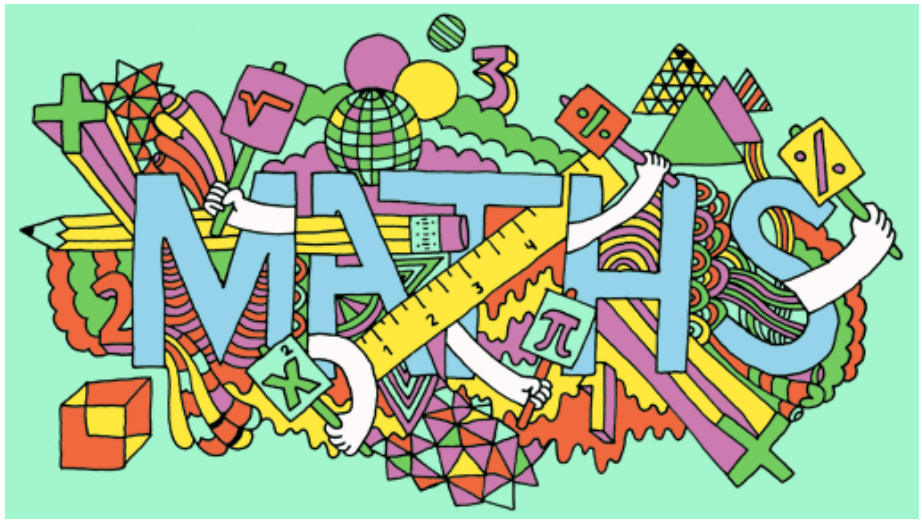
Marvellous Maths



Preparing for the Year 4 Multiplication Times Table Check

February 2024

Aims for today

To share information about the Year 4 Multiplication Times Tables Check (MTC).

To explore how we're teaching times tables in school and how you can support your child at home.

To join your child in class and learn some multiplication!

Maths at Hartford Junior School

Our Aims

- Fluency, Reasoning & Problem Solving
- Deep conceptual understanding & number sense
- A love of maths and can-do attitude

Confident mathematicians

Able explain their thinking

Prepared for the future

Maths at Hartford Junior School

Our belief…

… is that all pupils are capable of understanding and doing mathematics, given sufficient time. Pupils are neither 'born with the maths gene' nor 'just no good at maths'.

With good teaching, appropriate resources, effort and a 'can do' attitude all children can achieve in and enjoy mathematics.

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

What is multiplication all about?

What is multiplication all about?

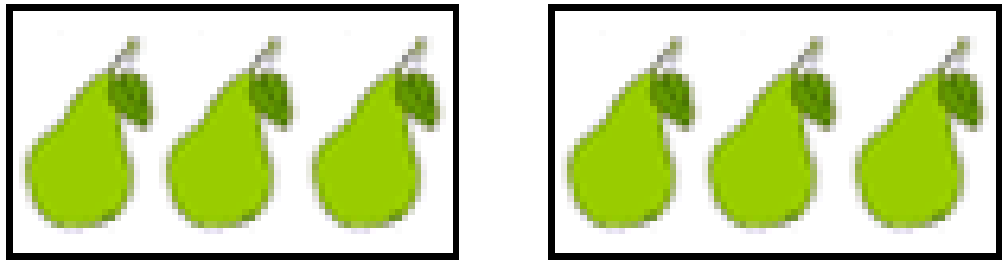
Can you build this calculation?

$$2 \times 3 = 6$$

Can you tell a maths story about this equation?

What is multiplication all about?

2 X 3 = 6



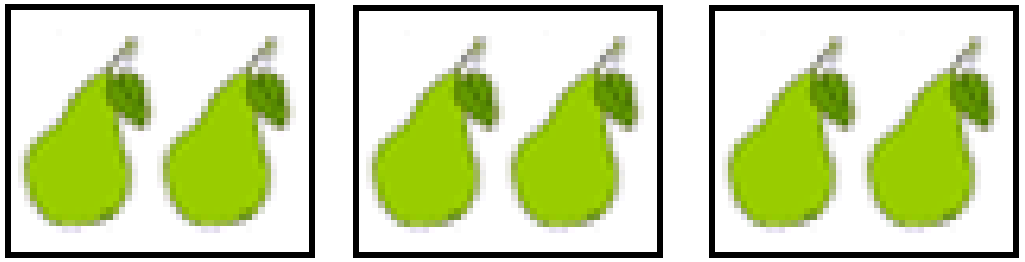
2 groups of 3

The multiplicand is 3.

The multiplier is 2.

What is multiplication all about?

2 X 3 = 6



2 multiplied by 3

The multiplicand is 2 .

The multiplier is 3.

Multiplication

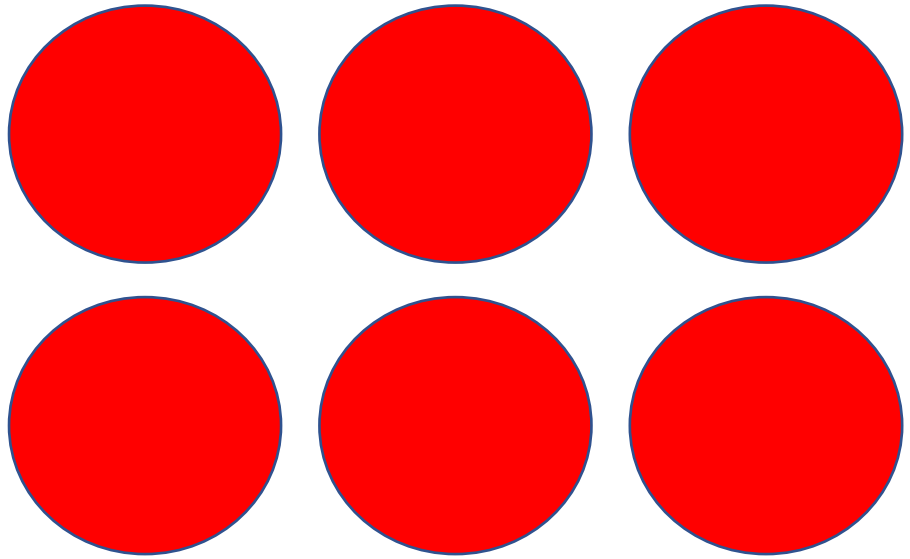
Key vocabulary

The **multiplicand** is the size of the group.

The **multiplier** is the number of groups.

The **product** is the total number of objects in all.

Arrays



Multiplicand, multiplier and product

What can you see?

Key Vocabulary

$$2 \times 3 = 6$$

Factors is another word we use to talk about the **2** and **3** in this equation.

What is the Year 4 Multiplication Tables Check and how will it be administered?

Ket information about the 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 the check will take place

- There will be a 2 week window from Monday 3rd June 2024 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.

How the check is carried out

- The check will be fully digital.
- We will use our iPads to take the MTC.
- 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.

Specific arrangements for the check

Some children will be eligible for specific arrangements:

- 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.

The check questions

- **Questions will be selected from the 121 number facts that make up the multiplication tables from 2 to 12.**
- There will only be multiplication questions in the check, not division facts.
- 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.

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

The 6, 7, 8, 9 and 12 times tables are more likely to be asked.

How are we teaching times tables?

GOING FOR GOLD

Intended pupil outcomes of Mastering Number at KS2

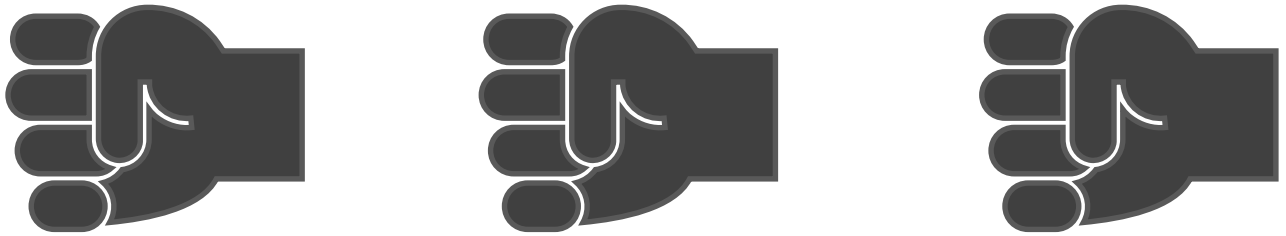
Pupils will:

- gain confidence and flexibility with number that exemplifies good number sense when looking at the multiplicative relationship

- develop automaticity in multiplication and division facts through regular practice

- make good progress towards year group expectations.

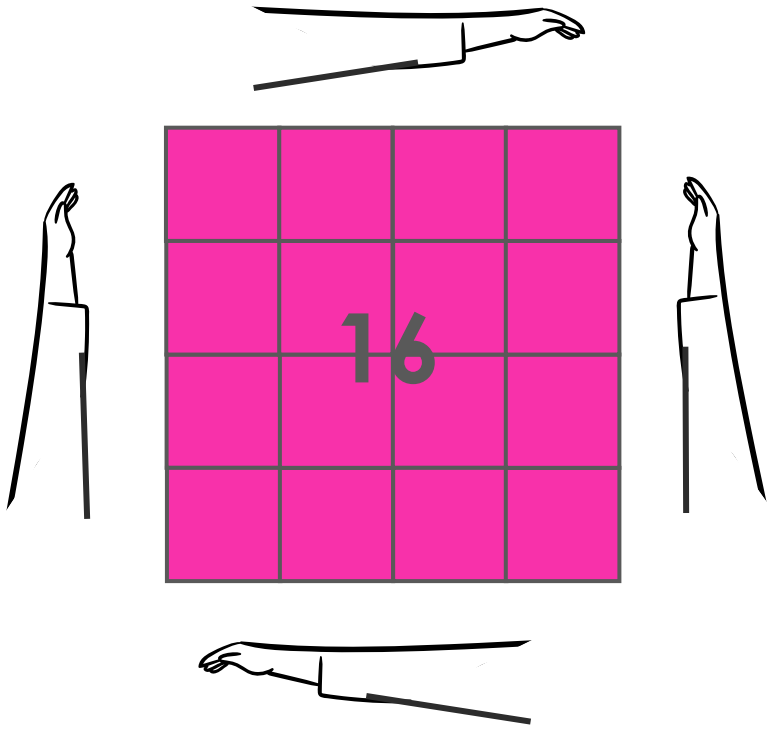
Represent the picture with unitised counters and a multiplication expression



50 50 50

3×50

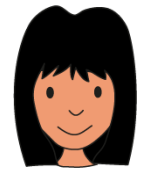
There are _____ _____.
There is _____, _____ times.



4 x 4

Do you agree with Mo?

There are144 **different** facts to learn altogether!



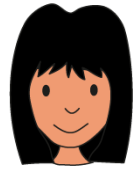
1 × 1	2 × 1	3 × 1	4 × 1	5 × 1	6 × 1	7 ×				
1 × 2	2 × 2	3 × 2	4 × 2	5 × 2	6 × 2	7 × 2	8 × 2	9 × 2	10 × 2	11 × 2	12 × 2
1 × 3	2 × 3	3 × 3	4 × 3	5 × 3	6 × 3	7 × 3	8 × 3	9 × 3	10 × 3	11 × 3	12 × 3
1 × 4	2 × 4	3 × 4	4 × 4	5 × 4	6 × 4	7 × 4	8 × 4	9 × 4	10 × 4	11 × 4	12 × 4
1 × 5	2 × 5	3 × 5	4 × 5	5 × 5	6 × 5	7 × 5	8 × 5	9 × 5	10 × 5	11 × 5	12 × 5
1 × 6	2 × 6	3 × 6	4 × 6	5 × 6	6 × 6	7 × 6	8 × 6	9 × 6	10 × 6	11 × 6	12 × 6
1 × 7	2 × 7	3 × 7	4 × 7	5 × 7	6 × 7	7 × 7	8 × 7	9 × 7	10 × 7	11 × 7	12 × 7
1 × 8	2 × 8	3 × 8	4 × 8	5 × 8	6 × 8	7 × 8	8 × 8	9 × 8	10 × 8	11 × 8	12 × 8
1 × 9	2 × 9	3 × 9	4 × 9	5 × 9	6 × 9	7 × 9	8 × 9	9 × 9	10 × 9	11 × 9	12 × 9
1 × 10	2 × 10	3 × 10	4 × 10	5 × 10	6 × 10	7 × 10	8 × 10	9 × 10	10 × 10	11 × 10	12 × 10
1 × 11	2 × 11	3 × 11	4 × 11	5 × 11	6 × 11	7 × 11	8 × 11	9 × 11	10 × 11	11 × 11	12 × 11
1 × 12	2 × 12	3 × 12	4 × 12	5 × 12	6 × 12	7 × 12	8 × 12	9 × 12	10 × 12	11 × 12	12 × 12

Show on your sheet where the repeated facts begin

1 × 1	2 × 1	3 × 1	4 × 1	5 × 1	6 × 1	7 × 1	8 × 1	9 × 1	10 × 1	11 × 1	12 × 1
1 × 2	2 × 2	3 × 2	4 × 2	5 × 2	6 × 2	7 × 2	8 × 2	9 × 2	10 × 2	11 × 2	12 × 2
1 × 3	2 × 3	3 × 3	4 × 3	5 × 3	6 × 3	7 × 3	8 × 3	9 × 3	10 × 3	11 × 3	12 × 3
1 × 4	2 × 4	3 × 4	4 × 4	5 × 4	6 × 4	7 × 4	8 × 4	9 × 4	10 × 4	11 × 4	12 × 4
1 × 5	2 × 5	3 × 5	4 × 5	5 × 5	6 × 5	7 × 5	8 × 5	9 × 5	10 × 5	11 × 5	12 × 5
1 × 6	2 × 6	3 × 6	4 × 6	5 × 6	6 × 6	7 × 6	8 × 6	9 × 6	10 × 6	11 × 6	12 × 6
1 × 7	2 × 7	3 × 7	4 × 7	5 × 7	6 × 7	7 × 7	8 × 7	9 × 7	10 × 7	11 × 7	12 × 7
1 × 8	2 × 8	3 × 8	4 × 8	5 × 8	6 × 8	7 × 8	8 × 8	9 × 8	10 × 8	11 × 8	12 × 8
1 × 9	2 × 9	3 × 9	4 × 9	5 × 9	6 × 9	7 × 9	8 × 9	9 × 9	10 × 9	11 × 9	12 × 9
1 × 10	2 × 10	3 × 10	4 × 10	5 × 10	6 × 10	7 × 10	8 × 10	9 × 10	10 × 10	11 × 10	12 × 10
1 × 11	2 × 11	3 × 11	4 × 11	5 × 11	6 × 11	7 × 11	8 × 11	9 × 11	10 × 11	11 × 11	12 × 11
1 × 12	2 × 12	3 × 12	4 × 12	5 × 12	6 × 12	7 × 12	8 × 12	9 × 12	10 × 12	11 × 12	12 × 12

78 facts still seems a lot to learn!

Don't worry! We know a lot already and some are really easy!



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1 × 3	2 × 3	3 × 3									
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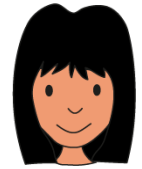
1 × 11	2 × 11	3 × 11	4 × 11	5 × 11	6 × 11	7 × 11	8 × 11	9 × 11	10 × 11	11 × 11	
1 × 12	2 × 12	3 × 12	4 × 12	5 × 12	6 × 12	7 × 12	8 × 12	9 × 12	10 × 12	11 × 12	12 × 12

Do you know these ones…?



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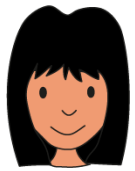
1 × 12	2 × 12	3 × 12	4 × 12	5 × 12	6 × 12	7 × 12	8 × 12	9 × 12	10 × 12	11 × 12	12 × 12

The ‘tens’ are easy too!



1 × 1										
1 × 2	2 × 2									
1 × 3	2 × 3	3 × 3								
1 × 4	2 × 4	3 × 4	4 × 4							
1 × 5	2 × 5	3 × 5	4 × 5	5 × 5						
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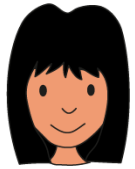
1 × 9	2 × 9	3 × 9	4 × 9	5 × 9	6 × 9	7 × 9	8 × 9	9 × 9		
1 × 10	2 × 10	3 × 10	4 × 10	5 × 10	6 × 10	7 × 10	8 × 10	9 × 10	10 × 10	
1 × 11	2 × 11	3 × 11	4 × 11	5 × 11	6 × 11	7 × 11	8 × 11	9 × 11	10 × 11	11 × 11
1 × 12	2 × 12	3 × 12	4 × 12	5 × 12	6 × 12	7 × 12	8 × 12	9 × 12	10 × 12	11 × 12	12 × 12

If we know the ‘ones’, ‘twos’ and ‘tens’, then we can work out the ‘elevens’ and ‘twelves’!

Take out the ‘ones’ and the ‘tens’, that leaves these facts to learn!



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	
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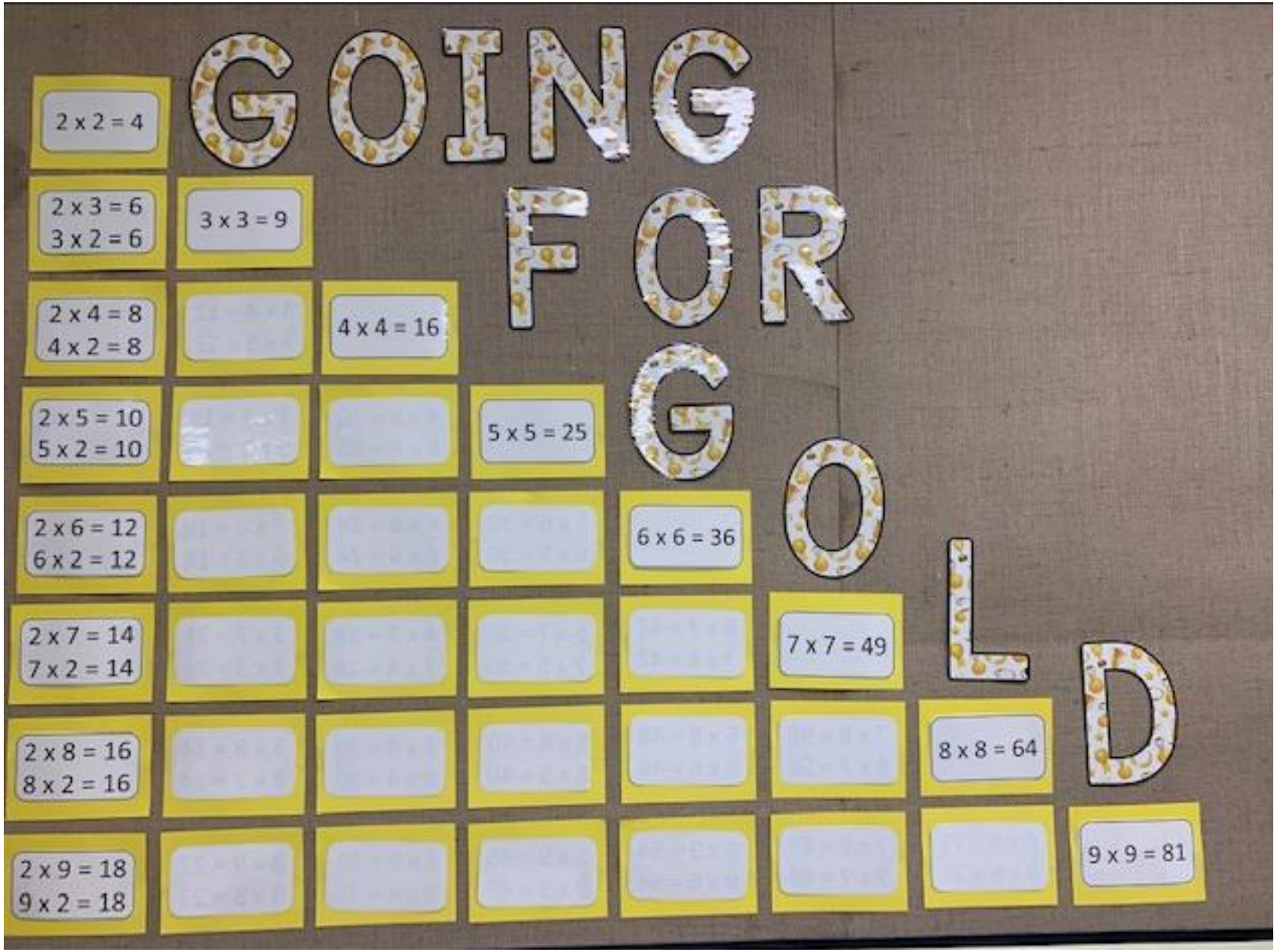

GOING FOR GOLD
2 x 2 = 4
2 x 3 = 6
3 x 2 = 6
3 x 3 = 9
2 x 4 = 8
4 x 2 = 8
4 x 4 = 16
2 x 5 = 10
5 x 2 = 10
5 x 5 = 25
2 x 6 = 12
6 x 2 = 12
6 x 6 = 36
2 x 7 = 14
7 x 2 = 14
7 x 7 = 49
2 x 8 = 16
8 x 2 = 16
8 x 8 = 64
2 x 9 = 18
9 x 2 = 18
9 x 9 = 81

Session 1

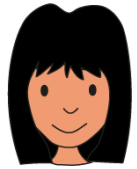
Pupils will:

- recall the products for 3 × 9 and 7 × 8
- reason about 3 × 7, relating it to 2 × 7 and 1 × 7
- practise recalling the product for 3 × 7 using the oral pattern and gestures.

Recap

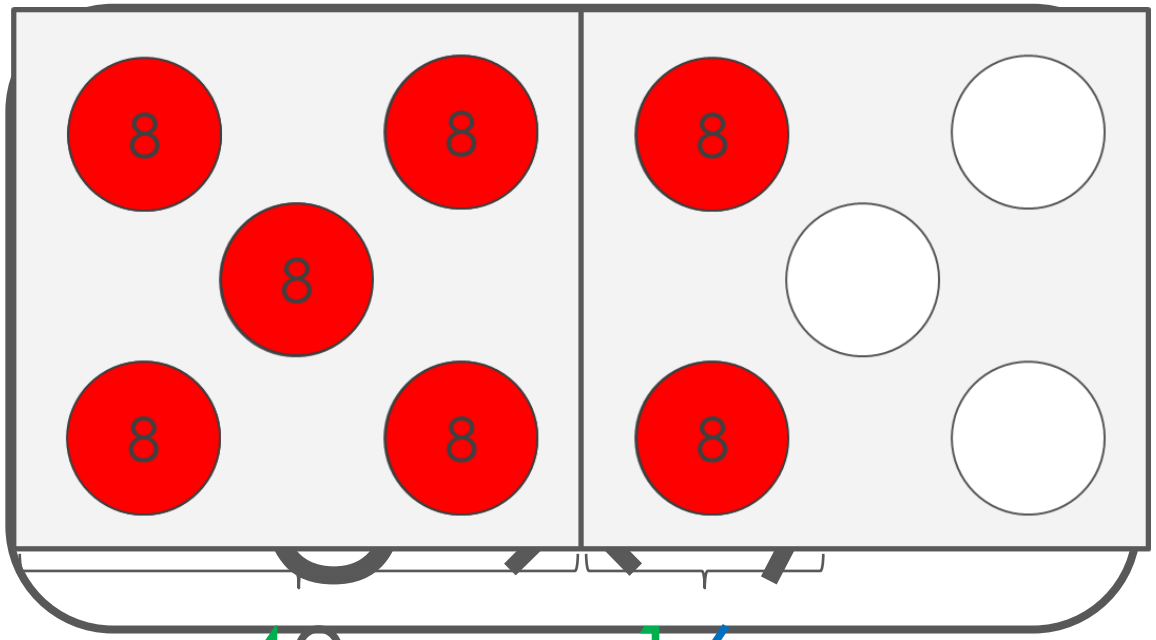
Cal

Do you know what the product of 7 and 8 is?



Mo

$7 \times 8 = 56$



40 + 16

GOING FOR GOLD

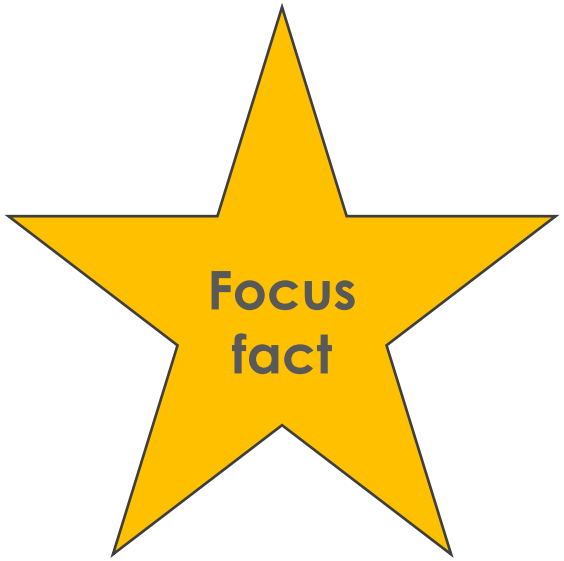
Focus facts of the week

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

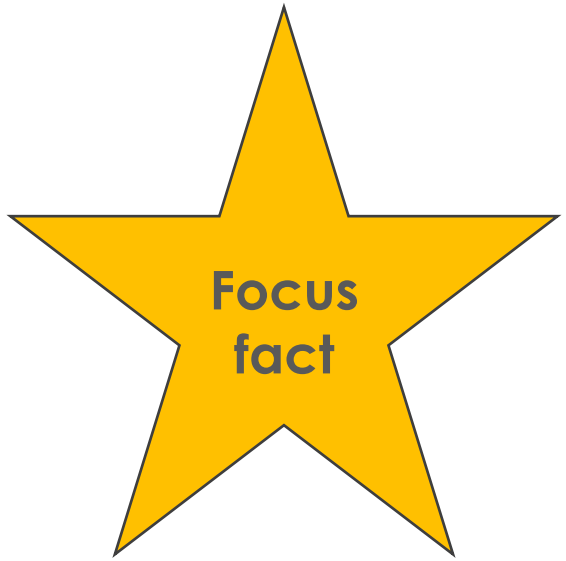
3 × 7 = 21

6 × 7 = 42

GOING FOR GOLD



$$3 \times 7 = 21$$
$$7 \times 3 = 21$$



Say the smaller factor first!

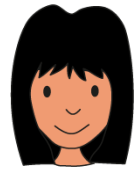
Understand

Let's conn

I ca
I cc

I can think of this as 3 sevens, or as 7, three times.
I could use a stamping gesture to show 3 sevens
and I can imagine 3 seven-plates.

Cal



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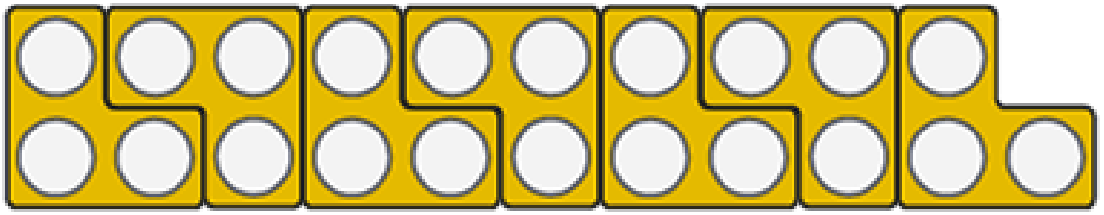
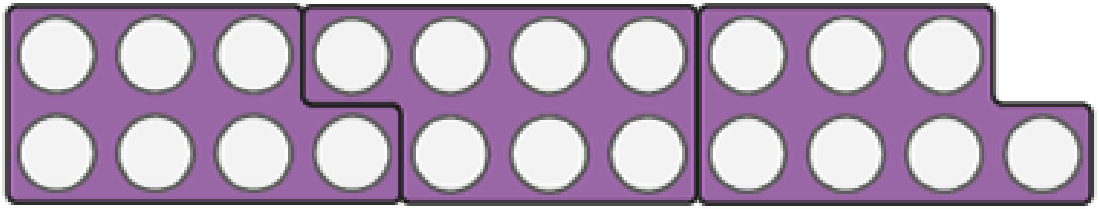


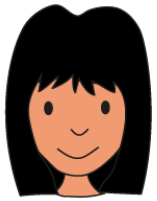


3×7

Explain

Cal says that the 1s digit for the product of 3 and 7 is 0.
How ca rrect?

Both factors are odd so the product must be odd. A number with a 1s digit of 0 is NOT odd.



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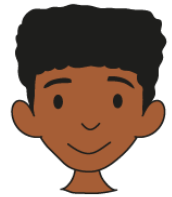
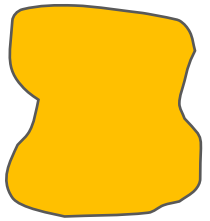


Cal

$$3 \times 7 =$$ 

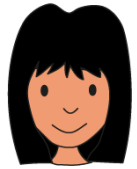
Where none of the factors are even, the product is odd.

Say

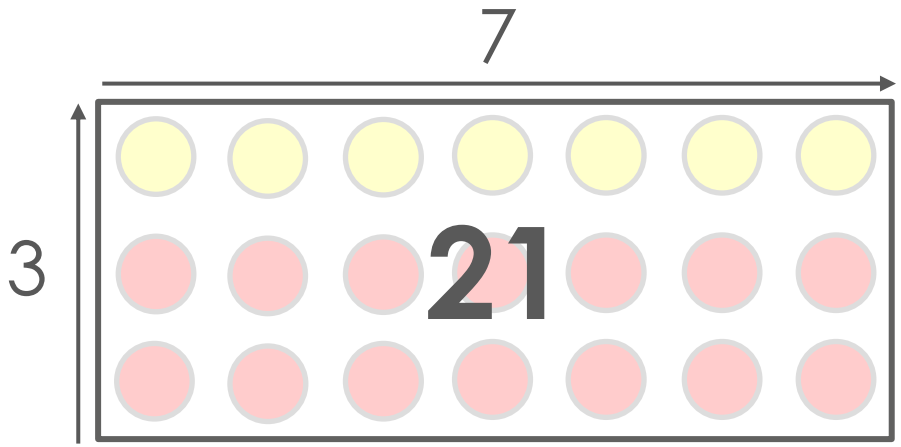
Cal

I'm going to practise SAYING '3, 7, 21' to help me remember the product when I see the factors!

to each other.
ng hand gesture
7, 21'!



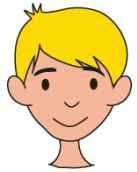
Mo



$$3 \times 7 = 21$$

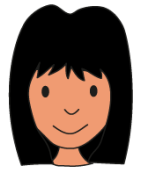
Cards

Make a card for your pack!



Fin

Remember to say, ‘3, 7, 21’, whichever order the factors are written in – and tap the product as you say it.

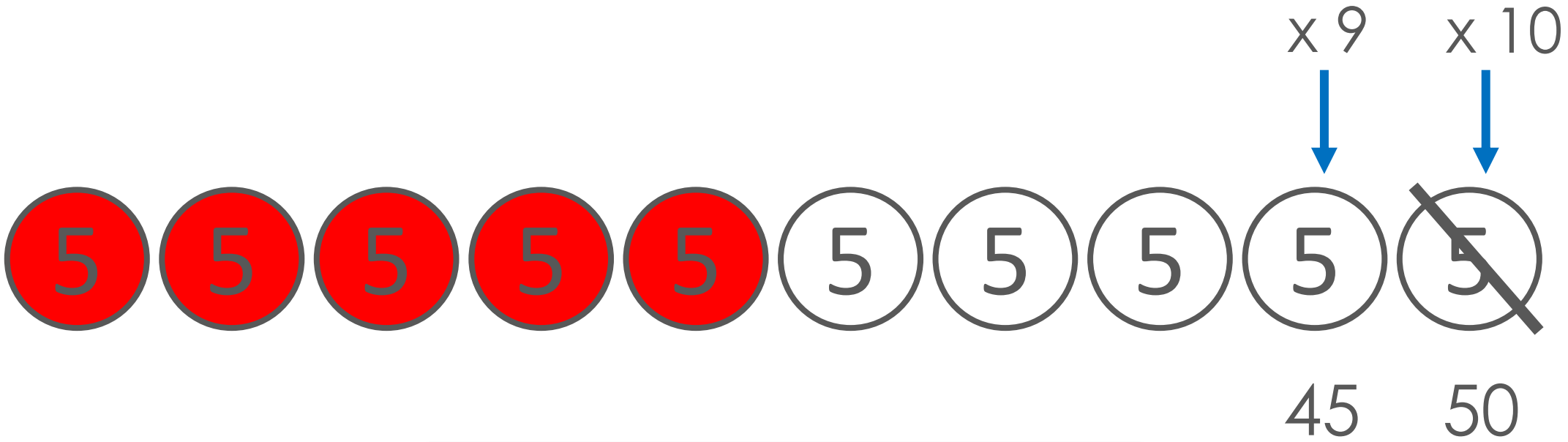


Mo

21

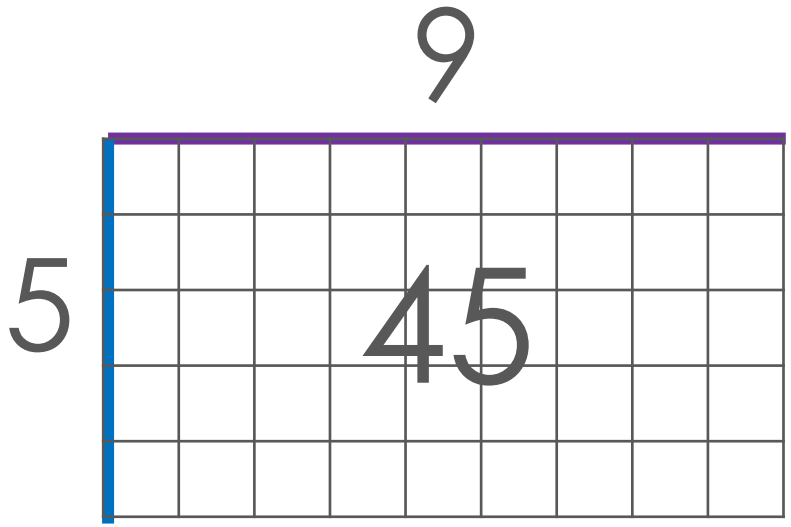
Key representations

Let's connect this to our gesture.

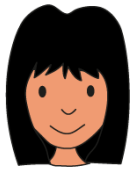


Ten ___s ___.
Nine ____s, ___.

5 x 9 = 45



When I tap it helps me to remember our fact.



When I use a gesture it helps me to remember our fact.

KNOW

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

16 Gold

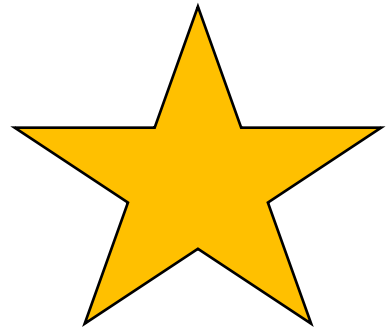
20 to go!

KNOW

Don’t forget the 12s, the squares and the doubles!

GOING FOR GOLD

Card practice time



Things you can do to help at home:

- Make some practice flash cards.
- When you use them, if your child is not yet able to recall a product quickly they can turn the card over to see the product.
- Practise the fact using the correct product.
- In these practice sessions, we don't want children to count or work out the fact - we want them to just know it!
- If they don't know, tell them!
- Keep saying a fact aloud, "5, 7, 35"
- Practise on TTRockstars
- Website: Mathsframe Multiplication Tables Check

Please complete our feedback form.
We value your views and ideas!