

**KS2 Maths**  
**Parent Workshop**  
**Friday 25<sup>th</sup> November**



The background of the slide is a light gray surface covered with numerous colorful, three-dimensional numbers (0-9) in various colors including blue, yellow, orange, green, and purple. The numbers are scattered across the entire background.

**By the end of this session...**

- 1. Aware of the expectations of the national curriculum.**
- 2. Suggest some ways in which you can help at home**
- 3. Give a brief overview for how we teach  $\times$  and  $\div$**

Pick a square

Move up/down to  
a **BLUE**

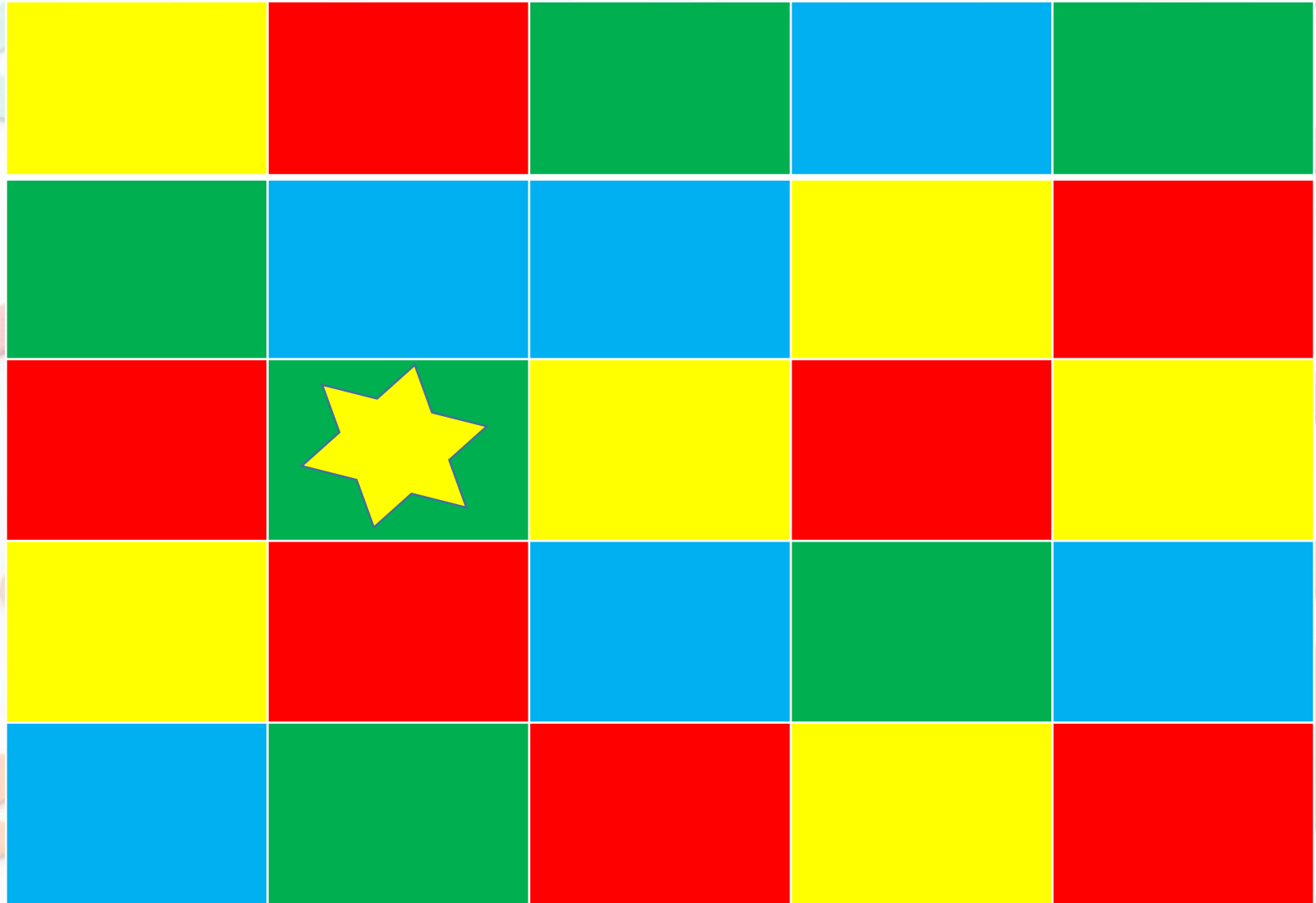
Move left or right  
to a **YELLOW**

Move up or down  
to a **RED**

Move left or right  
to a **GREEN**

Discuss with your  
partner where you  
land.

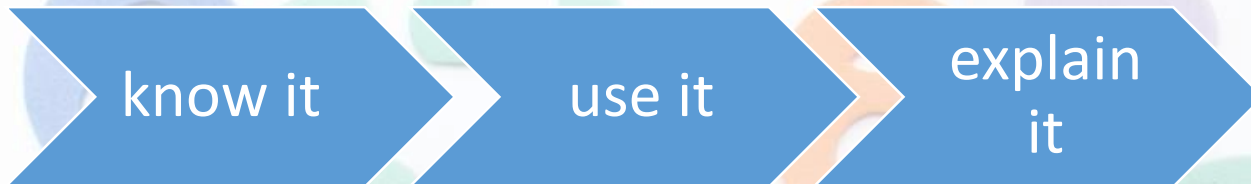
Can you explain  
what is  
happening?





# The 2014 National Curriculum

- Become **fluent**
- **Reason** mathematically
- **Solve problems**



In the circles, write a multiple that belongs to each set.

One has been done for you.

numbers from 1 to 99

multiple of **10**

50

numbers from 101 to 199

multiple of **20**

numbers from 201 to 299

multiple of **30**

numbers from 301 to 399

multiple of **40**

17

Seven children measured their heights.

Children	Height (cm)
Stefan	144
Lara	136
Olivia	142
Chen	143
Maria	152
Dev	148
Sarah	150

What is the mean height of the children?

Show  
your  
method

cm



What year group do you think is expected to achieve these?

### Statutory requirements

Pupils should be taught to:

- recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- recognise and use factor pairs and commutativity in mental calculations
- multiply two-digit and three-digit numbers by a one-digit number using formal written layout
- solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as  $n$  objects are connected to  $m$  objects.

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

The importance of knowing times table facts!

1


2

3

4

5

1x1=1  
1x2=2  
1x3=3  
1x4=4  
1x5=5  
1x6=6  
1x7=7  
1x8=8  
1x9=9

2x2=4  
2x3=6  
2x4=8  
2x5=10  
2x6=12  
2x7=14  
2x8=16  
2x9=18

3x3=9  
3x4=12  
3x5=15  
3x6=18  
3x7=21  
3x8=24  
3x9=27

4x4=16  
4x5=20  
4x6=24  
4x7=28  
4x8=32  
4x9=36

5x5=25  
5x6=30  
5x7=35  
5x8=40  
5x9=45

6

7

8

9

6x6=36  
6x7=42  
6x8=48  
6x9=54

7x7=49  
7x8=56  
7x9=63

8x8=64  
8x9=72

9x9=81



SNAP!

Bingo

Counting  
up/down  
multiples

If ☁ is the answer...

What is the question?

Websites

Mathletics – through our VLE

[BBC Bitesize](#)

[TopMarks](#)

Apps



Math Splat 99p



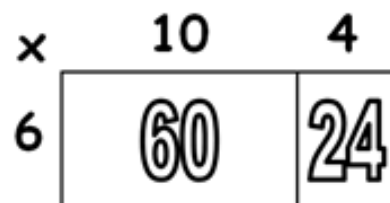
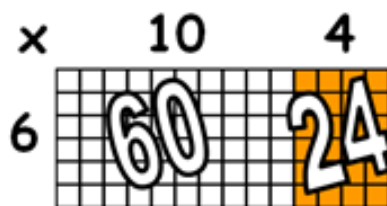
Squeebles £2.99

# Some vocabulary worth knowing...

- Odd
- Even
- Inverse
- Multiple
- Factor
- Prime
- Square

## Visualising and demonstrating the distributive law: Arrays

Progression from arrays to area to the grid method.



Arrays



Area



Grid

The grid method:

$$\begin{array}{r}
 \begin{array}{r}
 \text{t u} \quad \text{u} \\
 14 \times 6 \\
 \hline
 \end{array} \\
 \begin{array}{r}
 \times \quad 10 \quad 4 \\
 6 \quad \boxed{60} \quad \boxed{24} \\
 \hline
 \end{array}
 \end{array}$$

Written partitioning method:

$$\begin{array}{r}
 \text{t u} \quad \text{u} \\
 14 \times 7 = (10 + 4) \times 7 \\
 10 \times 7 = 70 \\
 4 \times 7 = 28
 \end{array}$$

Additional notes and guidance.



Use a variety of images for arrays

It is vital when partitioning that place value is accurate. Pupils should mark HTU above the numbers to keep alignment.



### Expanded vertical column multiplication:

$\begin{array}{r} \text{t u} \quad \text{u} \\ 26 \times 7 \\ \hline 42 \\ + 140 \\ \hline 182 \end{array}$	$(7 \times 6)$ $(7 \times 20)$	Expanded with partial products	$\begin{array}{r} \text{t u} \quad \text{t u} \\ 48 \times 35 \\ \hline 40 \\ 200 \\ 240 \\ + 1200 \\ \hline 1680 \end{array}$	$(5 \times 8)$ $(5 \times 40)$ $(30 \times 8)$ $(30 \times 40)$
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### Compact vertical column multiplication:

$\begin{array}{r} \text{t u} \quad \text{u} \\ 26 \times 7 \\ \hline 182 \\ \hline \end{array}$	$\begin{array}{r} \text{t u} \quad \text{t u} \\ 47 \times 36 \\ \hline 282 \\ + 1410 \\ \hline 1692 \end{array}$	$(6 \times 47)$ $(30 \times 47)$
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### Additional notes and guidance.

To support understanding and progression the grid method, expanded and compact methods should be shown side-by-side to emphasise the links between the different formats.

Accurate use of the language of place value when carrying will support pupil progression and understanding.

"6 multiplied by 7 equals 42. Four tens and two units/ones"

Avoid 'carrying' stories such as 'put the milk bottles on the next door step' – it is much more effective to use the language of place value.

**Chunking:** Using subtraction

$$75 \div 3$$

The number  
of 3's in each  
chunk/group.

$$\begin{array}{r} 3 \overline{) 75} \\ - 30 \\ \hline 45 \\ - 30 \\ \hline 15 \\ - 15 \\ \hline 0 \end{array} \quad \begin{array}{l} 3 \times 10 \\ 3 \times 10 \\ 3 \times 5 \end{array}$$

$$75 \div 3 = 25$$

$$231 \div 6$$

The number  
of 6's in each  
chunk/group.

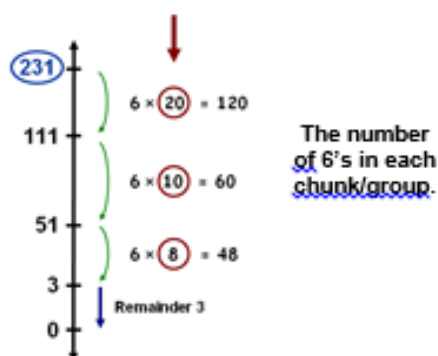
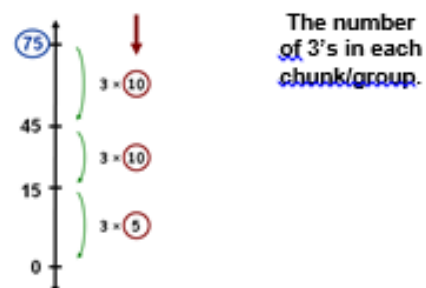
$$\begin{array}{r} 6 \overline{) 231} \\ - 120 \\ \hline 111 \\ - 60 \\ \hline 51 \\ - 48 \\ \hline 3 \end{array} \quad \begin{array}{l} 6 \times 20 = 120 \\ 6 \times 10 = 60 \\ 6 \times 8 = 48 \end{array}$$

$$231 \div 6 = 38 \text{ r}3$$

Progression and greater efficiency will be shown  
by pupils subtracting ever larger 'chunks' using their growing box of known facts.

Additional notes and guidance.

To support understanding and progression the subtractive number line approaches should be shown **VERTICALLY** side-by-side with the subtractive chunking methods.



See page above for using known facts box as a teaching tool.

### Compact/short/bus stop method

This approach goes under many names.

"2 divided by 5"

"Can't do...."

"23 divided by 5 is 4 **remainder 3**"

$$\begin{array}{r} \text{t} \\ 4 \\ 5 \overline{) 235} \end{array}$$

The 4 is placed on top in the tens column.

$$\begin{array}{r} \text{t} \quad \text{u} \\ 4 \\ 5 \overline{) 23^35} \end{array}$$

The **remainder 3** (3 tens) are added to the units.

The division is completed  
( $35 \div 5 = 7$ ) and the 7 is  
placed in the units column.

$$\begin{array}{r} \text{t} \quad \text{u} \\ 47 \\ 5 \overline{) 23^35} \end{array}$$

$$235 \div 5 = 47$$



**Thank you for coming!**

**Any questions.**

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