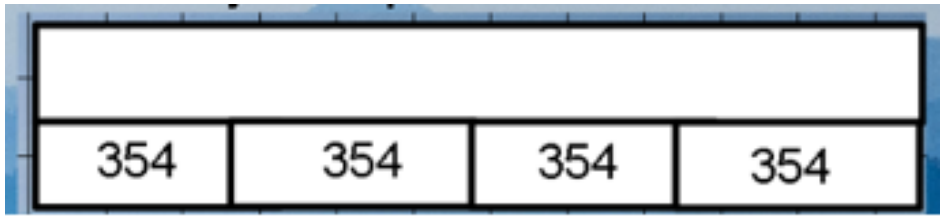
NORTH WESTMINSTER FEDERATION

Welcome to Year 6's Maths Parent Workshop

Miss Ghirmay



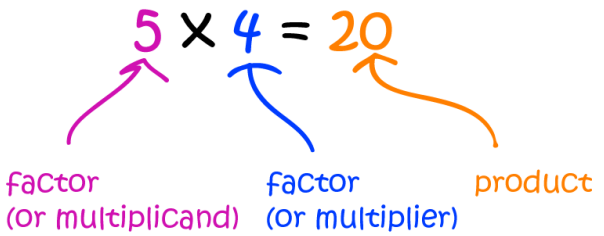
Maths Curriculum

- Emphasis on **representations** to help understand underlying mathematical structures



- **Reasoning** and problem-solving

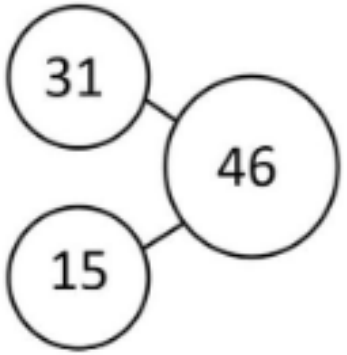
- Precise mathematical **vocabulary**



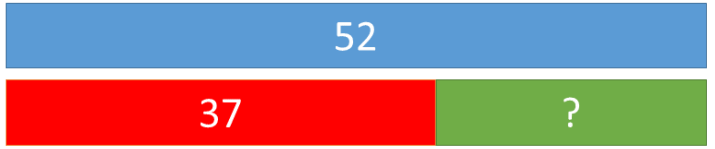
- Making **links** between known and unknown facts (If….then…)

Resources and Visual Models

Children already use a number of visual models to help them see the underlying mathematical structures…



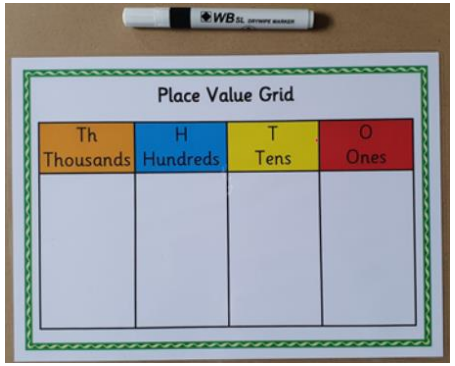
Part-whole model



Bar model (also a part-whole model)



Place value counters

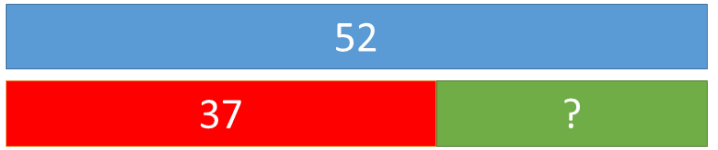


What is the bar model?

- Bar models are **pictorial representations** of problems or concepts where bars (rectangles) are used to represent quantities in a problem

- Used widely as an effective part of the Concrete, Pictorial, Abstract (**CPA**) approach





- Helps to reveal the **mathematical structure** beneath the problem and mathematical relationships between its component parts

Why use the bar model?



- Helps children to **visualise** the size of the quantities in the problem. The location of the bars relative to each other helps children visualise how the quantities in the problem are related to each other.

- Seeing this relationship helps the problem solver **decide which operation**(s) to use (addition, subtraction, multiplication, division) to solve the problem.



- Help **make sense of word problems**, including multi-step problems…

- Ensures **consistency** of approach

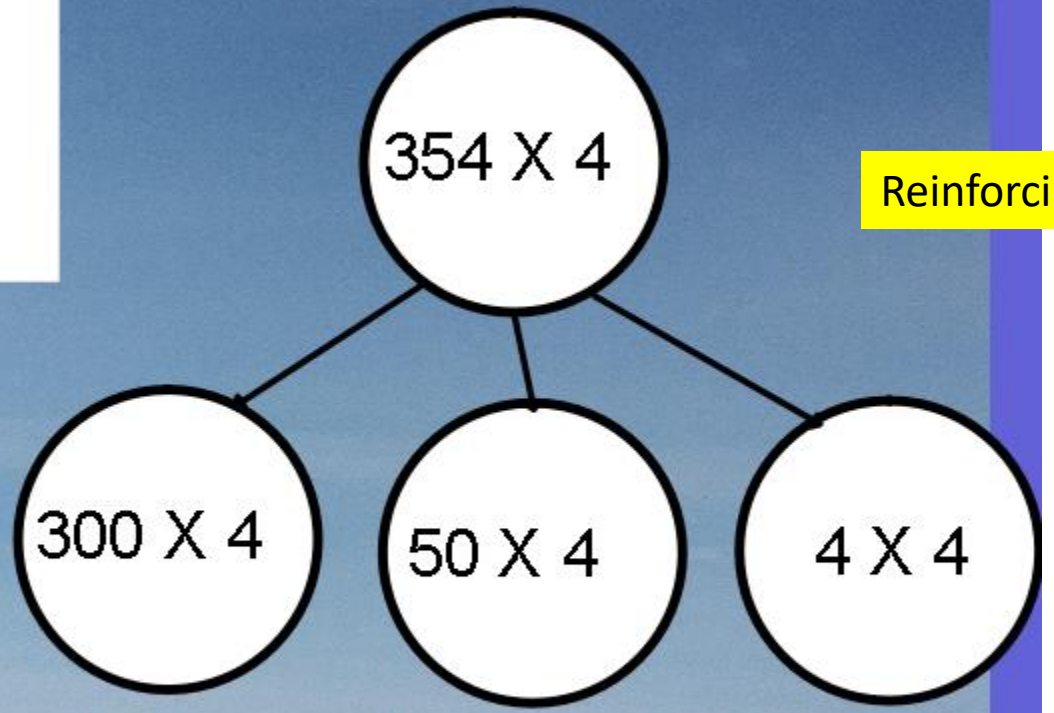
- Pupil voice: “We want to draw to explain answers…”

Quick Recap: Think about your method!

How would you complete:

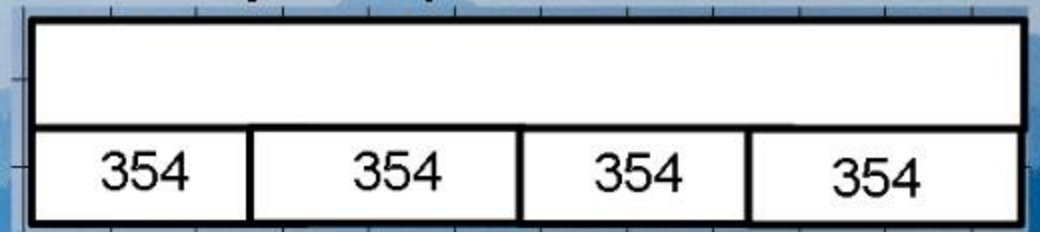
354 x 4?

What are your steps?



Reinforcing mental strategies

How could you represent this as a bar model?



Can you use a formal method to show your working?



Contextualised Learning

Talk on your tables:



1 a) What is the total volume of the 3 drinks cans?

b) What is the total volume of 30 cans?

L.O: To multiply decimal numbers by whole numbers.

There were lots of different ways...Which way did you choose?



a) Work out 3 × 0·3.

Method 1: Use known facts.

3 × 3 = 9

3 × 0·3 = 0·9

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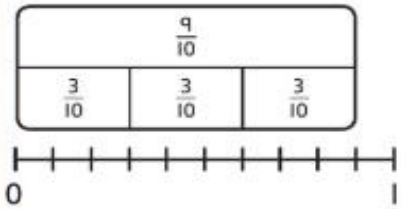
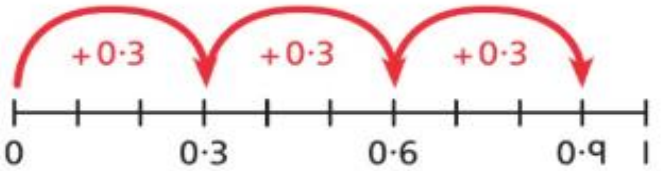
Method 2: Use fractions.

$0{\cdot}3 = \frac{3}{10}$



$3 \times \frac{3}{10} = \frac{9}{10}$ $\frac{9}{10} = 0{\cdot}9$

Method 3: Count in decimal steps.



0·3 + 0·3 + 0·3 = 0·9

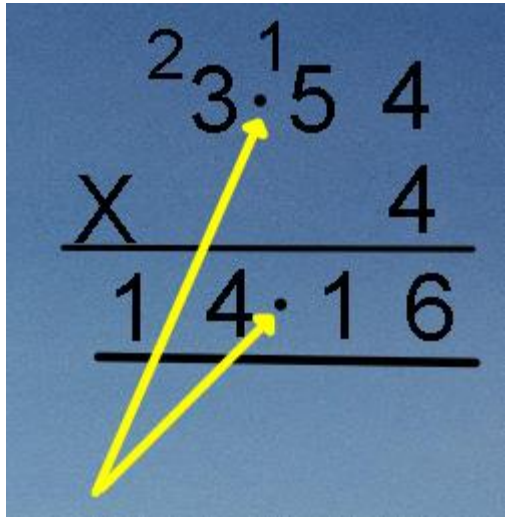
Method 4: Convert the measuring units.

0·3 l = 300 ml

3 × 300 ml = 900 ml

900 ml = 0·9 l

Making Links



Think back to our starter:

Now you know:

$$\begin{array}{r} {}^{2}3\,{}^{1}5\,4 \\ \times \quad\quad 4 \\ \hline 1\,4\,1\,6 \end{array}$$

How would you calculate this?

3.54 X 4?

Discuss:

What steps are the same?

What is different?

What do you need to remember?



Application: Worded Problem

Can you apply your method now to this?



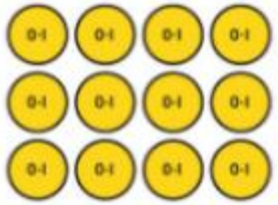
How tall is the fence panel?

The panel is 1.2m wide. The whole panel will be made using 6 panels.
How long will the whole fence be?

Variation in Question Types and Presentation

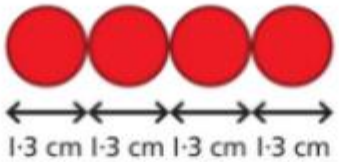
Write and complete a multiplication for each of these representations.

a)



□ × □ = □

b)



□ × □ = □

Use the known fact to calculate the other multiplications.

a) 1·8 × 4 = □

b) 18 × 0·4 = □

18 × 4 = 72

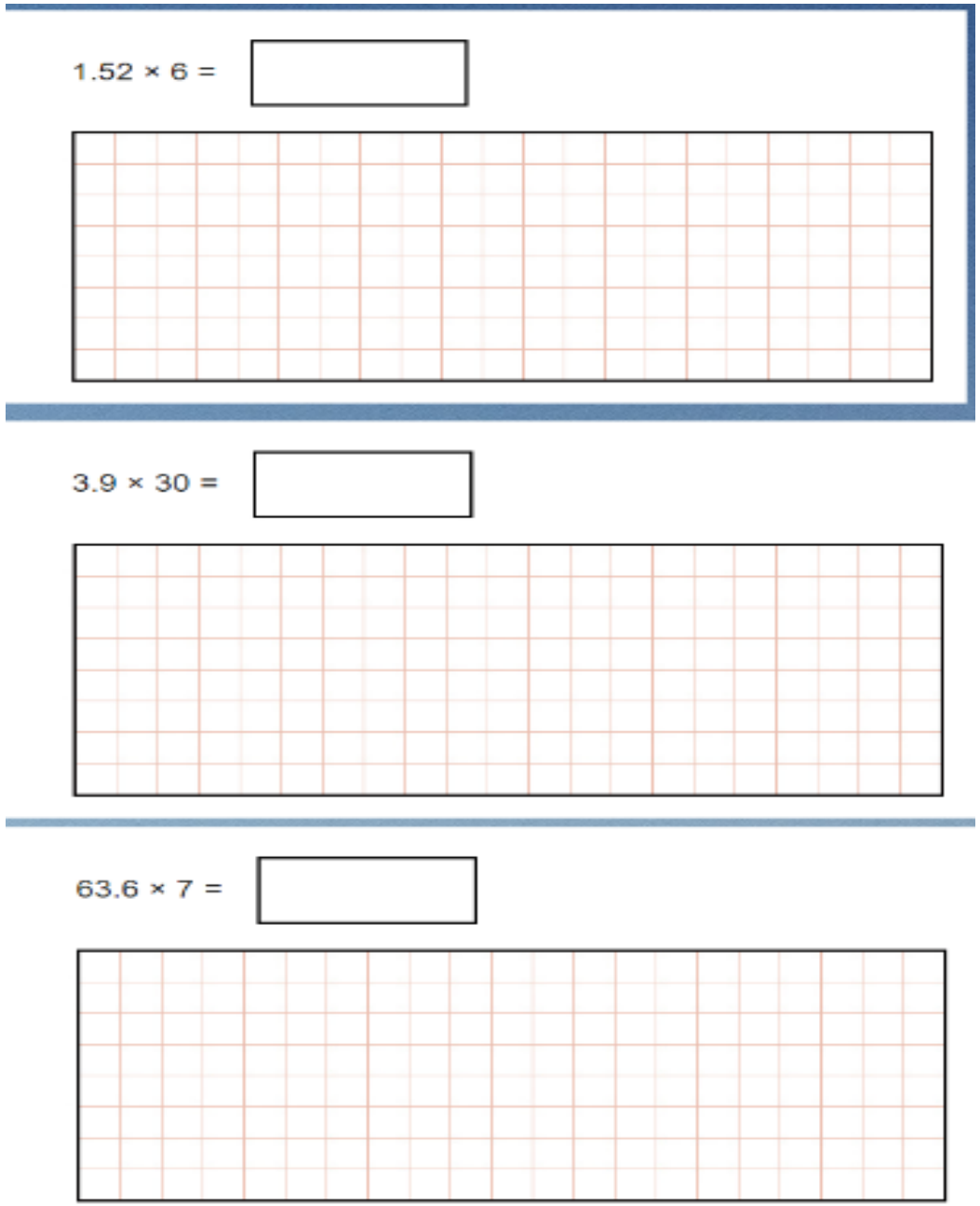
c) 180 × 0·4 = □

d) 18 × 0·04 = □

a) Complete these sets of multiplications.

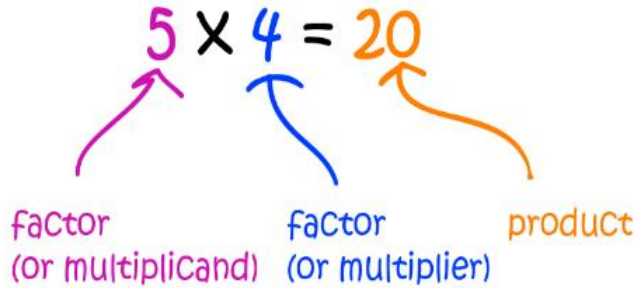
2 × 3 = 6	20 × 3 = □
0·2 × 3 = 0·6	20 × 0·3 = □
0·02 × 3 = □	20 × 0·03 = □
2 × 0·3 = □	200 × 0·3 = □
2 × 0·03 = □	2,000 × 0·03 = □

Arithmetic SATs Paper



Counting: Multiples of 8

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





72 = 8 X 9

___ = 80 X 9

4 X 8 = 32

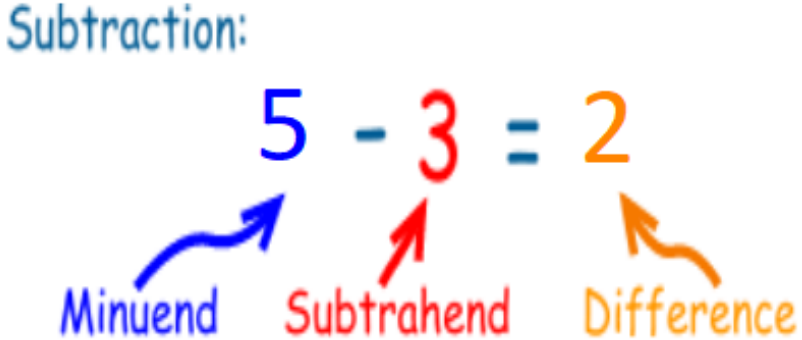
40 X 80 = ____

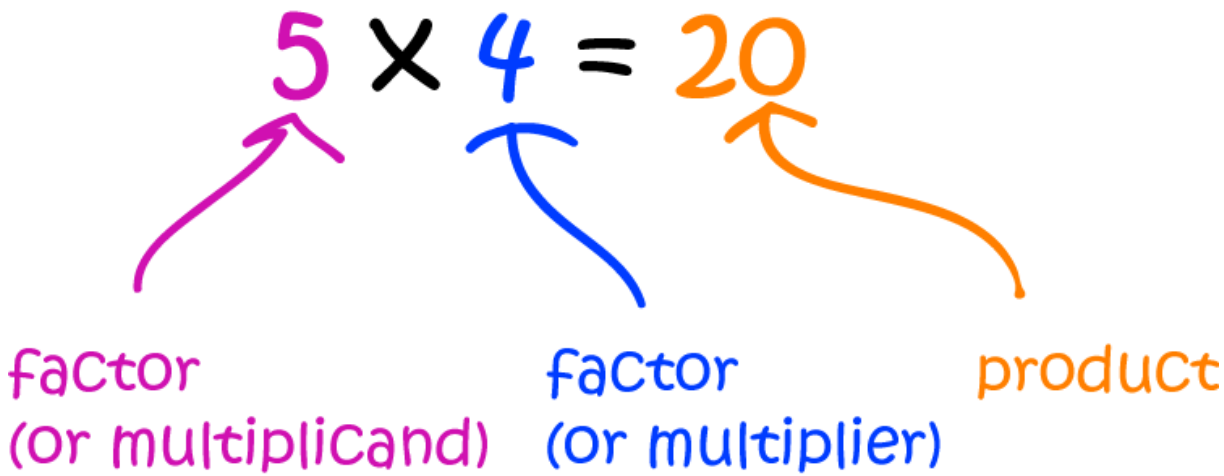
8 X 2 = 16

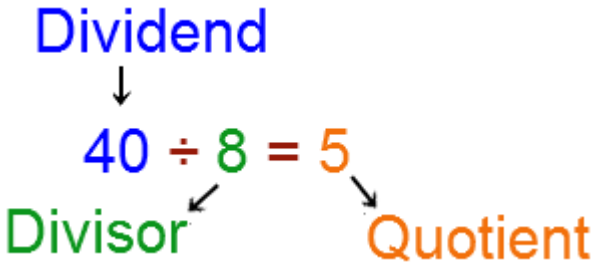
24 X 2 = ____

Mathematical Vocabulary











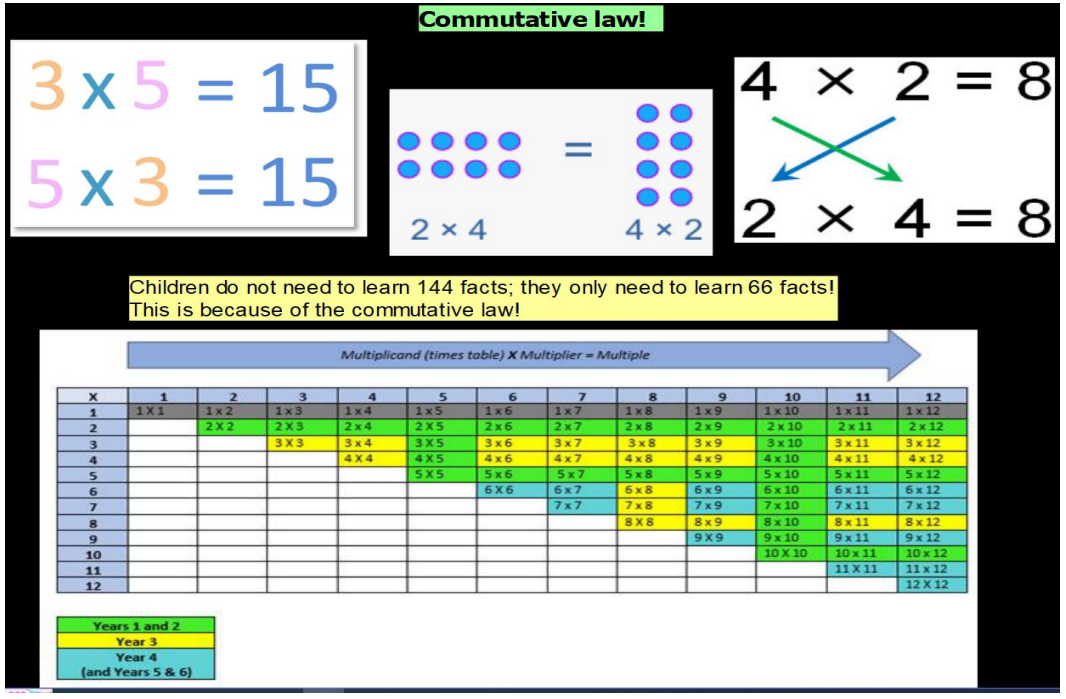
Year 2:
2, 5 and 10 times table

Year 3:
2, 5 and 10 times tables
3, 4 and 8 times tables

Year 4:
All times tables up to 12 X 12

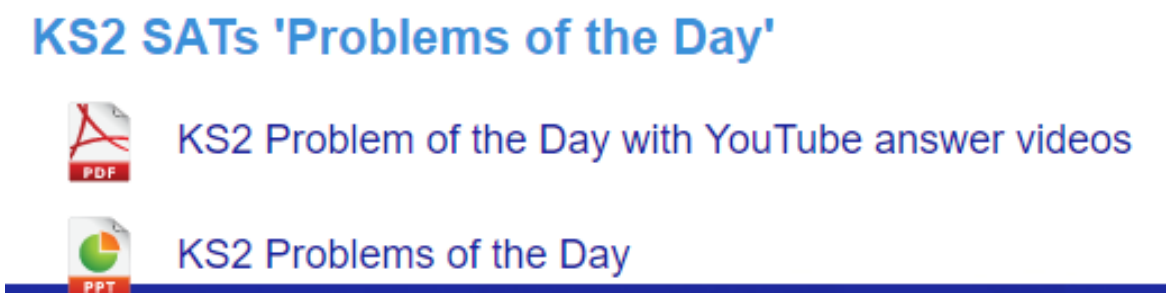
Years 5 and 6:
All times tables up to 12 X 12, including division facts and related multiplication facts (e.g.: 60 X 4)

[Times Tables Policy: Mathematics | Hallfield Primary School (hallfieldschool.org.uk)]



SATs Questions and Bar model

- Mathematics | Hallfield Primary School (hallfieldschool.org.uk)



- Bar Modelling Year 6 Multi-Step Word Problems for KS2 SATs (thirdspacelearning.com)