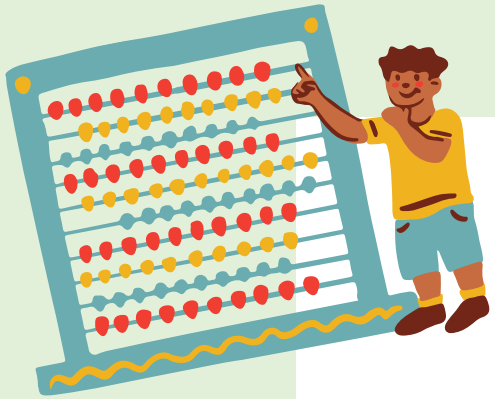




Maths Parent Forum

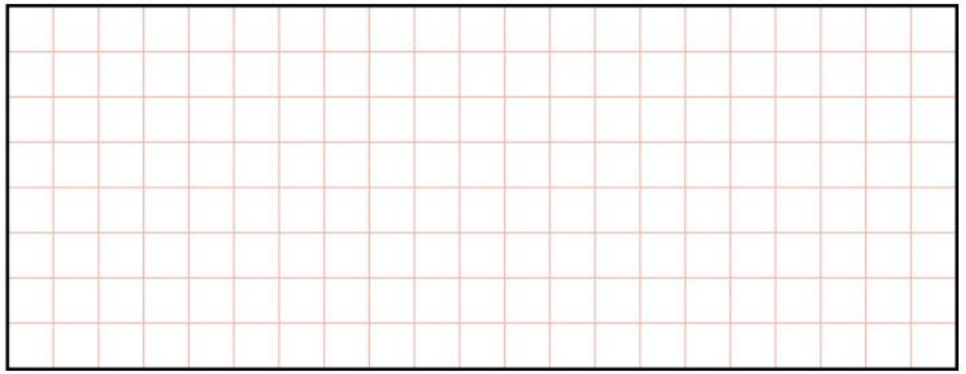
5.2.25

On your chairs are some example SAT questions, please feel free to try and complete them.





$1\frac{1}{4} \times 39 =$ ☐



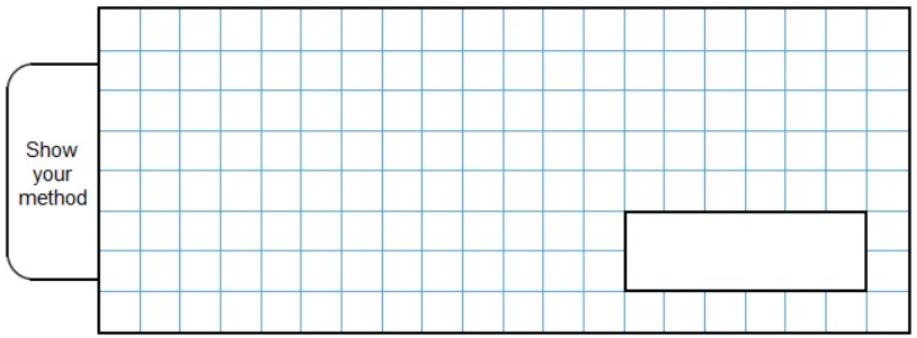
There are 432 places at a dance school.

There are two age groups.

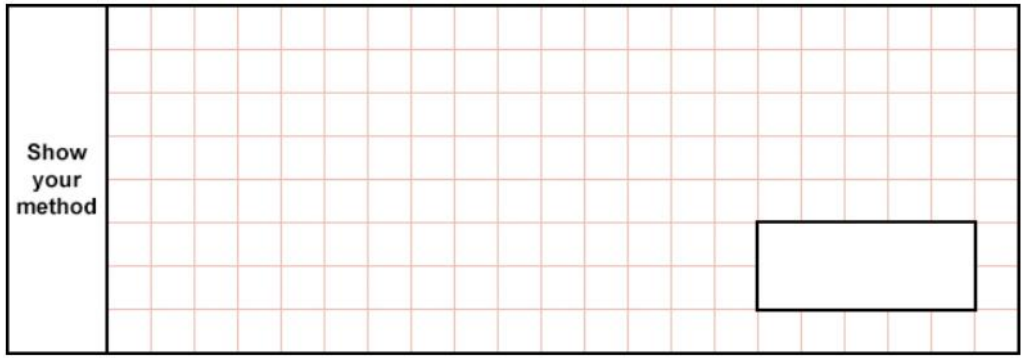
This table shows the number of classes and the number of pupils in each class for each age group at the moment.

Age in years	Number of classes	Number of pupils in each class
7–12	15	16
13–18	10	18

How many **more** pupils can join the dance school?

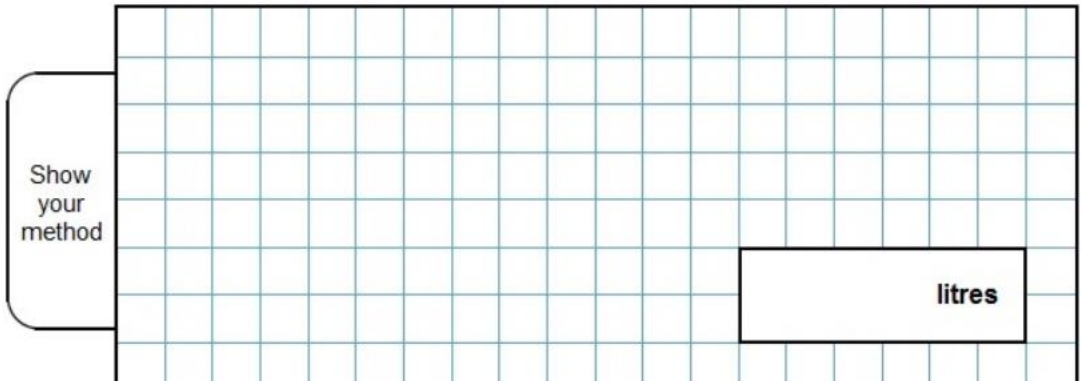


$$\begin{array}{r} 508 \\ \times \quad 74 \\ \hline \end{array}$$



A machine pours 250 millilitres of juice every 4 seconds.

How many **litres** of juice does the machine pour every **minute**?



$$x + 2y = 20$$

x and y are whole numbers **less than 10**

What could x and y be?

$1\frac{1}{4} \times 39 =$ ☐

$48\frac{3}{4}$

OR

$\frac{195}{4}$

There are 432 places at a dance school.

There are two age groups.

This table shows the number of classes and the number of pupils in each class for each age group at the moment.

Age in years	Number of classes	Number of pupils in each class
7–12	15	16
13–18	10	18

Award **TWO** marks for the correct answer of 12

$x = 4$ **AND** $y = 8$

OR

$x = 2$ **AND** $y = 9$

$x = 8$ **AND** $y = 6$

OR

$x = 6$ **AND** $y = 7$

$$\begin{array}{r} 5\ 0\ 8 \\ \times \quad 7\ 4 \\ \hline \end{array}$$

Award **TWO** marks for the correct answer of 37,592

If the answer is incorrect, award **ONE** mark for a formal method of long multiplication with no ıetic error, e.g.

$x = 8$ **AND** $y = 6$

OR

$x = 6$ **AND** $y = 7$

OR

$x = 4$ **AND** $y = 8$

OR

$x = 2$ **AND** $y = 9$

urs 250 millilitres of juice every 4 seconds.

es of juice does the machine pour every **minute**?

☐

TWO marks for the correct answer of 3.75

Show your metho

If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g.

- 60 ÷ 4 = 15
- 250 × 15 = 3750
- 3750 ml ÷ 1000 =

☐

Structure of the forum

Why is learning times tables important?

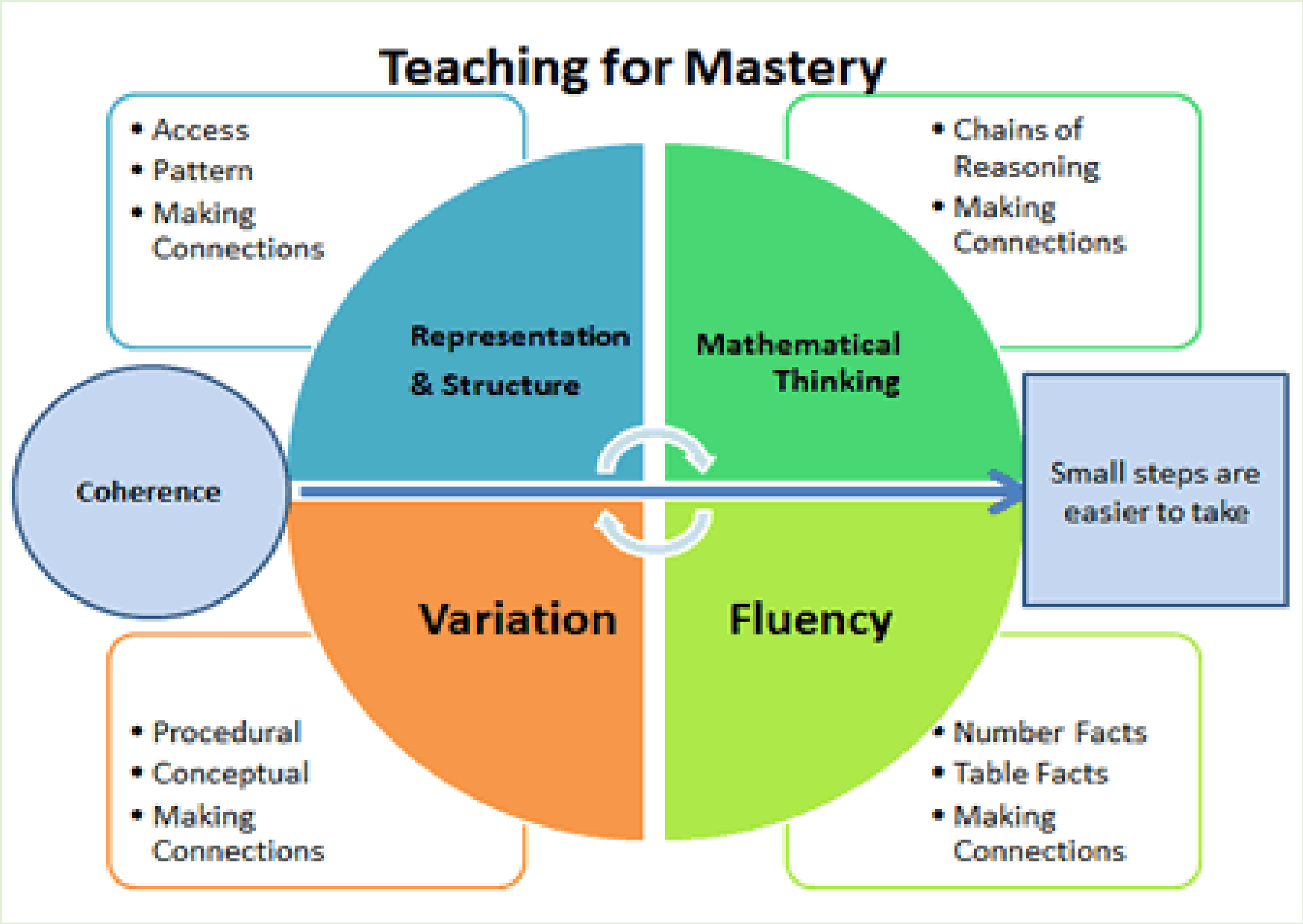
What times tables do children learn and when? The journey of times tables through our school.

The multiplication skills children need to learn alongside their times tables.

How we help pupils to learn their times tables at Bridgetown.

Year 4 MTC

How you can support you child.


Teaching for Mastery
• Access
• Pattern
• Making Connections
• Chains of Reasoning
• Making Connections
Representation & Structure
Mathematical Thinking
Coherence
Small steps are easier to take
Variation
Fluency
• Procedural
• Conceptual
• Making Connections
• Number Facts
• Table Facts
• Making Connections

MULTIPLICATION & DIVISION FACTS					
Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count in multiples of twos, fives and tens.	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward.	Count from 0 in multiples of 4, 8, 50 and 100.	Count in multiples of 6, 7, 9, 25 and 1 000.	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.	
	Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.	Recall multiplication and division facts for multiplication tables up to 12 × 12.		

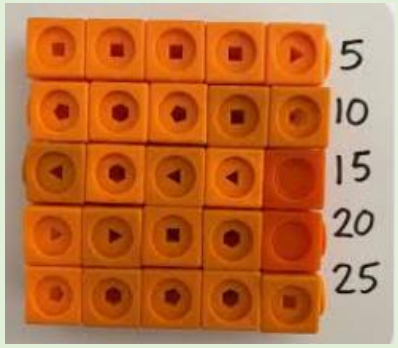
Year 1

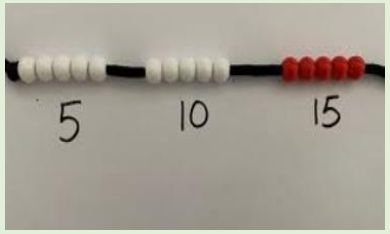
Counting is the key to learning times tables.

Pupils count in multiples of 2, 5 and 10.

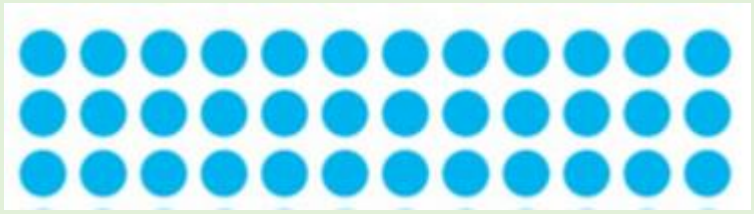
CPA approach helps to build pupils' understanding of number.

Concrete





Pictorial





Abstract

$2 \times 2 = 4$

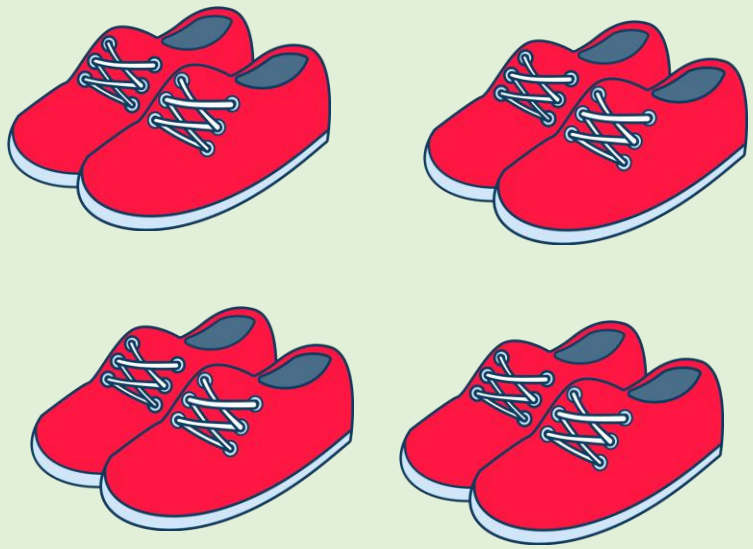
Counting is a key skill in early multiplication

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
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

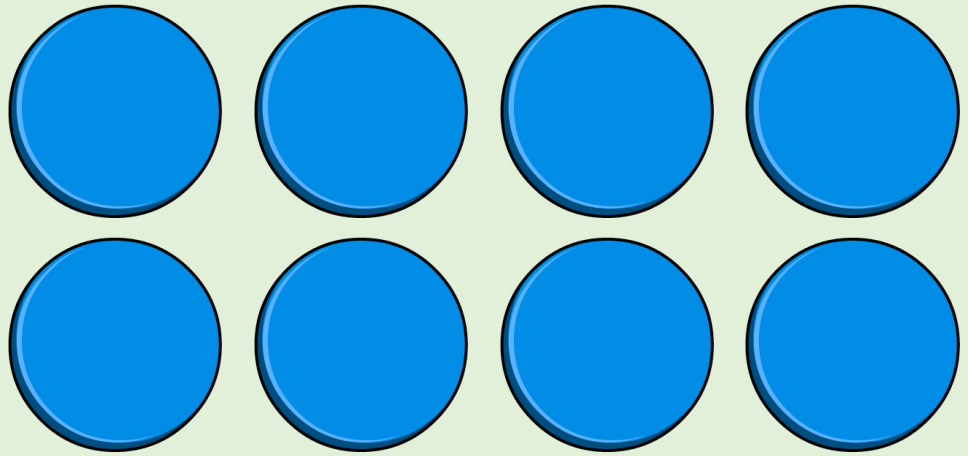
Key Multiplication Concept 1

Multiplication is the same as repeated addition.

Knowing that 4 x 2 is the same as 2 + 2 + 2 + 2



2 + 2 + 2 + 2 = ?



4 x 2 = ?

Year 2

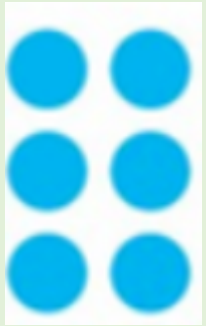
Count in steps of 2, 3, 5 and 10 from any number forwards and backward.

Recall and use multiplication and division facts for the 2, 5, 10 multiplication tables.



2 + 2 + 2 = 6

3 x 2 = 6



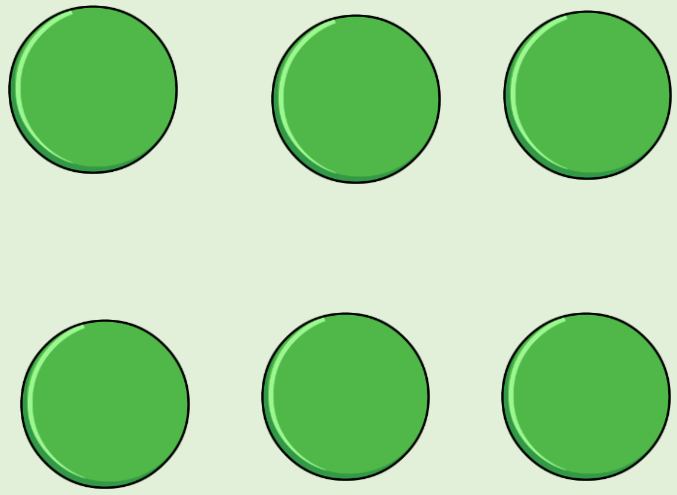
Arrays help represent multiplication



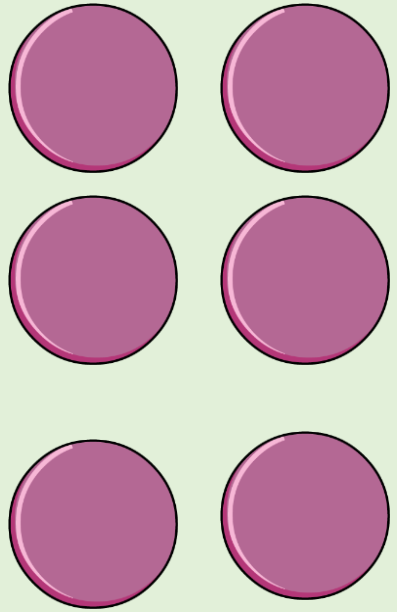
Key Multiplication Concept 2

Multiplication is commutative it can be completed in any order.

3 x 2 is the same as 2 x 3



3 lots of 2 = 6

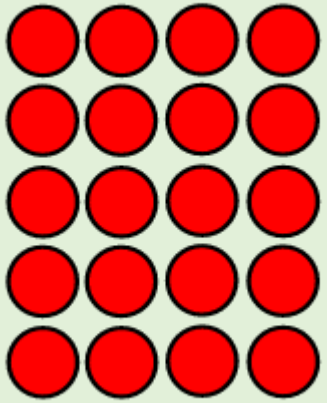


2 lots of 3 = 6

Year 3

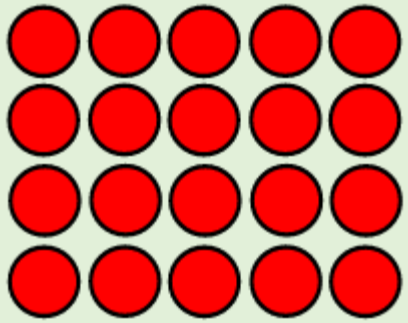
Count on in multiples of 4, 8, 50 and 100.

Recall and use multiplication facts for the 3, 4, 8 times tables.



$5 \times 4 = 20$

$20 \div 4 = 5$



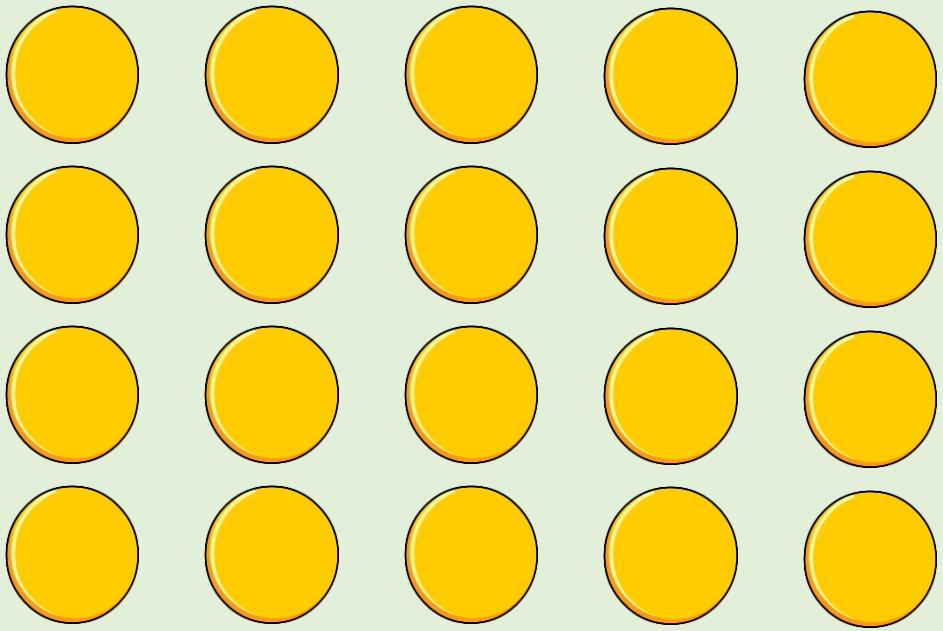
$4 \times 5 = 20$

$20 \div 5 = 4$

x means 'lots of'.

Key Multiplication Concept 3
Multiplication is the inverse of division

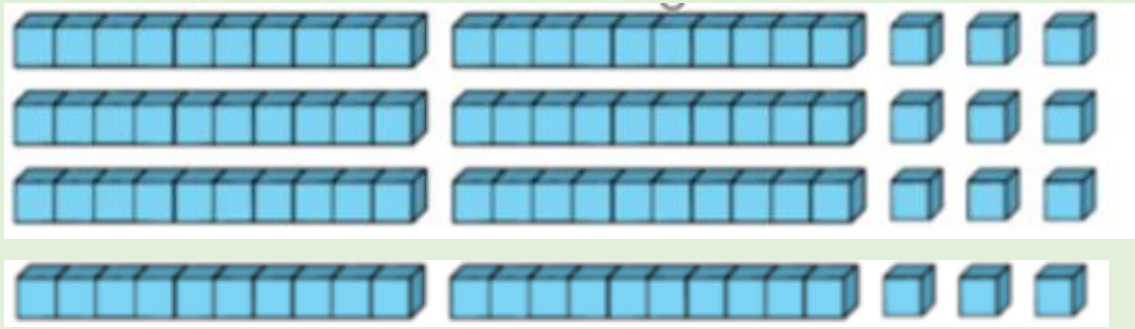
20 ÷ 5 = 4 can be worked out because 5 x 4 = 20



Year 3

Introduction to short multiplication, multiplying a 2 digit number by a single digit.

	T	O
	2	3
X		4
	12	(4 X 3)
	80	(4 x 20)
	92	

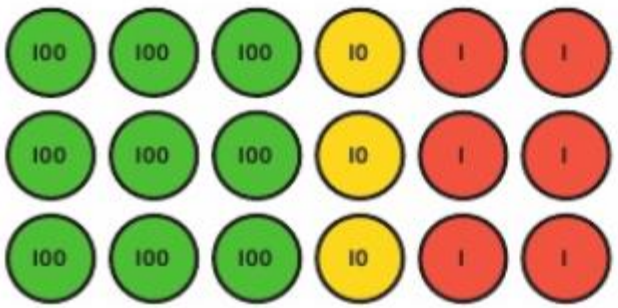


Year 4

Count on in multiples of 6, 7, 25 and 1000.

Recall and use multiplication and division facts for times tables up to 12x12.

Statutory Multiplication Check

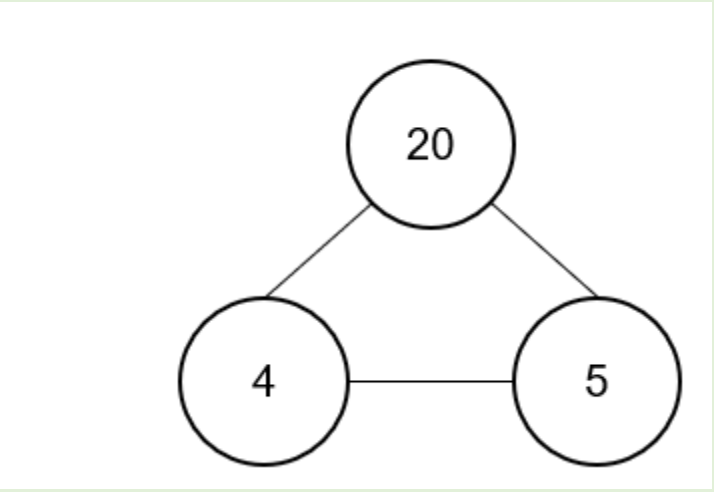


	H	T	O
	3	1	2
x			3
	9	3	6

Key Multiplication Concept 4
Knowledge of number families

4 x 5 = 20, 5 x 4 = 20, 20 ÷ 5 = 4, 20 ÷ 4 = 5

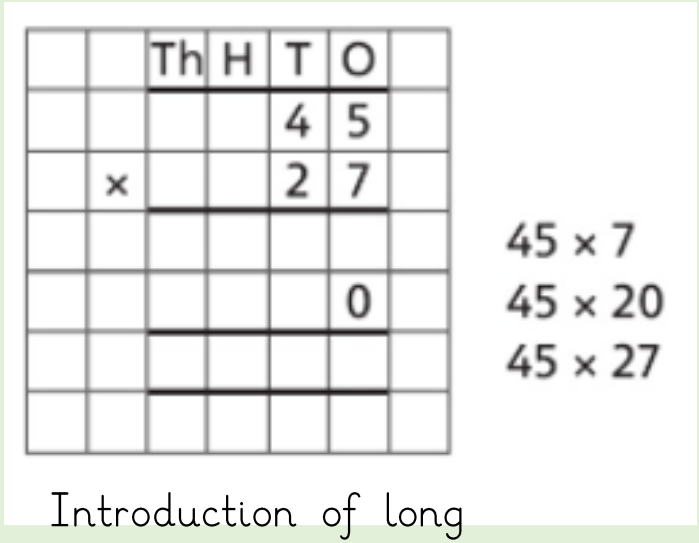
Commutative understanding enable pupils to also be able to see whole number families.



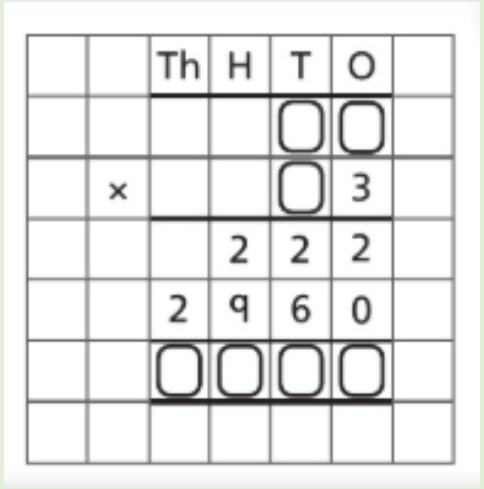
4 x [ ] = 20 or
[ ] ÷ 4 = 5

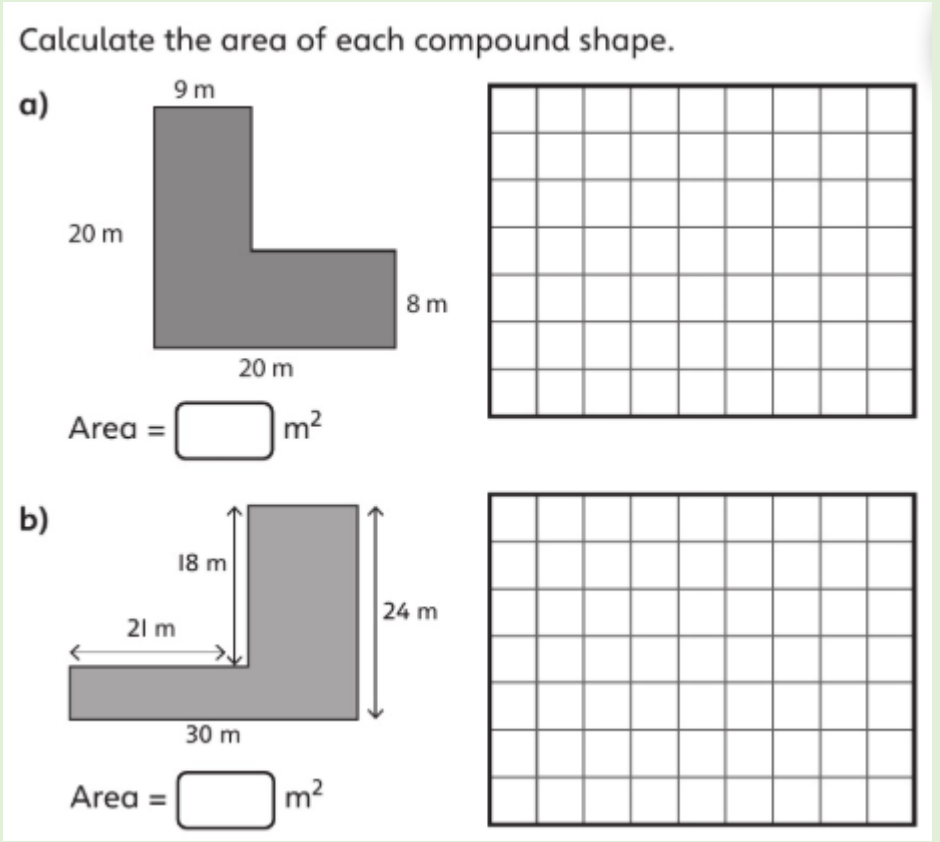
Year 5

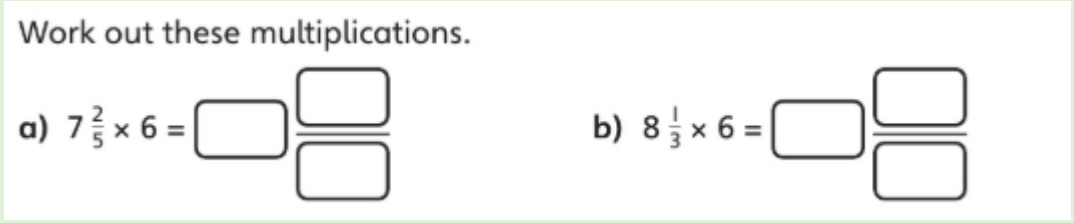
Count forwards or backward in steps of powers of 10 for any given numbers up to 1,000,000.



Introduction of long multiplication







Year 6

	TTh	Th	H	T	O
		1	2	7	4
×				3	2
		2	5	4	8
	3	8	1 2	2	0
	4	2 0	1 7	6	8
	1				

1,274 × 2

1,274 × 30

1,274 × 32

a) $6\frac{8}{12} = \square\frac{\square}{\square}$

b) $\frac{30}{72} = \square\frac{\square}{\square}$

c) $15\frac{24}{48} = \square\frac{\square}{\square}$

d) $\frac{84}{132} = \square\frac{\square}{\square}$

e) $\frac{40}{16} = \square\frac{\square}{\square}$

f) $\frac{90}{72} = \square\frac{\square}{\square}$

a) 0·7 × 2 = ☐

b) 6 × 0·8 = ☐

c) 0·03 × 3 = ☐

d) 0·002 × 4 = ☐

e) ☐ × 7 = 3·5

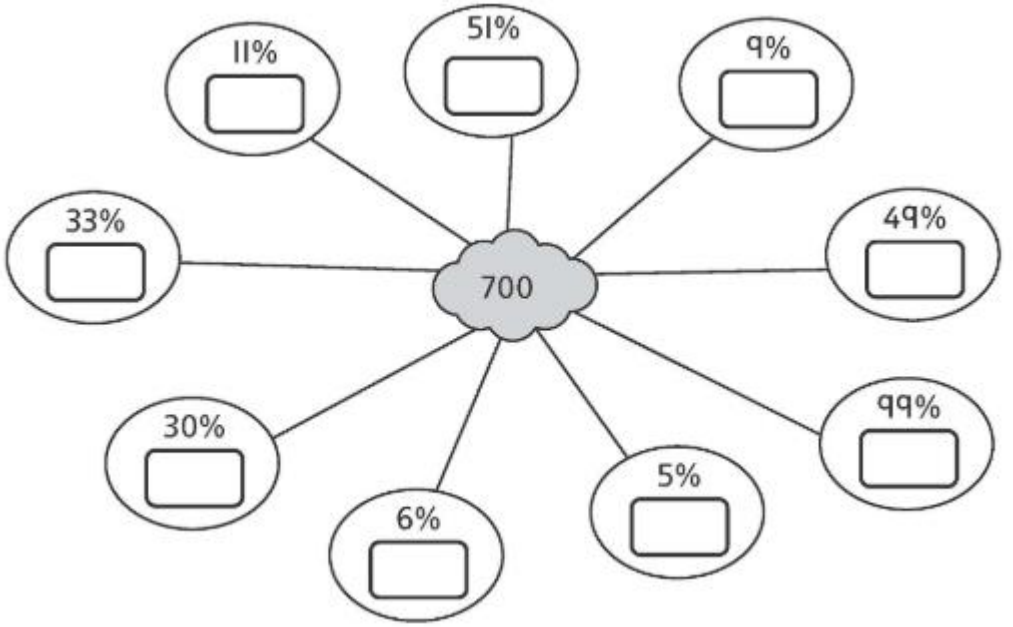
f) 0·02 × ☐ = 0·06

g) 0·02 × ☐ = 0·16

h) 6 × ☐ = 2·4

i) 6 × ☐ = 0·24

j) 6 × ☐ = 0·024



Automaticity

Calculating simple arithmetic facts requires working memory i.e. the mental "space" in which thought occurs.

With enough practice, however, the answers can be pulled from memory (rather than calculated) thereby incurring virtually no cost to working memory.

Pupils who automatically retrieve answers to simple problems keep their working memory free to focus on the bigger problem.

'Skip counting' is not an example of automaticity.

Automaticity

Automatic retrieval of multiplication facts requires successful rehearsal of the facts.

The organisation of human memory is associative; for multiplication tables this is a weakness.

When trying to retrieve the result of 9 x 5, for example, it is not uncommon for our brain to activate knowledge of 9 + 5, or its near neighbours in the multiplication table such as 10x 5.

Verbal memory can be used to overcome this.

Automaticity

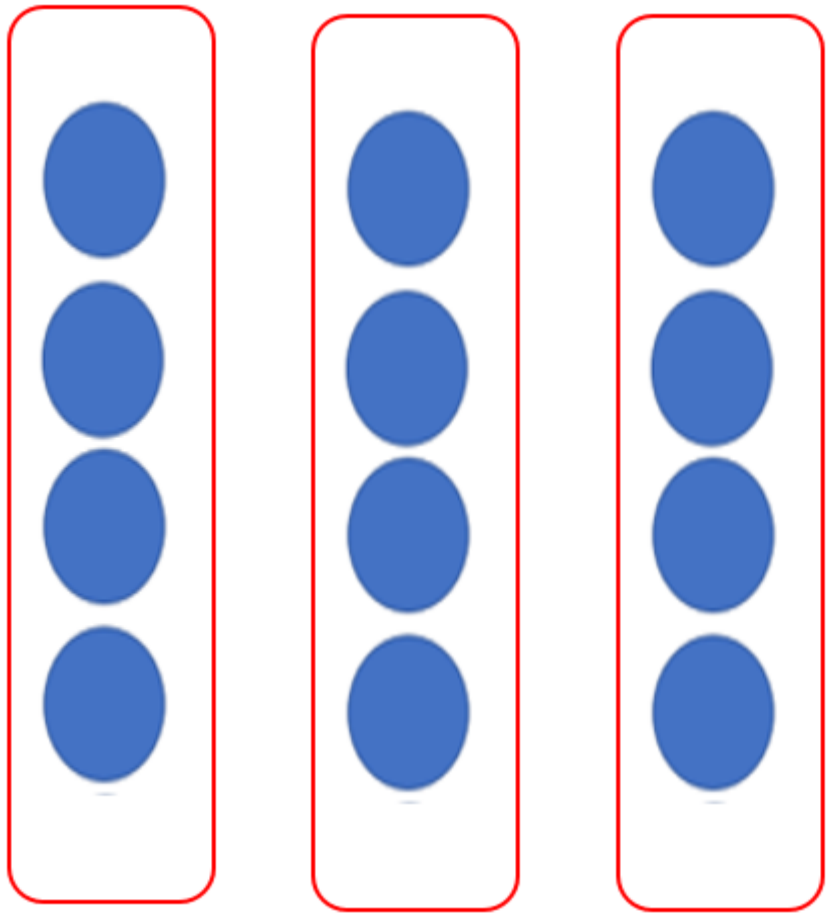
- Research suggests using the strategies which work well to develop fluency in addition and subtract facts are not as effective for multiplication and division facts.
- For multiplication facts, verbal memory plays a stronger role in automaticity.
- Multiplicative facts are stored in our verbal memory; saying (and hearing) the sound pattern of the phrase (e.g. seven threes are twenty one) is important.

CAMPBELL, J. I. D. (2004). The Handbook of Mathematical Cognition. London: Psychology Press
ASHCRAFT, M. H. (1992) Cognitive arithmetic: A review of data and theory. Cognition, 44, 75-106
DEHAENE, S (1997,2011) The Number Sense: How the Mind Creates Mathematics. Oxford University Press
[22] GRAHAM, D. J. (1987). An associative retrieval model of arithmetic memory: how children learn to multiply. In J. A. Sloboda & D. Rogers (Eds.) Cognitive process in mathematics: Keele cognition seminars, Vol. 1. (pp 123-141). New York: Clarendon Press/Oxford University Press

Strategies to develop automaticity

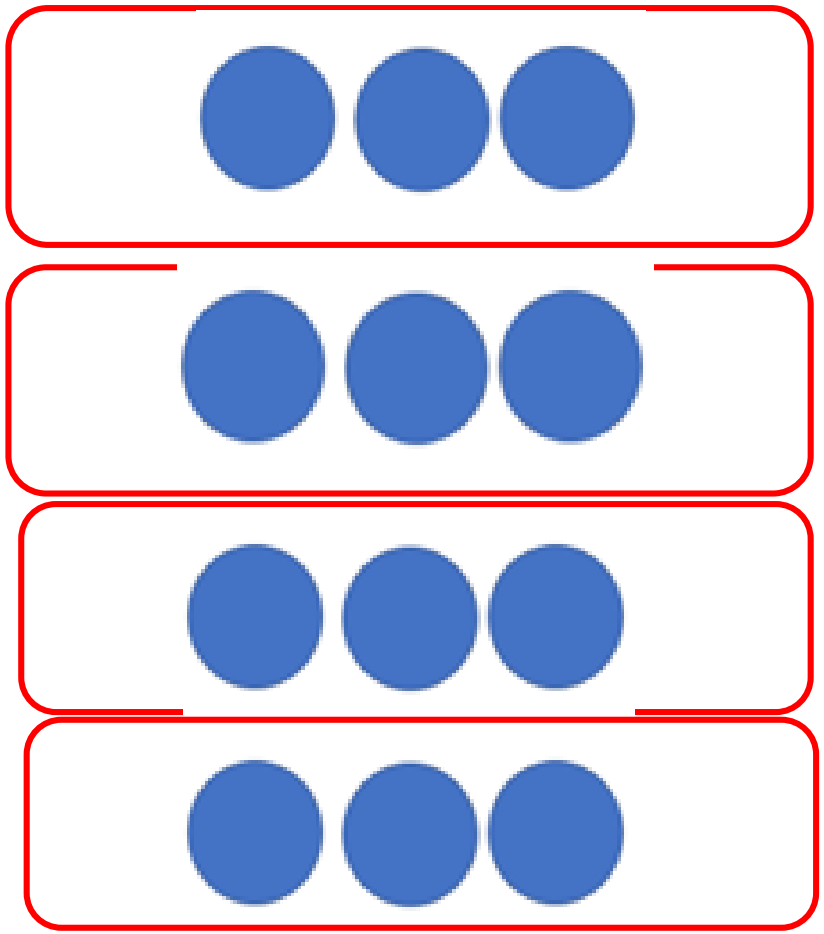
- When learning tables, break them down into small chunks, 2/3 new facts at a time.
- Regular practice 'little and often'.
- Opportunities for retrieval 'use them or lose them.'
- Develop verbal memory: Say facts out loud, 'ping pong' them back and forth, practise saying the whole fact rather than 'skip counting'.
- Times tables songs are helpful.

3 X 4 = 12



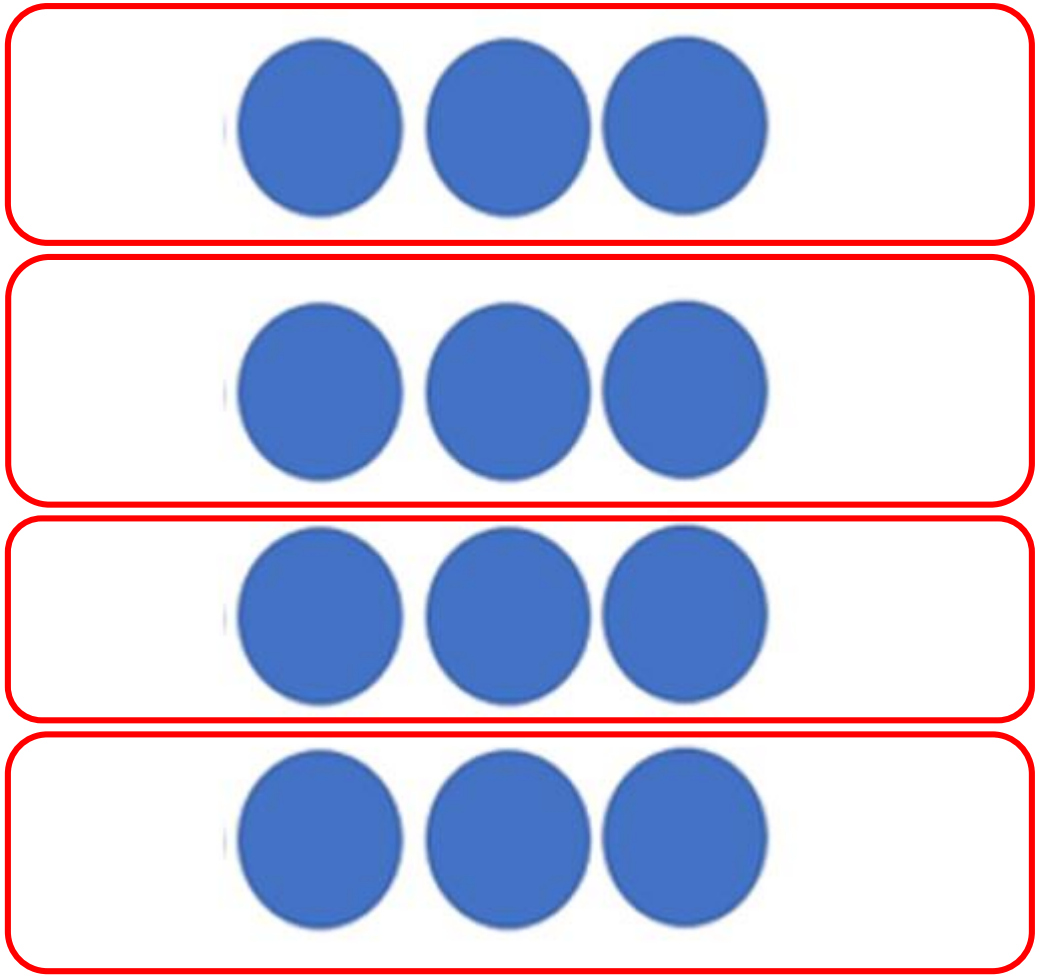
What other x fact can we work out?

4 X 3 = 12

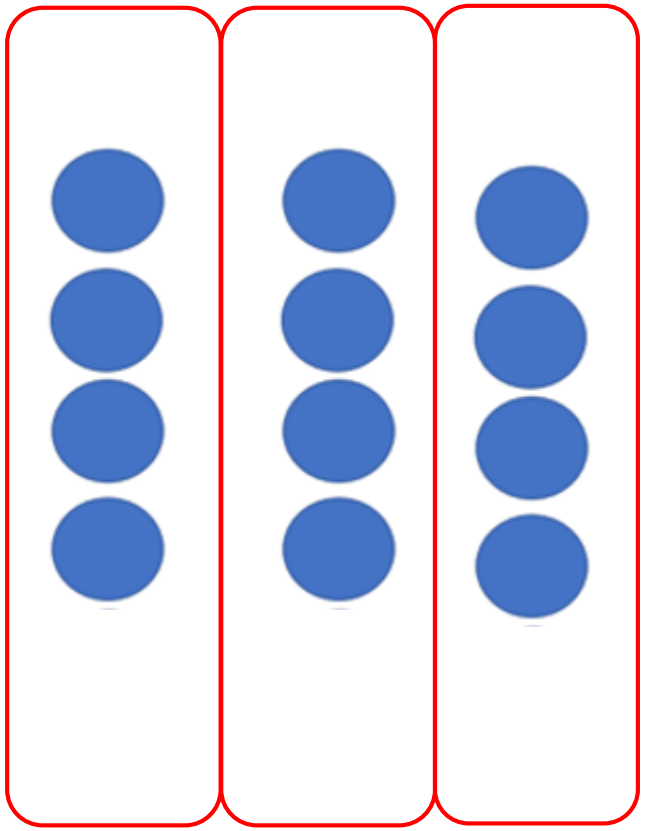


Which ÷ facts can we work out?

12 ÷ 4 = 3

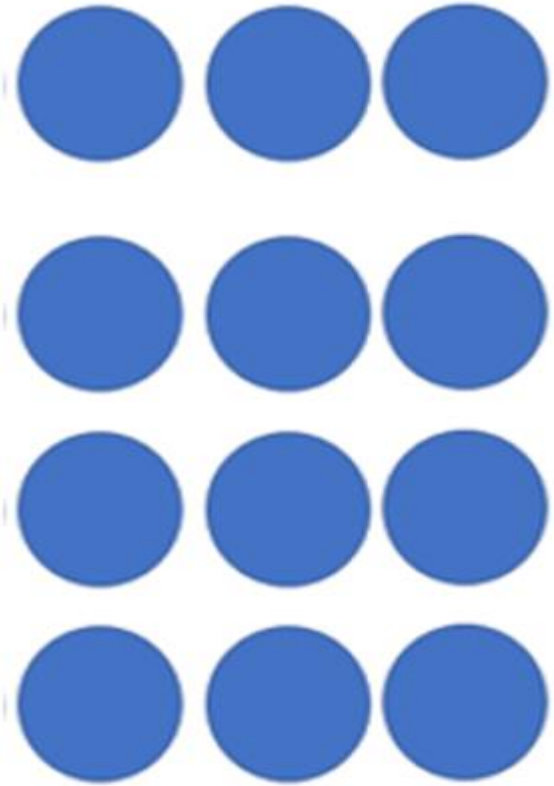


$$12 \div 3 = 4$$



$3 \times 4 = 12$

$4 \times 3 = 12$



$12 \div 4 = 3$

$12 \div 3 = 4$



4X Table
Week 2

Name_____

Date
_____

Week 2 Day 1

4 x 4 =	4 x 4 =	16 ÷ 4 =	16 ÷ 4 =
4 x 4 =	4 x 4 =	16 ÷ 4 =	16÷ 4 =
16÷ 4 =	4 x 4 =	4 x 4 =	16 ÷ 4 =
16 ÷ 4 =	16 ÷ 4 =	4 x 4 =	4 x 4 =
5 x 4 =	4 x 5 =	20 ÷ 4 =	20 ÷ 4 =
20 ÷ 5 =	4 x 5 =	5 x 4 =	20 ÷ 5 =
20 ÷ 4 =	20 ÷ 4 =	5 x 4 =	4 x 5 =
4 x 5 =	20 ÷ 5 =	20 ÷ 4 =	5 x 4 =
4 x 6 =	6 x 4 =	24 ÷ 4 =	24÷ 6 =
24 ÷ 4 =	6 x 4 =	4 x 6 =	24 ÷ 6 =
24 ÷ 6 =	6 x 4 =	4 x 6 =	24 ÷ 4 =
6 x 4 =	24 ÷ 4 =	4 x 6 =	24 ÷ 6 =
28 ÷ 4 =	7 x 4 =	4 x 7 =	28 ÷ 7 =
28 ÷ 7 =	4 x 7 =	28 ÷ 4 =	28 ÷ 4 =
28 ÷ 7 =	28 ÷ 4 =	7 x 4 =	7 x 4 =
4 x 7 =	28 ÷ 4 =	28 ÷ 7 =	4 x 7 =

Time: Total: ☺ 😐 ☹

1 times tables	2 times tables	3 times tables	4 times tables	5 times tables	6 times tables	7 times tables	8 times tables	9 times tables	10 times tables	11 times tables	12 times tables
1 × 1 = 1	1 × 2 = 2	1 × 3 = 3	1 × 4 = 4	1 × 5 = 5	1 × 6 = 6	1 × 7 = 7	1 × 8 = 8	1 × 9 = 9	1 × 10 = 10	1 × 11 = 11	1 × 12 = 12
2 × 1 = 2	2 × 2 = 4	2 × 3 = 6	2 × 4 = 8	2 × 5 = 10	2 × 6 = 12	2 × 7 = 14	2 × 8 = 16	2 × 9 = 18	2 × 10 = 20	2 × 11 = 22	2 × 12 = 24
3 × 1 = 3	3 × 2 = 6	3 × 3 = 9	3 × 4 = 12	3 × 5 = 15	3 × 6 = 18	3 × 7 = 21	3 × 8 = 24	3 × 9 = 27	3 × 10 = 30	3 × 11 = 33	3 × 12 = 36
4 × 1 = 4	4 × 2 = 8	4 × 3 = 12	4 × 4 = 16	4 × 5 = 20	4 × 6 = 24	4 × 7 = 28	4 × 8 = 32	4 × 9 = 36	4 × 10 = 40	4 × 11 = 44	4 × 12 = 48
5 × 1 = 5	5 × 2 = 10	5 × 3 = 15	5 × 4 = 20	5 × 5 = 25	5 × 6 = 30	5 × 7 = 35	5 × 8 = 40	5 × 9 = 45	5 × 10 = 50	5 × 11 = 55	5 × 12 = 60
6 × 1 = 6	6 × 2 = 12	6 × 3 = 18	6 × 4 = 24	6 × 5 = 30	6 × 6 = 36	6 × 7 = 42	6 × 8 = 48	6 × 9 = 54	6 × 10 = 60	6 × 11 = 66	6 × 12 = 71
7 × 1 = 7	7 × 2 = 14	7 × 3 = 21	7 × 4 = 28	7 × 5 = 35	7 × 6 = 42	7 × 7 = 49	7 × 8 = 56	7 × 9 = 63	7 × 10 = 70	7 × 11 = 77	7 × 12 = 84
8 × 1 = 8	8 × 2 = 16	8 × 3 = 24	8 × 4 = 32	8 × 5 = 40	8 × 6 = 48	8 × 7 = 56	8 × 8 = 64	8 × 9 = 72	8 × 10 = 80	8 × 11 = 88	8 × 12 = 96
9 × 1 = 9	9 × 2 = 18	9 × 3 = 27	9 × 4 = 36	9 × 5 = 45	9 × 6 = 54	9 × 7 = 63	9 × 8 = 72	9 × 9 = 81	9 × 10 = 90	9 × 11 = 99	9 × 12 = 108
10 × 1 = 10	10 × 2 = 20	10 × 3 = 30	10 × 4 = 40	10 × 5 = 50	10 × 6 = 60	10 × 7 = 70	10 × 8 = 80	10 × 9 = 90	10 × 10 = 100	10 × 11 = 110	10 × 12 = 120
11 × 1 = 11	11 × 2 = 22	11 × 3 = 33	11 × 4 = 44	11 × 5 = 55	11 × 6 = 66	11 × 7 = 77	11 × 8 = 88	11 × 9 = 99	11 × 10 = 110	11 × 11 = 121	11 × 12 = 131
12 × 1 = 12	12 × 2 = 24	12 × 3 = 36	12 × 4 = 48	12 × 5 = 60	12 × 6 = 72	12 × 7 = 84	12 × 8 = 96	12 × 9 = 108	12 × 10 = 120	12 × 11 = 132	12 × 12 = 144

144 facts

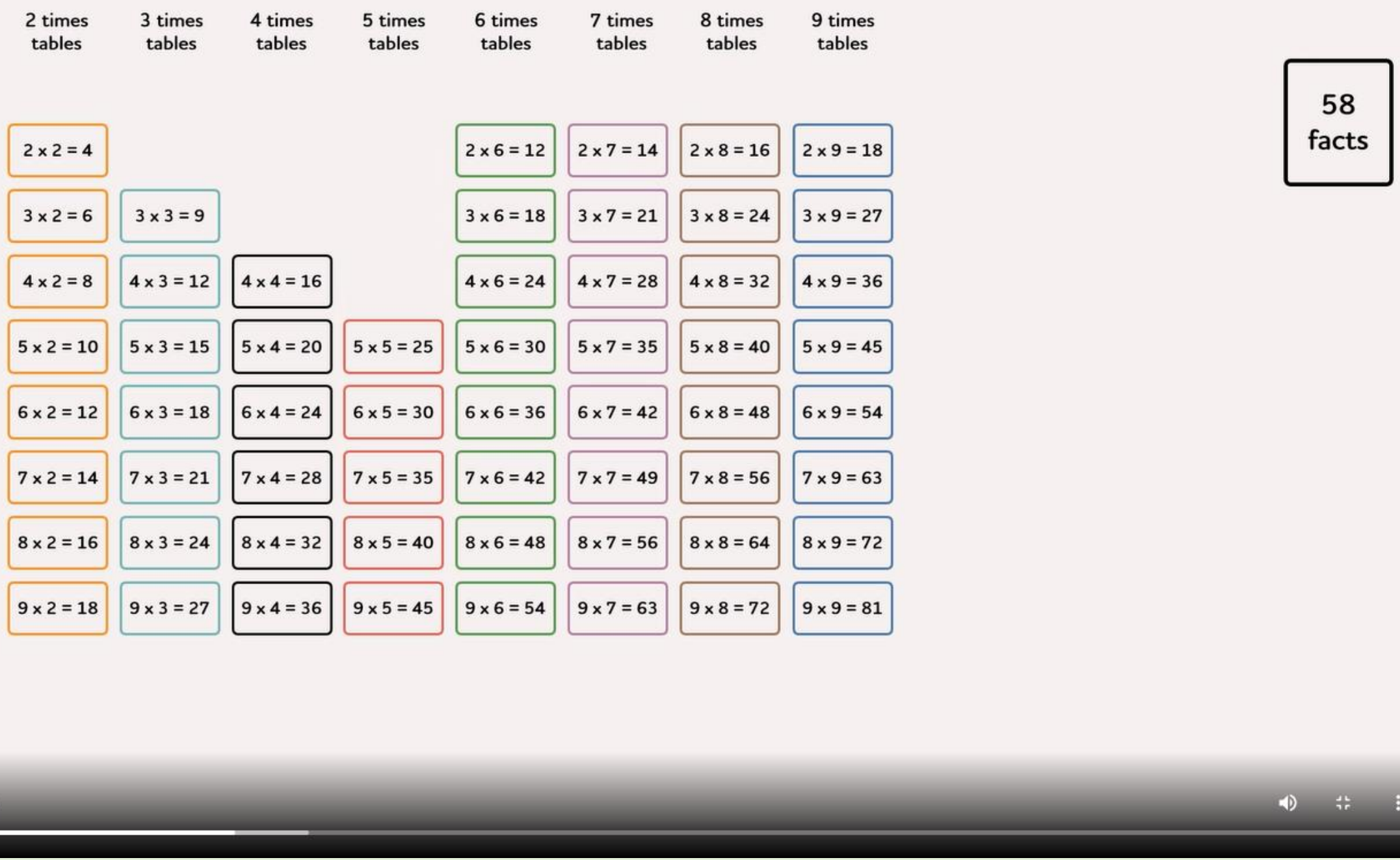
15:48 / 21:13

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

Prioritise facts needed for short division.

HTO X O
TH HTO X O

2 times tables	3 times tables	4 times tables	5 times tables	6 times tables	7 times tables	8 times tables	9 times tables
1 x 2 = 2	1 x 3 = 3	1 x 4 = 4	1 x 5 = 5	1 x 6 = 6	1 x 7 = 7	1 x 8 = 8	1 x 9 = 9
2 x 2 = 4	2 x 3 = 6	2 x 4 = 8	2 x 5 = 10	2 x 6 = 12	2 x 7 = 14	2 x 8 = 16	2 x 9 = 18
3 x 2 = 6	3 x 3 = 9	3 x 4 = 12	3 x 5 = 15	3 x 6 = 18	3 x 7 = 21	3 x 8 = 24	3 x 9 = 27
4 x 2 = 8	4 x 3 = 12	4 x 4 = 16	4 x 5 = 20	4 x 6 = 24	4 x 7 = 28	4 x 8 = 32	4 x 9 = 36
5 x 2 = 10	5 x 3 = 15	5 x 4 = 20	5 x 5 = 25	5 x 6 = 30	5 x 7 = 35	5 x 8 = 40	5 x 9 = 45
6 x 2 = 12	6 x 3 = 18	6 x 4 = 24	6 x 5 = 30	6 x 6 = 36	6 x 7 = 42	6 x 8 = 48	6 x 9 = 54
7 x 2 = 14	7 x 3 = 21	7 x 4 = 28	7 x 5 = 35	7 x 6 = 42	7 x 7 = 49	7 x 8 = 56	7 x 9 = 63
8 x 2 = 16	8 x 3 = 24	8 x 4 = 32	8 x 5 = 40	8 x 6 = 48	8 x 7 = 56	8 x 8 = 64	8 x 9 = 72
9 x 2 = 18	9 x 3 = 27	9 x 4 = 36	9 x 5 = 45	9 x 6 = 54	9 x 7 = 63	9 x 8 = 72	9 x 9 = 81


2 times tables
3 times tables
4 times tables
5 times tables
6 times tables
7 times tables
8 times tables
9 times tables
58 facts
2 x 2 = 4
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
3 x 2 = 6
3 x 3 = 9
3 x 6 = 18
3 x 7 = 21
3 x 8 = 24
3 x 9 = 27
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
6 x 2 = 12
6 x 3 = 18
6 x 4 = 24
6 x 5 = 30
6 x 6 = 36
6 x 7 = 42
6 x 8 = 48
6 x 9 = 54
7 x 2 = 14
7 x 3 = 21
7 x 4 = 28
7 x 5 = 35
7 x 6 = 42
7 x 7 = 49
7 x 8 = 56
7 x 9 = 63
8 x 2 = 16
8 x 3 = 24
8 x 4 = 32
8 x 5 = 40
8 x 6 = 48
8 x 7 = 56
8 x 8 = 64
8 x 9 = 72
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
4:57 / 21:13

2 times tables	3 times tables	4 times tables	5 times tables	6 times tables	7 times tables	8 times tables	9 times tables
2 x 2 = 4							
3 x 2 = 6	3 x 3 = 9						
4 x 2 = 8	4 x 3 = 12	4 x 4 = 16					
5 x 2 = 10	5 x 3 = 15	5 x 4 = 20	5 x 5 = 25				
6 x 2 = 12	6 x 3 = 18	6 x 4 = 24	6 x 5 = 30	6 x 6 = 36			
7 x 2 = 14	7 x 3 = 21	7 x 4 = 28	7 x 5 = 35	7 x 6 = 42	7 x 7 = 49		
8 x 2 = 16	8 x 3 = 24	8 x 4 = 32	8 x 5 = 40	8 x 6 = 48	8 x 7 = 56	8 x 8 = 64	
9 x 2 = 18	9 x 3 = 27	9 x 4 = 36	9 x 5 = 45	9 x 6 = 54	9 x 7 = 63	9 x 8 = 72	9 x 9 = 81

36 facts

Mastering Number Key Stage 2

Developed by the NCTEM and Maths Hubs:

"The project enables pupils in Years 4 and 5 to develop fluency in multiplication and division facts, and a confidence and flexibility with number that exemplifies good number sense."



GOING FOR GOLD





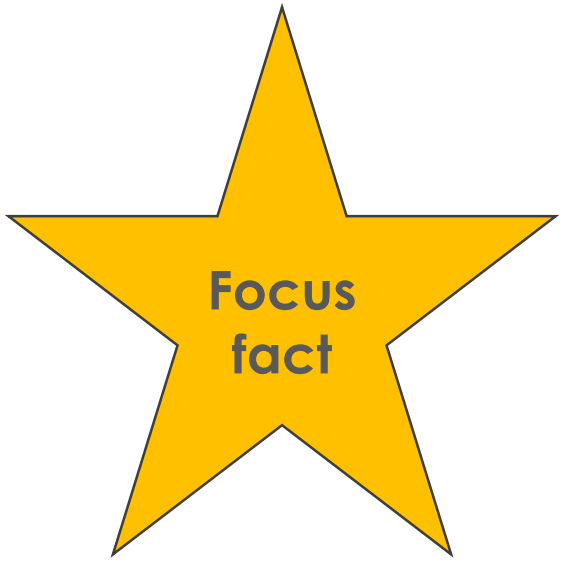
Focus facts of the week

2 × 2							
2 × 3	3 × 3						
2 × 4	3 × 4	4 × 4					
2 × 5	3 × 5	4 × 5	5 × 5				
2 × 6	3 × 6	4 × 6	5 × 6	6 × 6			
2 × 7	3 × 7	4 × 7	5 × 7	6 × 7	7 × 7		
2 × 8	3 × 8	4 × 8	5 × 8	6 × 8	7 × 8	8 × 8	
2 × 9	3 × 9	4 × 9	5 × 9	6 × 9	7 × 9	8 × 9	9 × 9

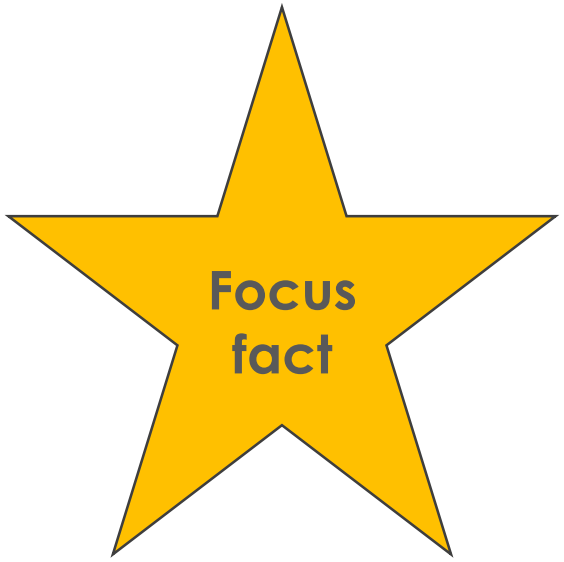
3 × 4 = 12

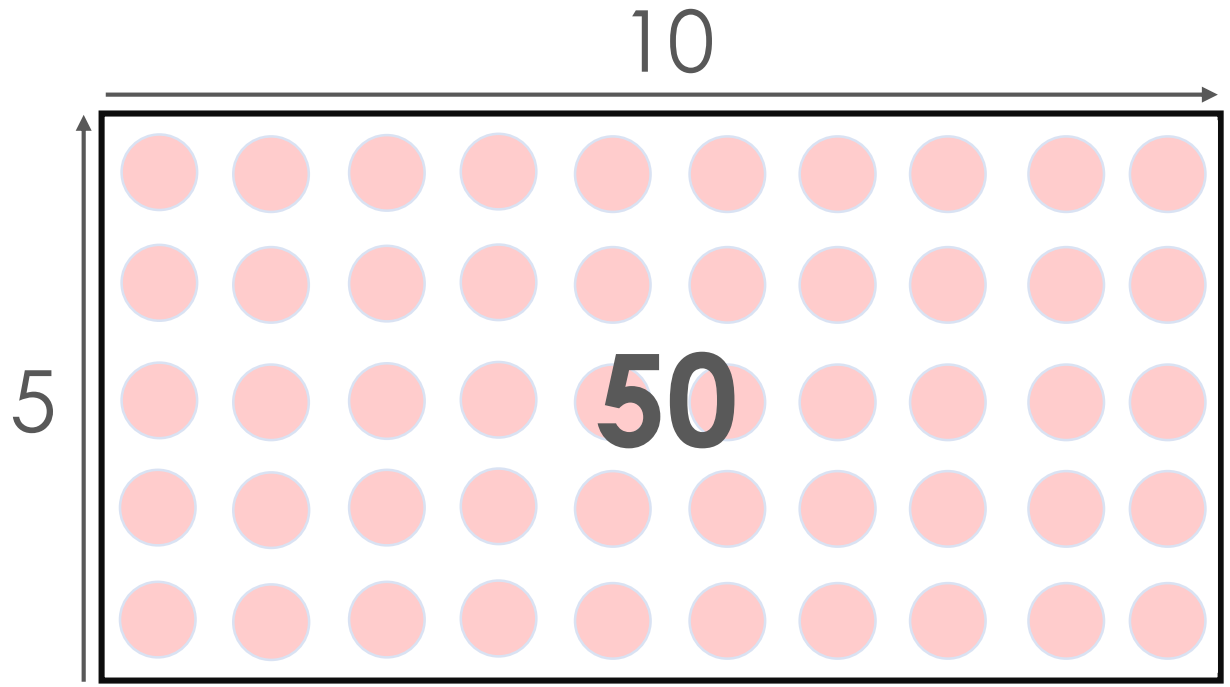
5 × 9 = 45

GOING FOR GOLD

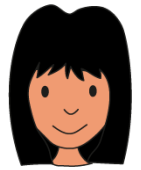


$$5 \times 9 = 45$$
$$9 \times 5 = 45$$

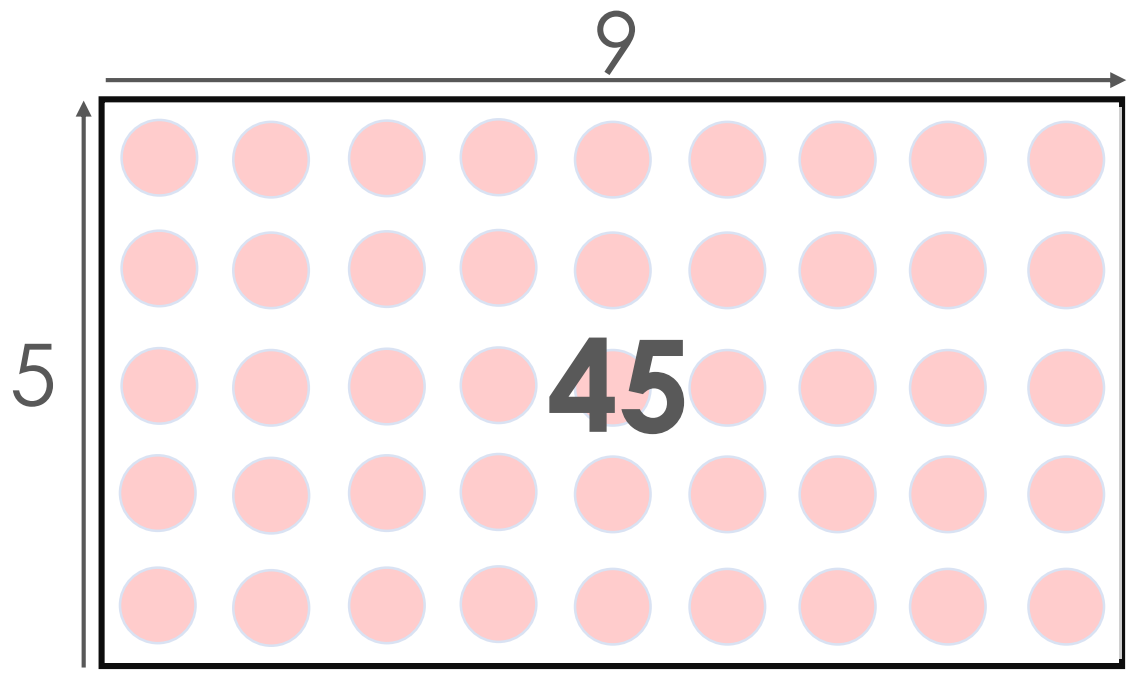




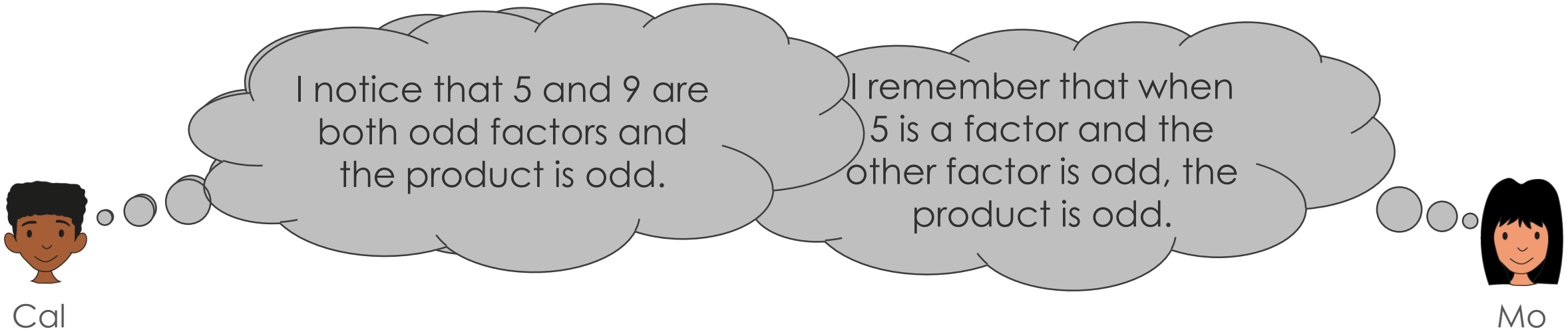
How do the arrays help us to understand WHY 5 × 9 = 45?

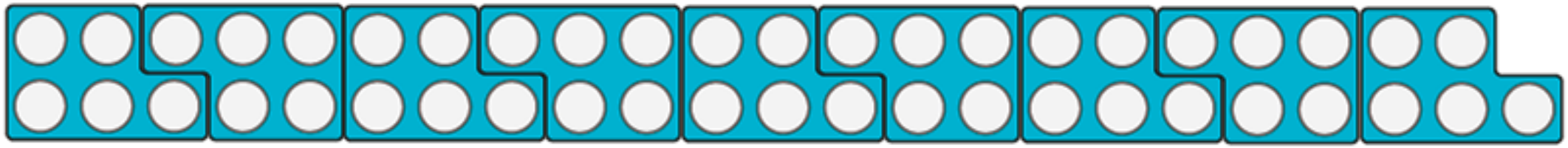


$5 \times 10 = 50$



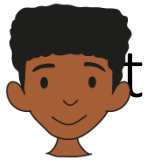
$5 \times 9 = 45$





$$5 \times 9 = 45$$

Where none of the factors are even, the product is odd.



Cal

40 is 4, ten times.

t's that are greater than

16 is 4, four times.



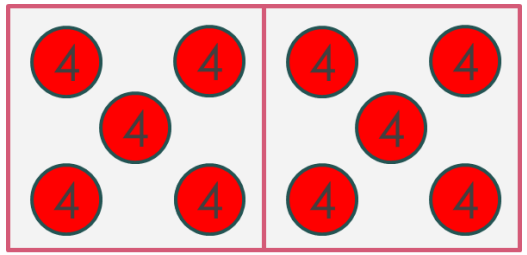
Fin

40

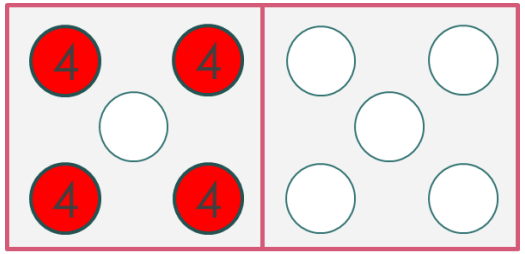
16

56

4×10

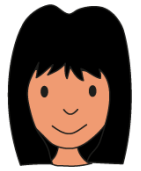


4×4



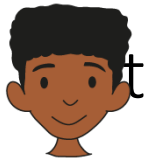
4×14

So, 56 MUST be a multiple of 4.



Mo

Let’s explore some more multiples of 4 that are greater than 40.



Cal

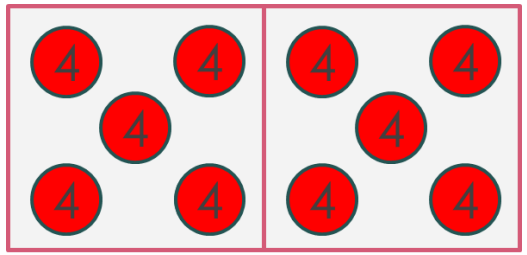
40 is 4 ten times.

28 is 4 seven times.



Fin

4×10



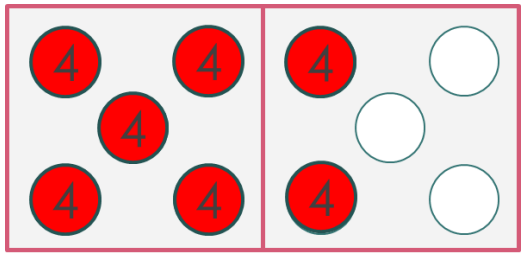
40

28

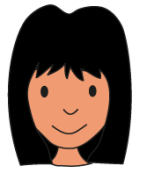
68

4×17

4×7



So, 68 MUST be 4, how many times?



Mo

t's practise.



40 is 4, ten times.

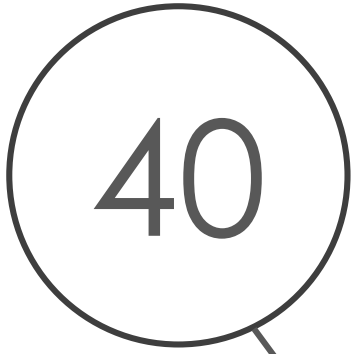
Cal

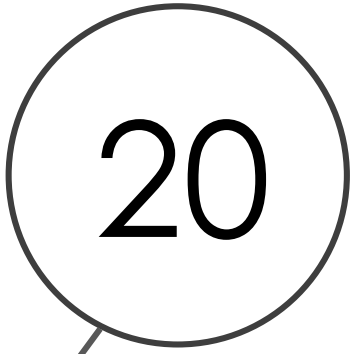
20 is 4, how many times?



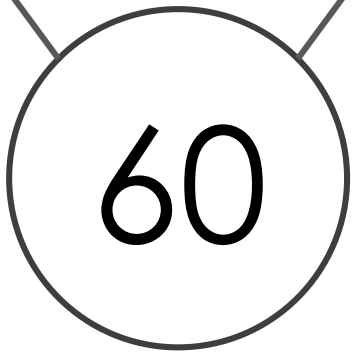
Fin

4×10



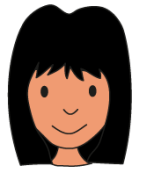


4×5



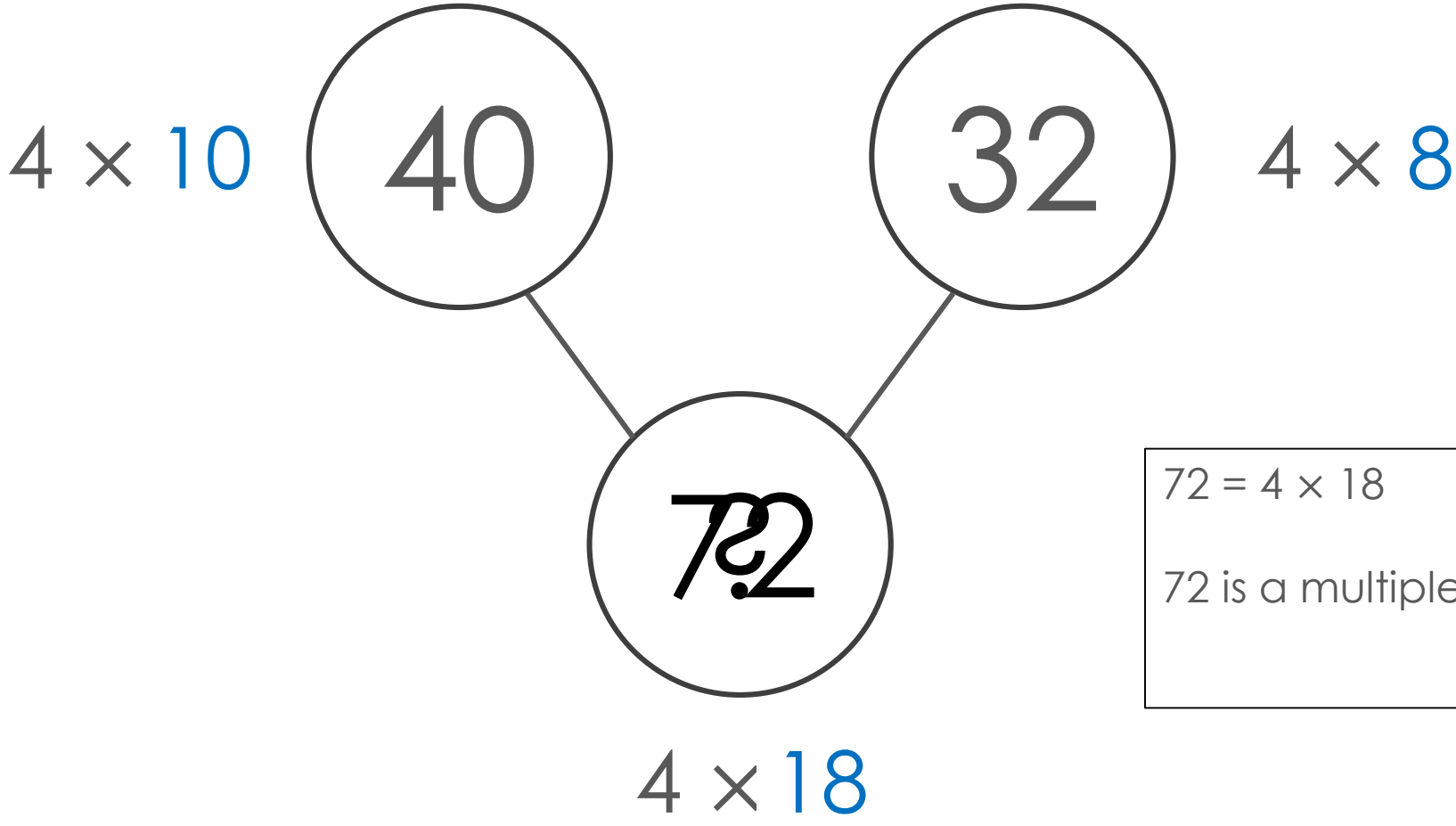
4×15

So, 60 MUST be 4, how many times?



Mo

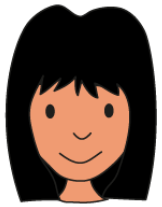
Let’s practise.



72 = 4 × 18

72 is a multiple of 4

Can you copy and complete the part–part–whole model and equations?



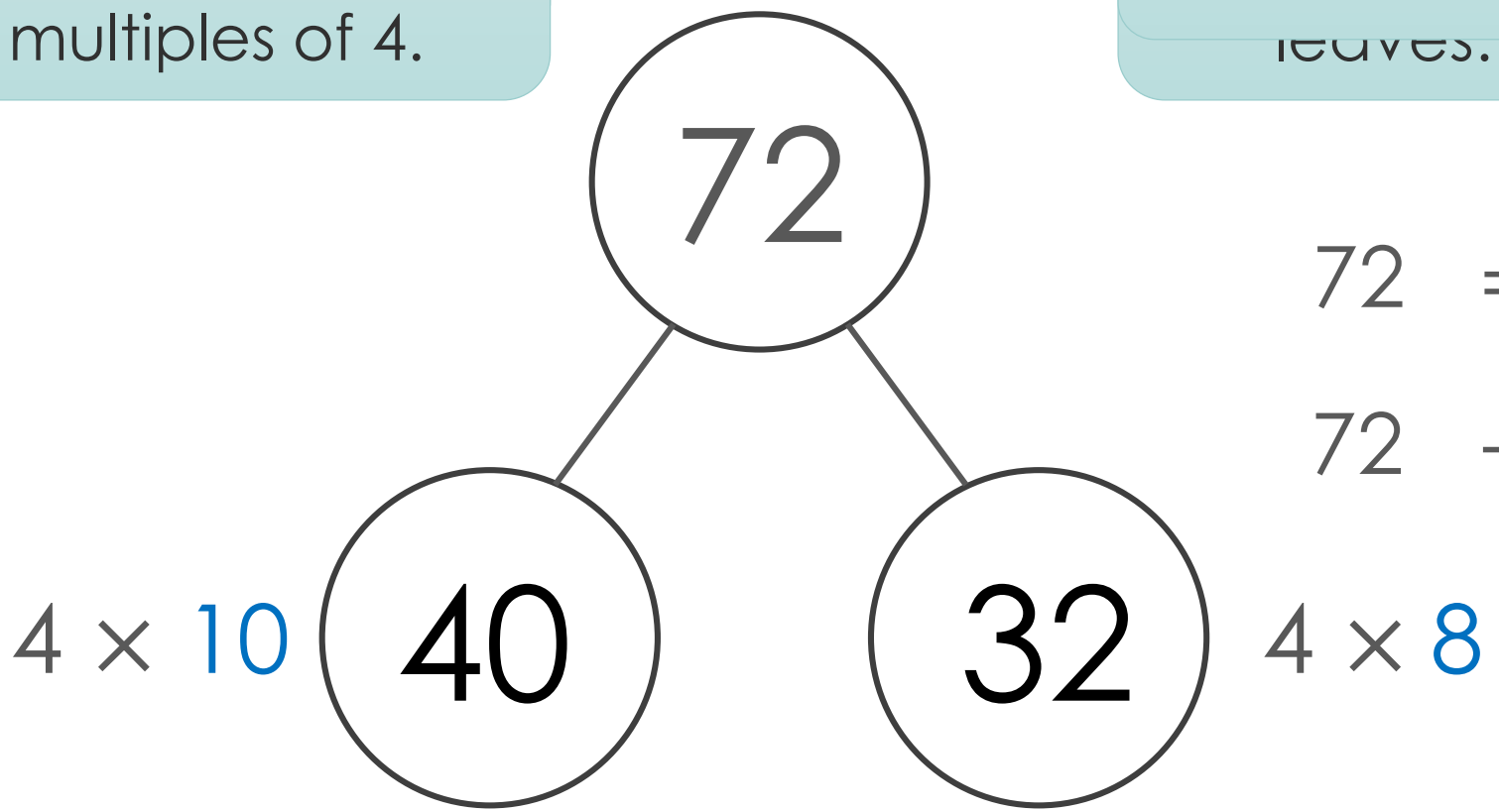
Mo

I want to partition 72 into smaller multiples of 4.

How many 4s are there in 72?



Cal



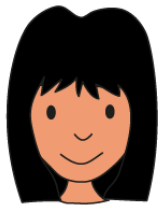
$72 = 4 \times \boxed{18}$

$72 \div 4 = \boxed{18}$

Can y… …l
64 ca…

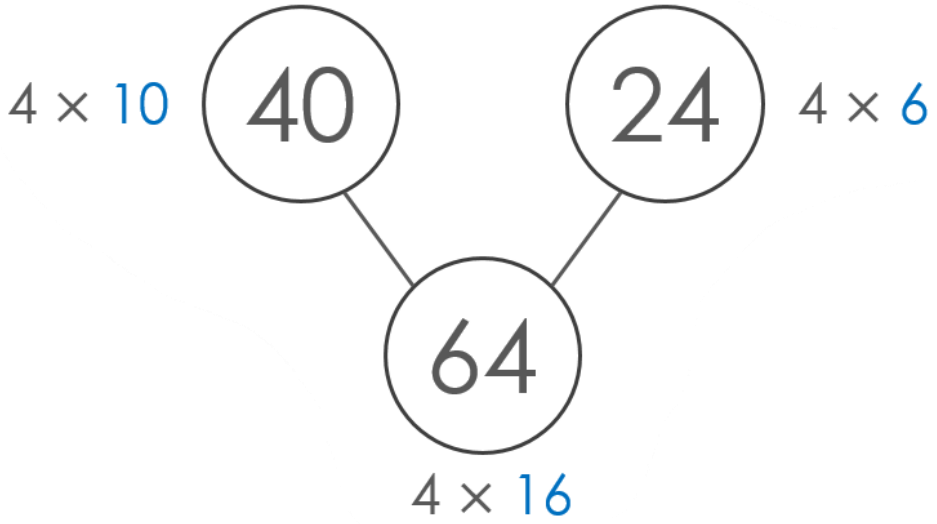
My representation shows how many 4s there are in 64. There are sixteen 4s in 64.

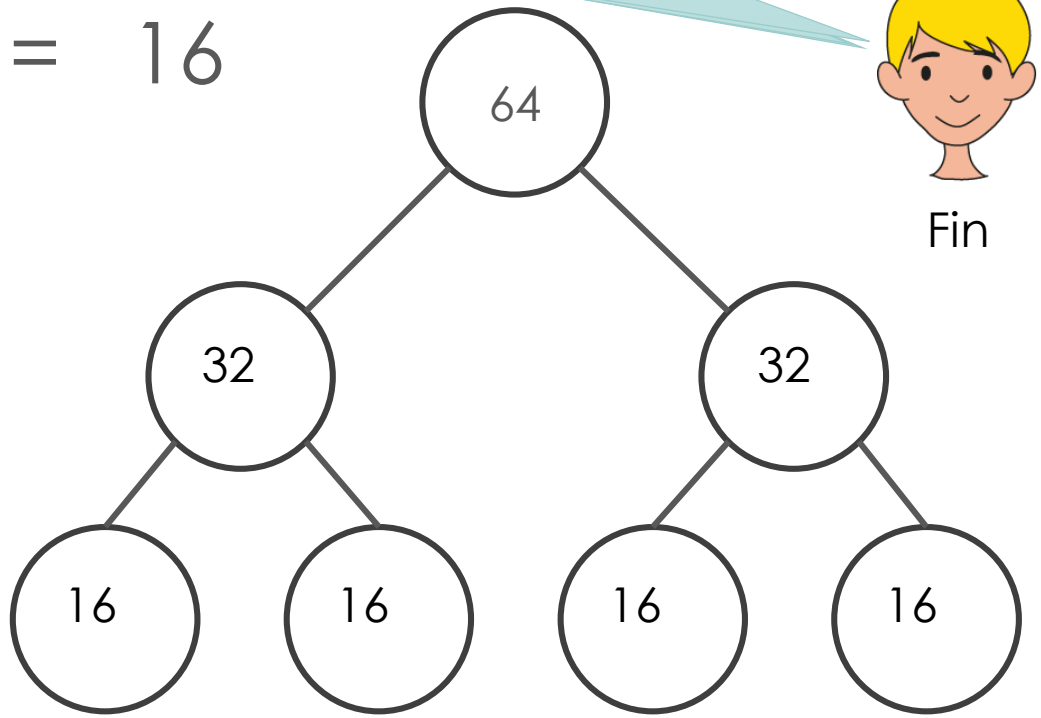
I know that 64 is a multiple of 4 because halving it twice gives a whole number.



Mo

$64 \div 4 = 16$



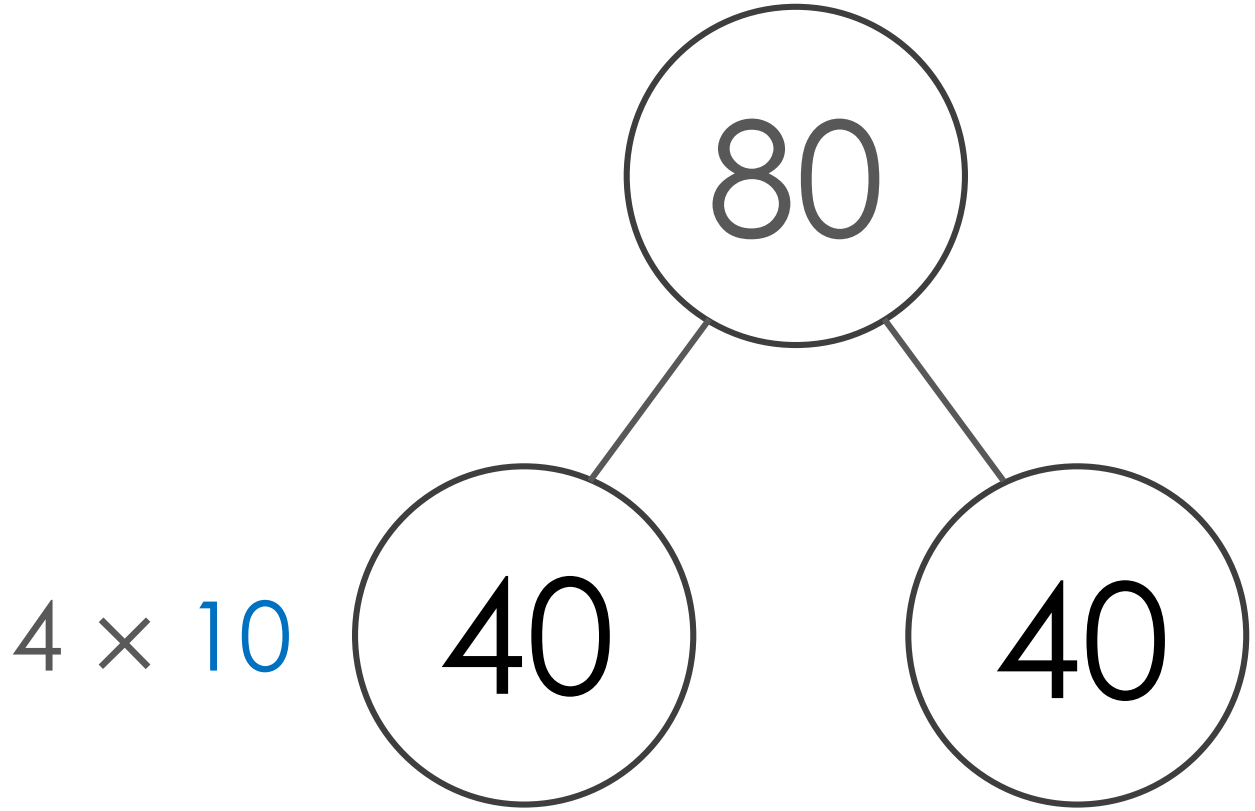


Fin

If a number is a multiple of 4, halving twice gives a whole number.

Can you use this part–part–whole model to prove that 80 IS a multiple of 4?

4×20



4×10

4×10

I wonder if 80 is a multiple of 4...

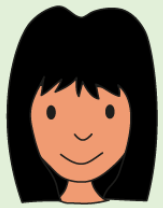


$80 = 4 \times \boxed{20}$

80 is a multiple of 4 ✓

I know that 8 is a multiple of 4, so 8 tens MUST be a multiple of 4!

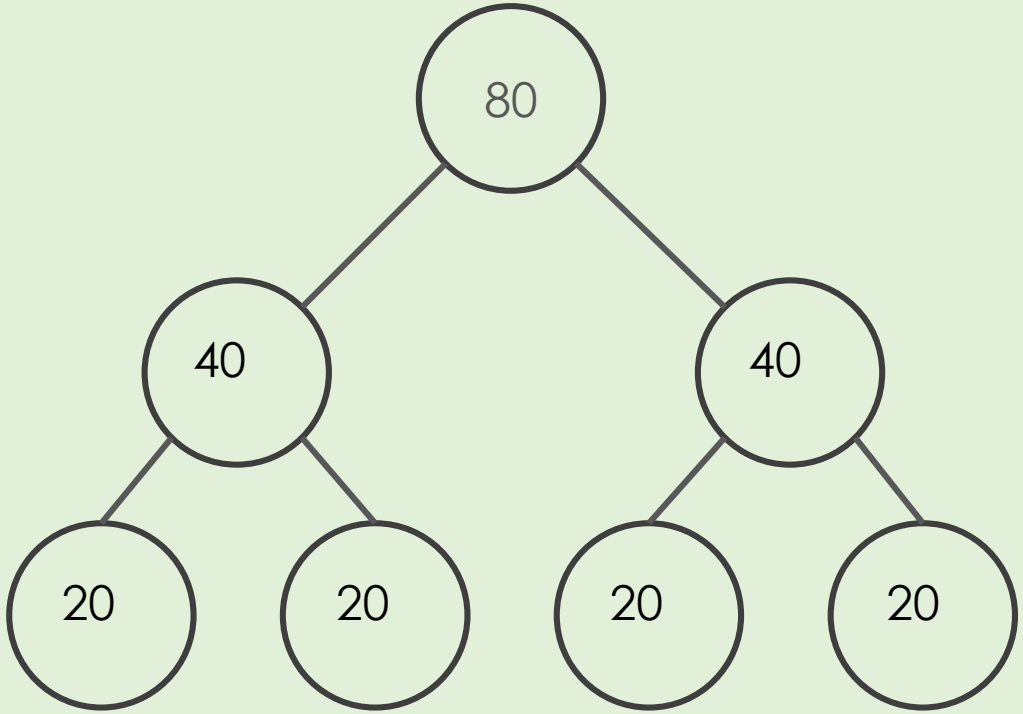
mplete this part–part–whole
) is a multiple of 4 by halving
lving again?



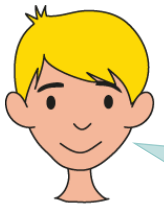
Mo



Fin



If a number is a multiple of 4, halving twice gives a whole number.



Fin

Is 78 a multiple of 4?
How do you know?

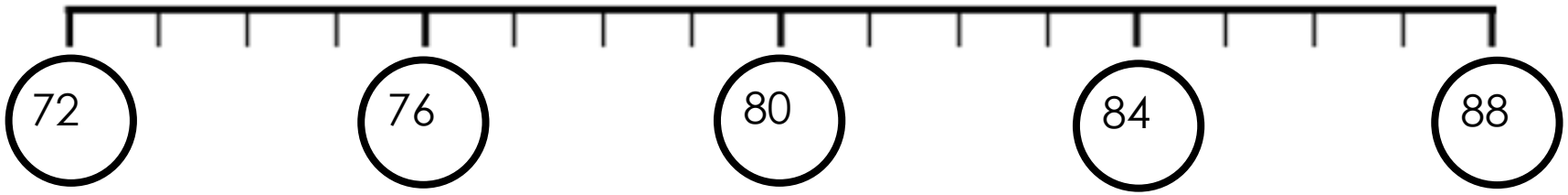
Is 86 a multiple of 4?
How do you know?



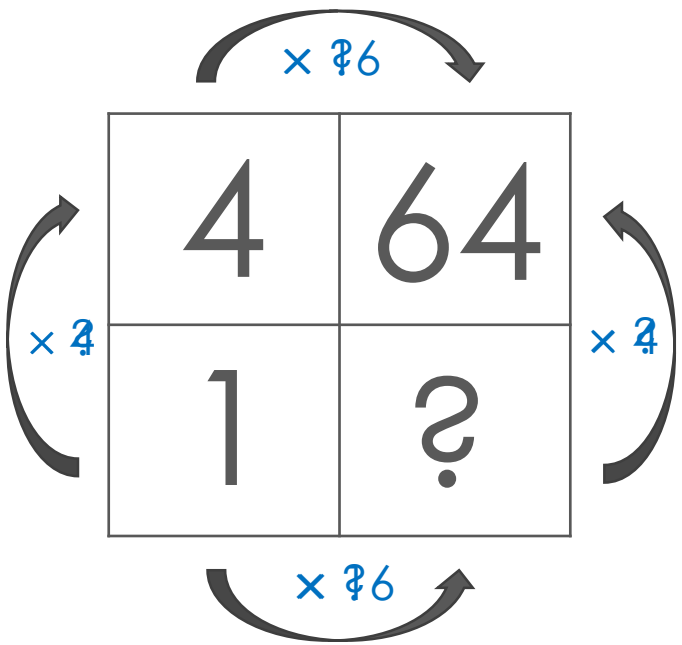
Cal

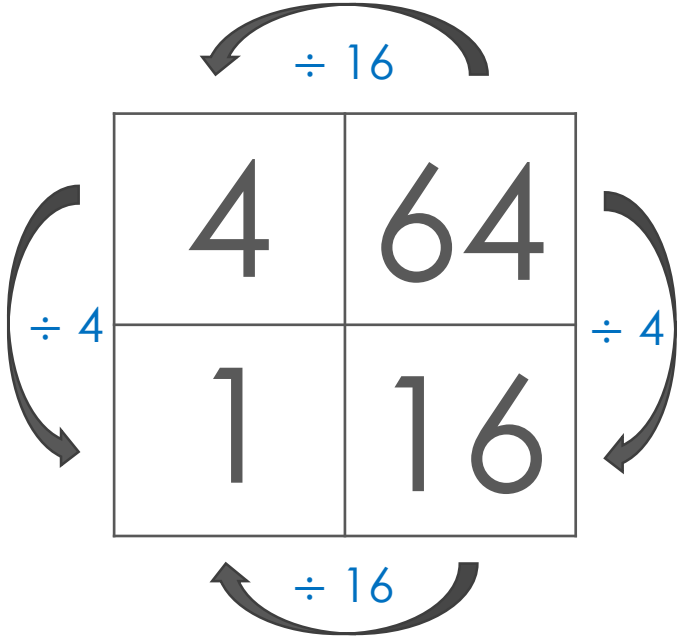
$80 = 4 \times \boxed{20}$

80 is a multiple of 4 ✓



Copy and complete this ratio table.

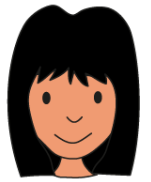




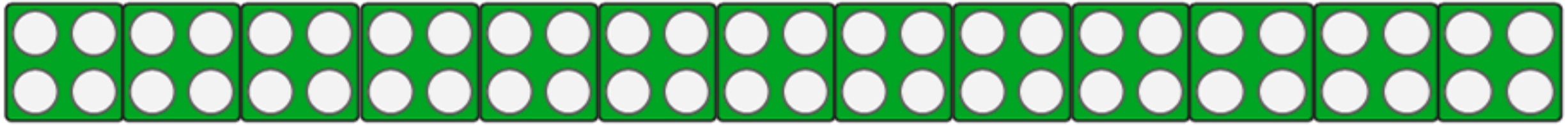


Fin

Can you write down a 3-digit odd number? Say '___ is NOT a multiple of 4 because it is an odd number'.



Mo



4 8 12 16 20 24 28 32 36 40 44 48 52

So, NO odd numbers are multiples of 4.

er?



Cal

Where at least one of the factors is even, the product is even.

Sort the numbers.

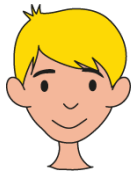


Multiples of 4	NOT multiples of 4

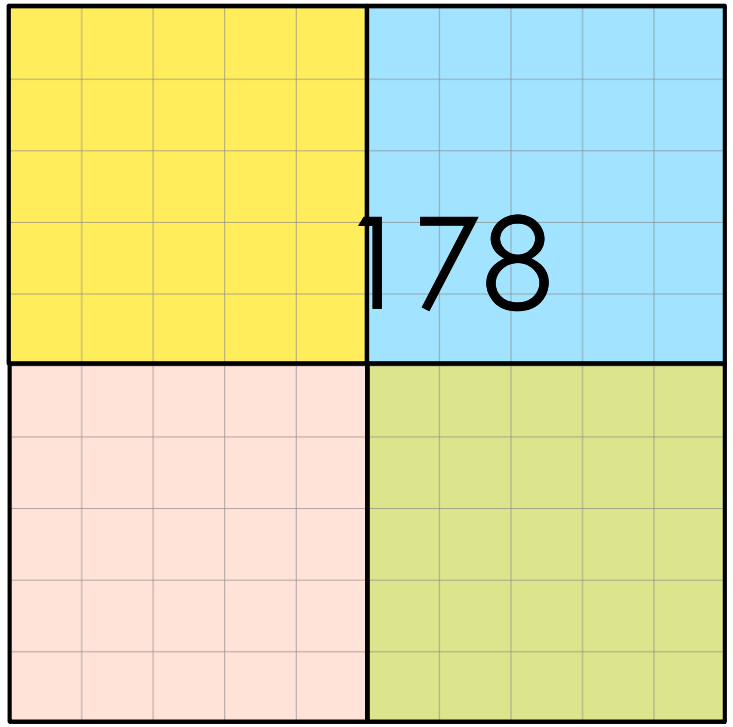
This bar model shows 100 divided into 4 equal parts.
Can you copy and complete the bar model, and write corresponding multiplication and division equations?

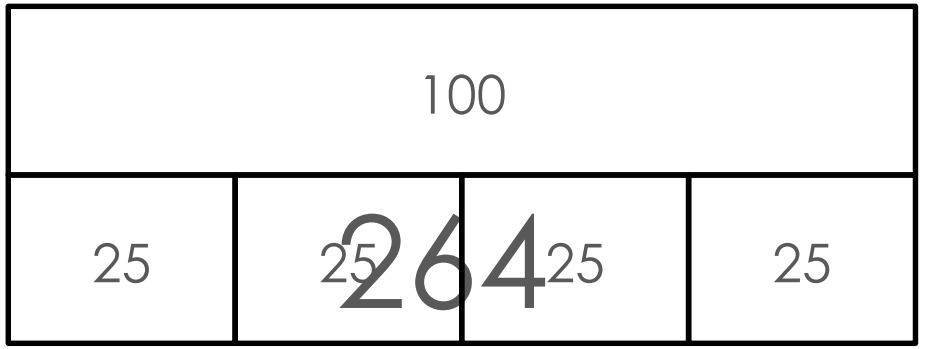
So, I'm thinking of 100 divided by 4. That is the same as finding one quarter of 100.

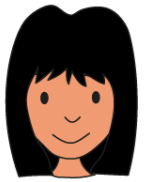
...ative relationship ... multiple of 4?



Fin







Mo

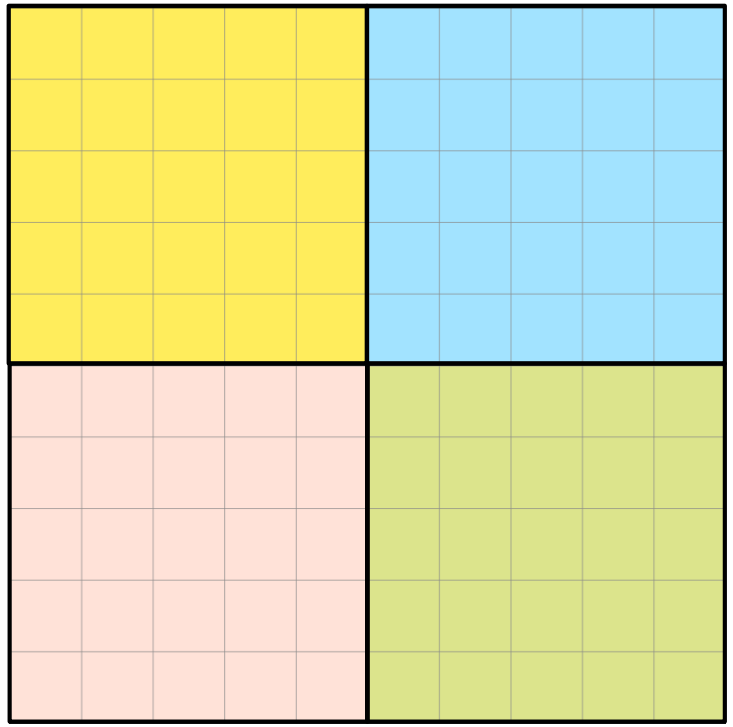
$100 = 4 \times 25$

$100 = 25 \times 4$

$100 \div 4 = 25$

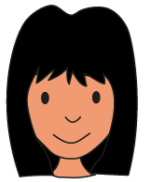
$100 \div 25 = 4$

I know 100 is a multiple of 4 because when I halve it and halve it again, I have a whole number.



100			
50		50	
25	25	25	25

If a number is a multiple of 4, halving twice gives a whole number.



Mo has sorted numbers into two columns.

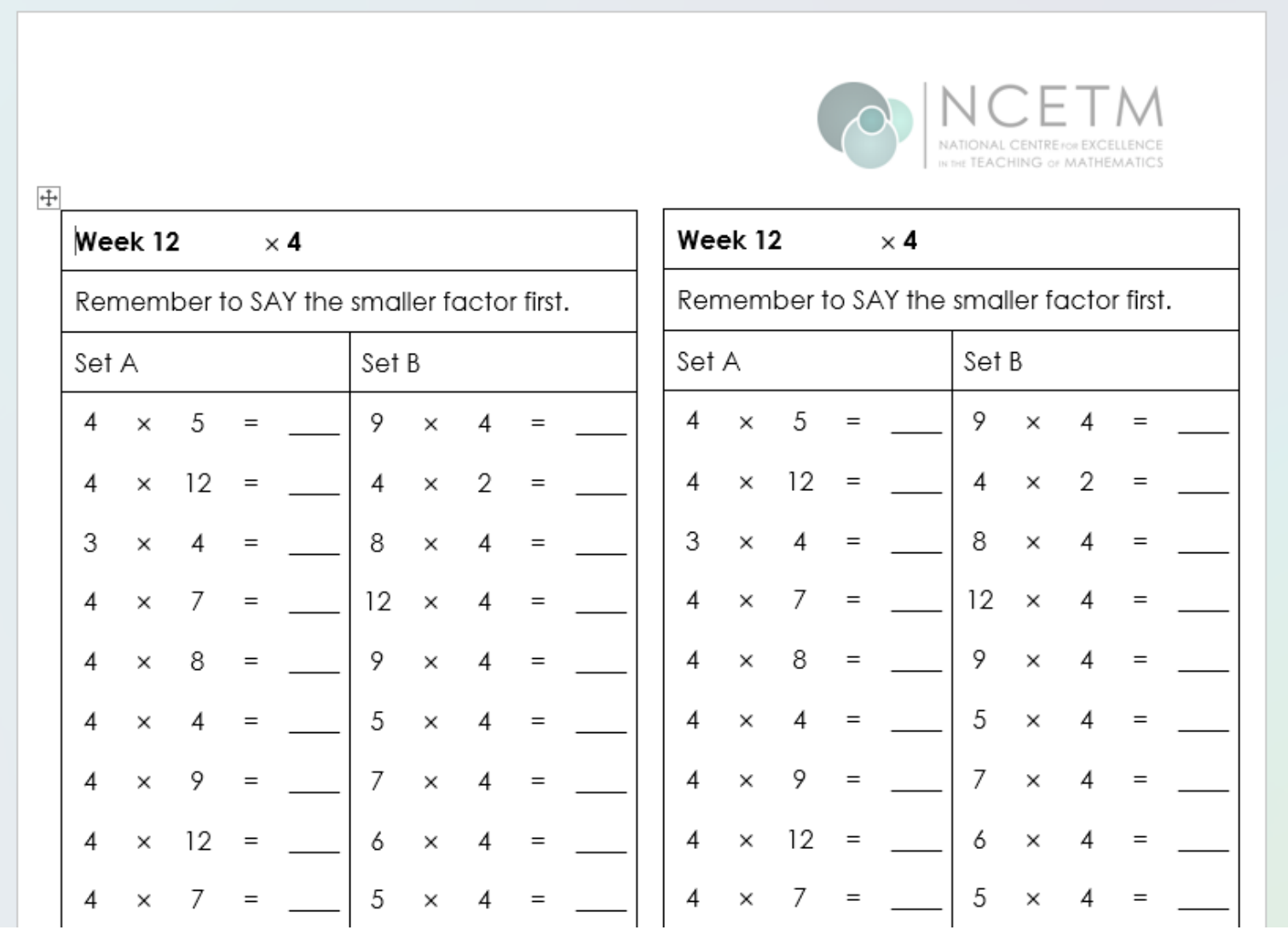
Let's work together to check if there are any mistakes.

Multiples of 4	NOT multiples of 4
92 ✓	91 ✓
82 ✗	80 ✗
100 ✓	106 ✓
602 ✗	799 ✓
43 ✗	74 ✓
987,300 ✓	859,433 ✓

Copy this table and write all the numbers in the correct places.

Multiples of 4	NOT multiples of 4
92	91
100	106
987,300	799
80	74
	859,433
	82
	602
	43

Work through the Week 12 fact retrieval worksheet provided.



NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Week 12	**× 4**										
Remember to SAY the smaller factor first.											
Set A							Set B				
4	×	5	=	___			9	×	4	=	___
4	×	12	=	___			4	×	2	=	___
3	×	4	=	___			8	×	4	=	___
4	×	7	=	___			12	×	4	=	___
4	×	8	=	___			9	×	4	=	___
4	×	4	=	___			5	×	4	=	___
4	×	9	=	___			7	×	4	=	___
4	×	12	=	___			6	×	4	=	___
4	×	7	=	___			5	×	4	=	___

Week 12	**× 4**										
Remember to SAY the smaller factor first.											
Set A							Set B				
4	×	5	=	___			9	×	4	=	___
4	×	12	=	___			4	×	2	=	___
3	×	4	=	___			8	×	4	=	___
4	×	7	=	___			12	×	4	=	___
4	×	8	=	___			9	×	4	=	___
4	×	4	=	___			5	×	4	=	___
4	×	9	=	___			7	×	4	=	___
4	×	12	=	___			6	×	4	=	___
4	×	7	=	___			5	×	4	=	___

Multiplication Tables Check (MTC)

MTC	2022	2023	2024
Bridgetown Average	20.35	21.4	21.3
National Average	19.8	20.2	20.6

Multiplication Tables Check (MTC)

- The MTC determines if Year 4 children can fluently recall their multiplication tables.

- They are designed to help schools identify which children require more support to learn their times tables.

- There is no 'pass' rate or threshold which means that, unlike the Phonics Screening Check, children will not be expected to re-sit the check.

- The Department for Education (DfE) will create a report about the overall results across all schools in England, not individual schools.

When will the check will take place?

- There will be a 2 week window from Monday 2 June 2025 for schools to administer the check.
- There is no set day to administer the check and children are not expected to take the check at the same time.
- All eligible Year 4 children in England will be required to take the check. Some children will be eligible for specific arrangements.

How is the check is carried out?

- The check will be fully digital. Answers will be entered using an ipad.
- Usually, the check will take less than 5 minutes for each child.
- The children will have 6 seconds from the time the question appears to input their answer.
- There will be a total of 25 questions with a 3 second pause in-between questions.
- There will be 3 practice questions before the check begins.

MTC questions

- Each child will be randomly assigned a set of questions
- There will only be multiplication questions in the check, not division facts.
- The 6, 7, 8, 9 and 12 times tables are more likely to be asked.
- Reversal of questions (e.g. 8 x 6 and 6 x 8) will not be asked in the same check.
- Children will not see their individual results when they complete the check.

MTC questions

The Standards and Testing Agency (STA) state that they are classifying the multiplication tables by the first number (multiplier) in the question. For example, 8 x 3 would fall within the 8 times table.

5.2.1 Table 1 – Multiplication table limits in the MTC

Multiplication Table	Minimum number of items in each form	Maximum number of items in each form
1	Not applicable	Not applicable
2	0	2
3	1	3
4	1	3
5	1	3
6	2	4
7	2	4
8	2	4
9	2	4
10	0	2
11	1	3
12	2	4

Access arrangements

Some children will be eligible for specific arrangements; a child can be assigned more than one access arrangement, if required.

- Colour contrast;
- Font size adjustment;
- 'Next' button (alternative to 3-second pause);
- Removing on-screen number pad;
- An adult to input answers;
- Audio version;
- Audible time alert.

How to support your child at home:

- When learning tables, break them down into small chunks, 2/3 new facts at a time.
- Regular practice 'little and often'.
- Opportunities for retrieval 'use them or lose them.'
- Times tables songs are helpful.

How to support your child at home:

- https://www.timestables.co.uk/
- https://www.topmarks.co.uk/maths-games/hit-the-button
- https://www.topmarks.co.uk/number-facts/number-fact-families

https://phet.colorado.edu/sims/html/arithmetic/latest/arithmetic_en.html

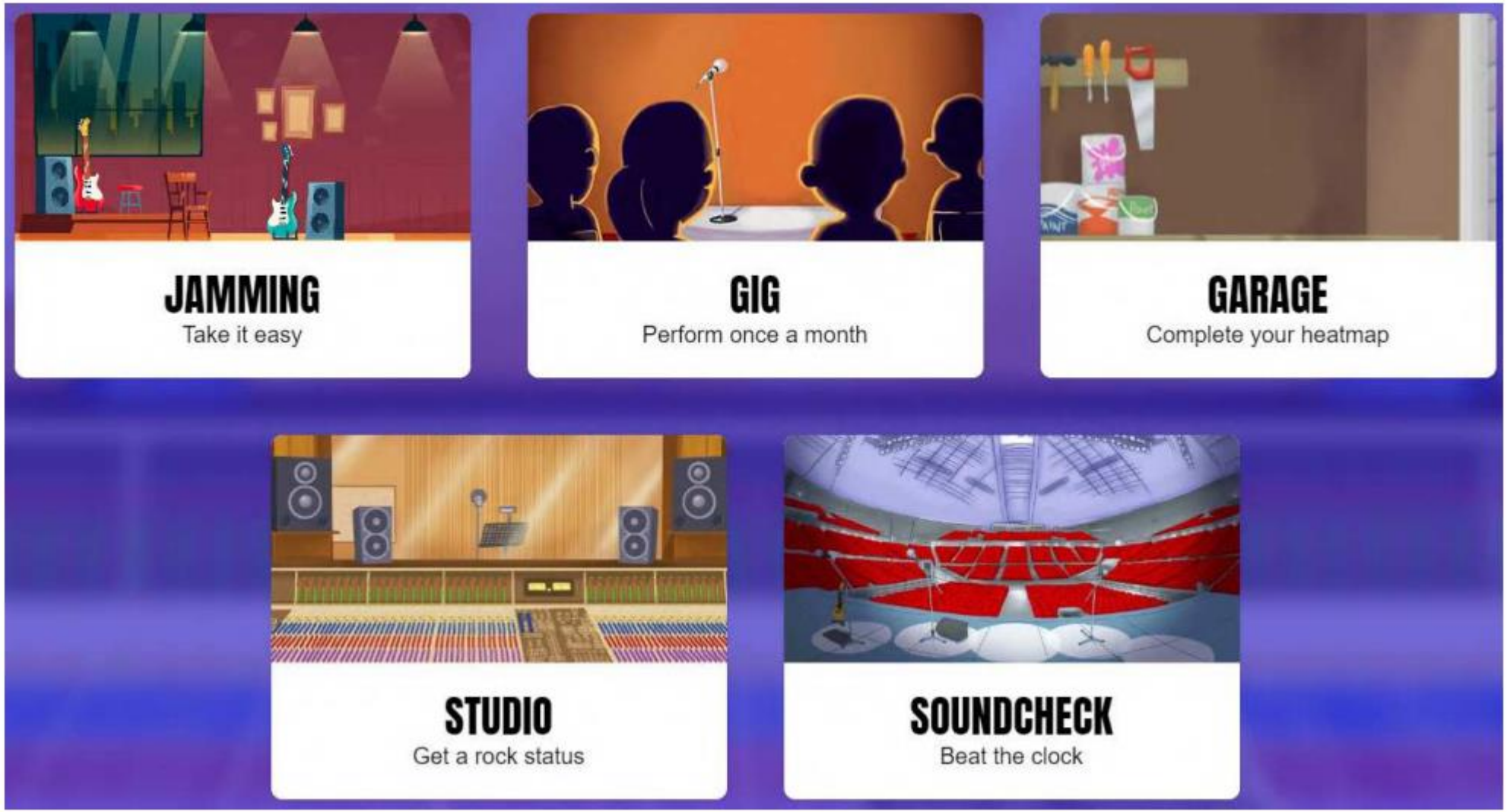
How to support your child at home:

Times Tables Song Collections

https://www.bbc.co.uk/teach/topics/cnep90jwjj7t

https://www.youtube.com/playlist?list=PLaSZ7kwwxKqXpdLA0hIA9fa8RVmRC32pv

How to support your child at home:



TT Rock Stars

https://www.youtube.com/watch?v=-ZxZbRVvbYM

Single Player	
Jamming 4 or 8 coins/correct answer	The only game mode without a timer, players chose the table and operation (× or ÷ or both) they want to practise. Answer 10, 20 or 30 questions.
Gig 10 coins per correct answer	Gig games last 5 minutes and contain up to 100 questions, which come in 'waves', starting with the 10s, then the 2s, 5s, 3s, 4s, 8s, 6s, 7s, 9s, 11s and 12s. Novices are not expected to get past the 5s. Gigs provide the child (and their teacher) with a simple measure of their current skills, which is why learners should concentrate fully for the whole Gig as they won't get another try until next month.
Garage 10 coins per correct answer	Players are given a personalised set of 6 multiplication questions (and their matching division questions) in each round. The questions they get keep adjusting to provide the best fit for every learner's needs. This is probably the best game made for improving their recall while they're still learning.
Studio 1 coin per correct answer	Here your child earns their Rock Status, which is based on their Studio Speed. The faster they are the better their status. Studio Speed is the average of their most recent 10 Studio games. Suitable for confident players.
Soundcheck 5 coins per correct answer	Soundcheck games ask 25 multiplication questions (up to 12×12), allowing 6 seconds for each question. Suitable for confident players.