlargements
- Square & cube numbers

