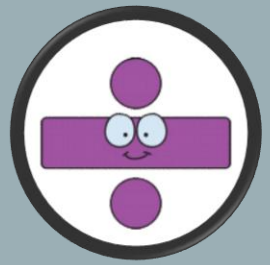
MTC YEAR 4



AIMS

- Importance of times tables and an understanding of how times tables is taught
- National curriculum expectations
- To achieve an understanding of what the Multiplication Tables Check (MTC) is and how the Multiplication Tables Check will be administered
- Top Tips
- 144 facts reduced to 36 facts
- To provide you with a range of strategies and websites you can use with your child at home

IMPORTANCE OF TIMES TABLE KNOWLEDGE

- Learning times tables off by heart makes mental maths much easier. It will boost your child's confidence in their maths lessons at school and help them to move quickly through more complex maths concepts and problems.

- Not knowing your times tables puts additional strain on your working memory when tackling such new concepts in maths. This will hinder the long-term transition of the new facts to the long-term memory.

- Times tables are fundamental to many maths topics, especially fractions.

- Multiplication and division feature very highly in the KS2 SATs reasoning papers.

NATIONAL CURRICULUM REQUIREMENTS

- **Year 1 times tables learning**
- Children are taught the simplest form of multiplication, counting up in 2s, 5s and 10s.

- **Year 2 times table learning**
- Children are formally introduced to multiplication, related division facts and repeated addition for the numbers 2, 5 and 10.

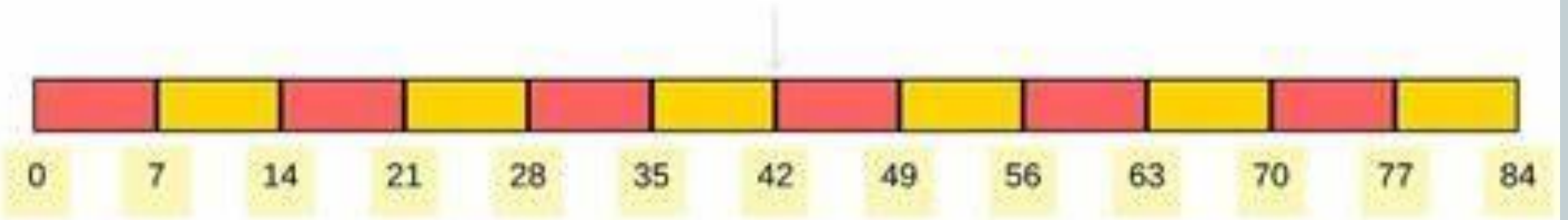
NATIONAL CURRICULUM REQUIREMENTS

- **Year 3 times table learning**
- A crucial year for times tables learning. Children are expected to learn multiplication facts for the 3, 4 and 8 times tables and to use practical and written methods to multiply and divide two-digit numbers (for example, 15 x 4).

- **Year 4 times tables learning**
- A 'completing' year for all multiplication facts up to 12 x 12. Children also continue to develop their skills in multiplication of two-digit numbers by a one-digit number, using harder combinations of numbers. They will also learn to multiply three-digit numbers by a one-digit number.

TEACHING STRATEGIES

COUNTING STICK



RHYMES AND SONGS

Rhymes and songs are so important because they support the retention of facts by making them fun and memorable to learn.

6 x 7 and 7 x 6	• Fancy a trip to the zoo? 6 times 7 is 42 • At the zoo, I saw elephant poo… 7 times 6 is 42

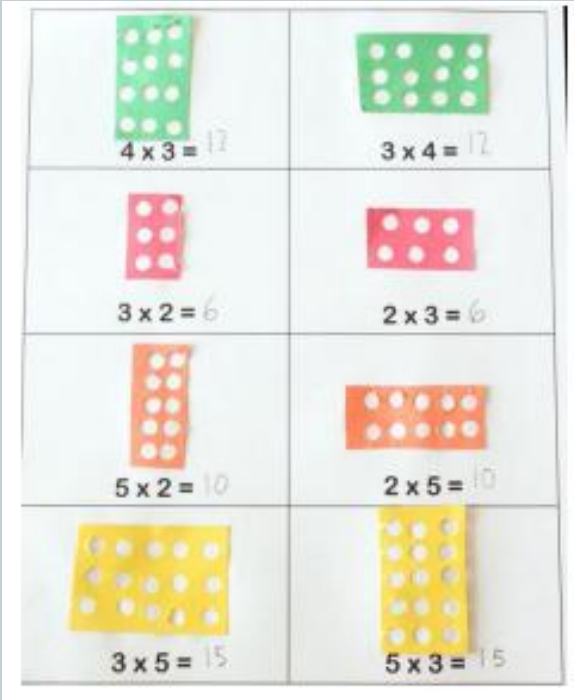
8 x 8	• I ate and ate 'til I was sick on the floor… 8 times 8 is 64

MULTIPLICATION IS COMMUTATIVE

factor factor product factor factor

$$3 \times 2 = 6 = 2 \times 3$$

Same as
Equal to

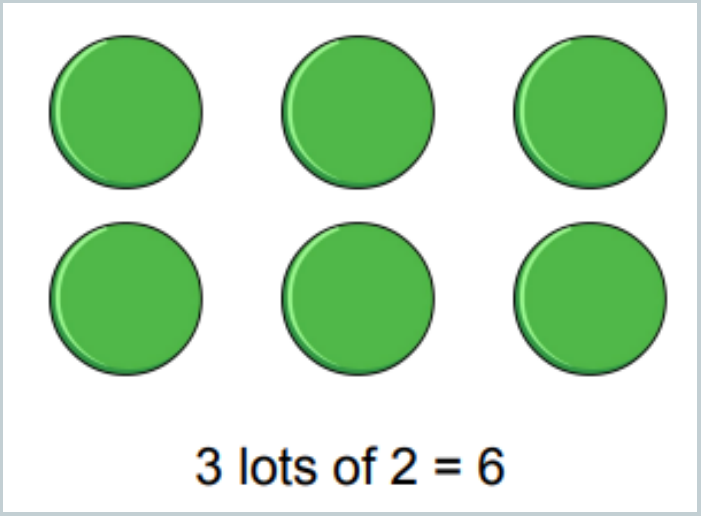


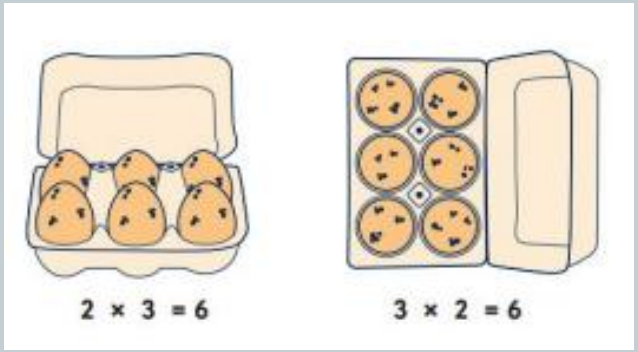
Children need to understand that multiplication can be completed in any order but will still produce the same product.

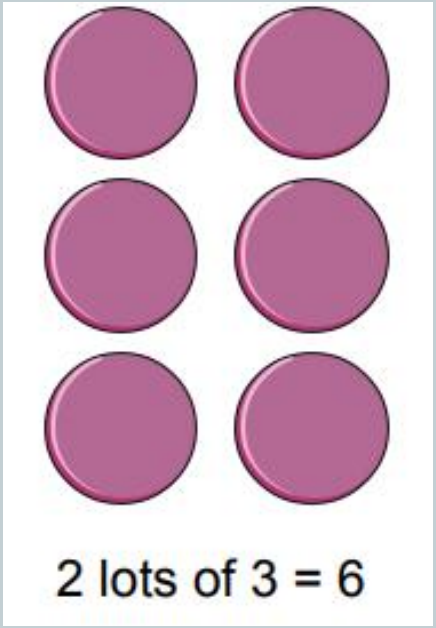
ARRAYS

Arrays are a visual method of representing multiplication.

The product of 3 x 2 is the same as 2 x 3 but the image is different.





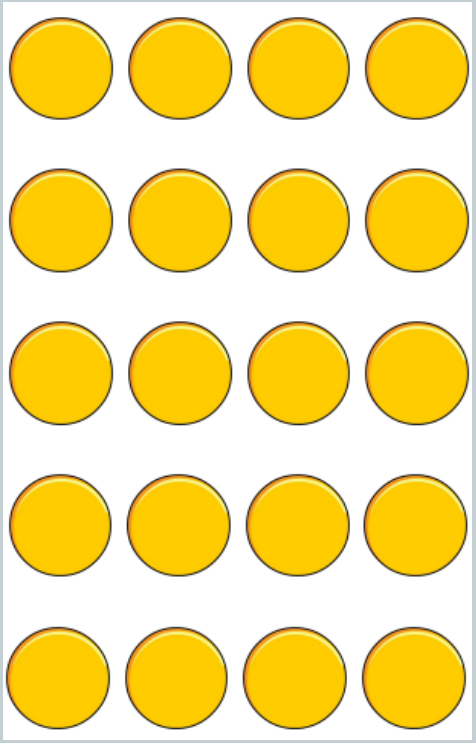


2s 3 times

3s 2 times

DIVISION IS THE INVERSE OF MULTIPLICATION

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



Using pictorial representations (such as arrays) is useful here for children to see the link between multiplication and division.

FACT FAMILIES

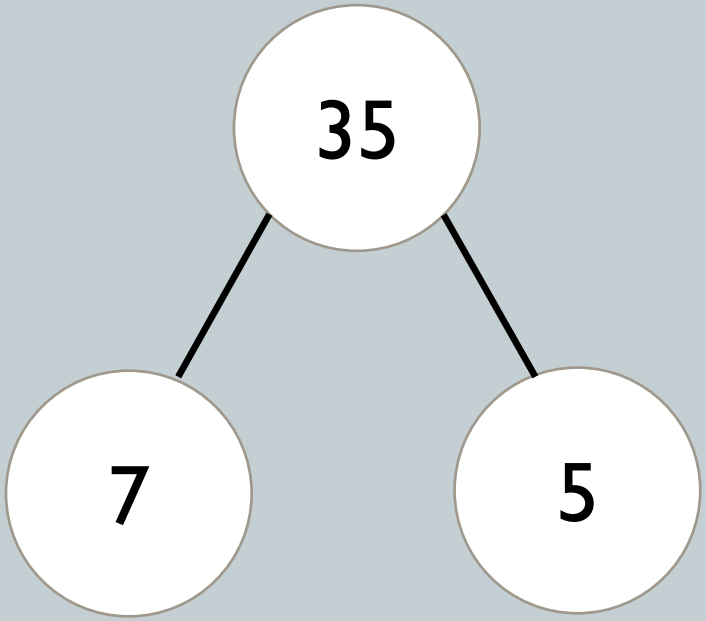
Due to their commutative understanding, children should also be able to see whole number families.

$7 \times 5 = 35$

$5 \times 7 = 35$

$35 = 5 \times 7$

$35 = 7 \times 5$



$35 \div 5 = 7$

$35 \div 7 = 5$

$7 = 35 \div 5$

$5 = 35 \div 7$

USING KNOWN FACTS

By using known facts from 'other' times tables, children are able to find answers with increasing speed.

4 x 6 = ?
I know 4 x 5 = 20
Therefore, 20 + 4 = 24

17 x 7 = ?
I know 10 x 7 = 70 and 7 x 7 = 49
Therefore, 70 + 49 = 119

8 x 9 = ?
I know 8 x 10 = 80
Therefore, 80 - 8 = 72

If 4 x 9 = 36
I can work out 4 x 90 = 360
and 4 x 900 = 3600
Therefore, I know 40 x 9 = 360
and 400 x 9 = 3600

TIMES TABLES TOP TIPS

YEAR 2

2x table

Any number multiplied by two is double the number. 7 x 2 =14 7 + 7 = 14 double 7 is 14

5x table

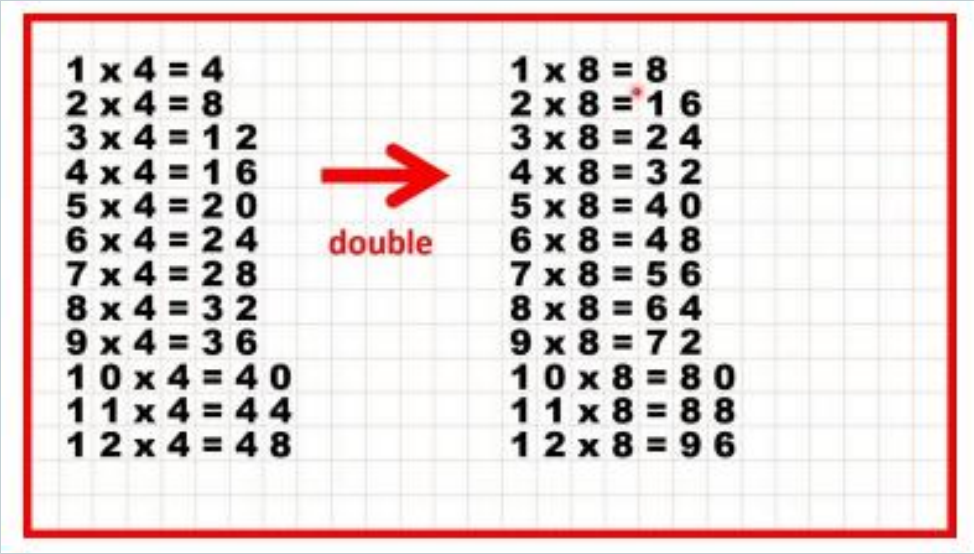
All multiples of 5 end in five or zero. Any odd number times 5 ends in a 5. Any even number times 5 ends in 0.

10x table

All the digits in the ten times table end in zero

YEAR 3

The 4 and 8 times tables are introduced as related to the 2 times tables (doubling each time). 6, 4, 2, 0).



The ones digits in the multiples of eight also go down in twos.

8, 16, 24, 32, 40, 48, 56, 64, 72, 80

(8, 6, 4, 2, 0, 8, 6, 4, 2, 0).

In the 3 x table, if you add up the sum of the digits they are always multiples of 3. For example: 3, 6, 9, 12 (1+2=3), 15 (1+5=6), 18 (1+8=9) 21 (2+1=3), 24 (2+4=6) etc.

The numbers also follow the pattern of: odd, even, odd, even (3,6,9,12).

YEAR 3

In the 3 x table, if you add up the sum of the digits they are always multiples of 3.

For example: 3, 6, 9, 12 (1+2=3), 15 (1+5=6), 18 (1+8=9) 21 (2+1=3), 24 (2+4=6) etc.

The numbers also follow the pattern of: odd, even, odd, even (3,6,9,12).

3 × 0	=	0
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

YEAR 4

Top hints

6x table

The six times table is double the three times table. So 5 x 3 = 15, 5 x 6 = 30, 30 is double 15.

7x table

Combine the 5 and the 2 times table: 7 x 4 = 28 or (5x4) + (2x4) = 28

Odd and Even Numbers

E = even O = odd

The following rules always apply:

The only time you get an odd answer is when two odd numbers are multiplied together.

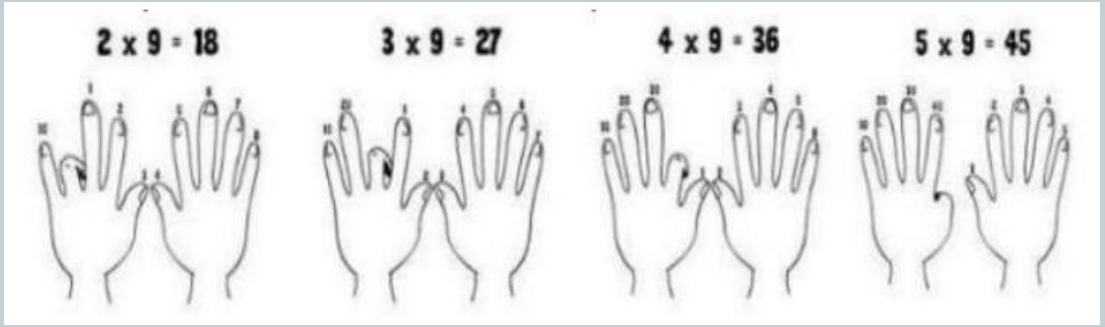
E x E = E	E x O = E	O x E = E	O x O = O
2 x 6 = 12	4 x 5 = 20	9 x 2 = 18	7 x 3 = 21

YEAR 4

Top hints

9x table

Fingers can be used to work out the nine times table up to 10 x 9. The first finger is put down for 1 x 9 and the remaining fingers show 9 ones (1 x 9 =9). Then the second finer is put down for 2 x 9 and the remaining fingers show 1 ten (to the left) and 8 ones (to the right) which equals 18, and so on.



9 x 0 =	0
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

The digits found in the multiples of nine when added together also equal nine.
For example: 9 = 9, 18 (1 + 8) = 9, 27 (2 + 7) = 9, 36 (3 + 6) = 9, 45 (4 + 5) = 9 etc.

HOW TO REDUCE THE NUMBER OF FACTS TO LEARN?

144 MULTIPLICATION FACTS

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

36 MULTIPLICATION FACTS

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

MULTIPLICATION TIMES TABLE CHECK (MTC)

THE DEPARTMENT FOR EDUCATION (DFE) YEAR 4 MULTIPLICATION CHECK

The purpose of the MTC is to determine whether year 4 pupils can fluently recall their multiplication tables and are meeting the expected standard for their year group before moving to Upper Key Stage 2 (Year 5 and Year 6)

'By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work'.

How will the MTC data be used?

School-level results and individual pupil results will be made available to schools. This will allow schools to provide additional support to pupils who require it.

They will not be published in a performance table.

National and local authority results will be reported by the Department for Education (DfE) to track standards over time.

THE DEPARTMENT FOR EDUCATION (DFE) YEAR 4 MULTIPLICATION CHECK

- The MTC takes place in the spring term (Monday 2 June until Friday 13 June)
- All year 4 children will be required to take the MTC. (children who are working well below year 2 expectations in multiplication may be exempt from taking the check)
- If a child cannot access the MTC , a range of access arrangements will be available to support pupils.
- 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.
- We have the flexibility to administer the check to individual pupils, small groups or a whole class at the same time.
- It will be automatically scored, and results will be available to schools once the assessment window closes.

THE DEPARTMENT FOR EDUCATION (DFE) YEAR 4 MULTIPLICATION CHECK

- Answers will be entered using an on-screen number pad.
- 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.
- Each child will be randomly assigned a set of questions
- There will only be multiplication questions

The 6, 7, 8, 9 and 12 times tables are more likely

- • 6 x 6, 6 x 7, 6 x 8, 6 x 9, 6 x 12
- • 7 x 8, 7 x 9, 7 x 12
- • 8 x 9, 8 x 12
- • 12 x 12

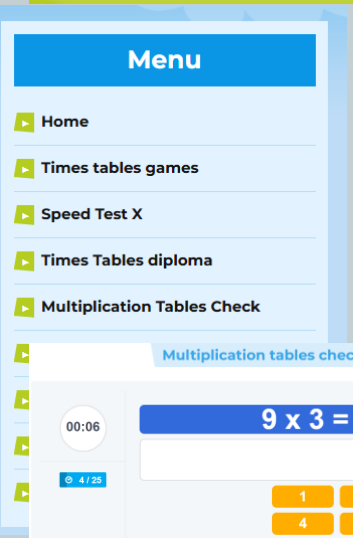
5.2.1 Table 1 – Multiplication table limits in the MTC

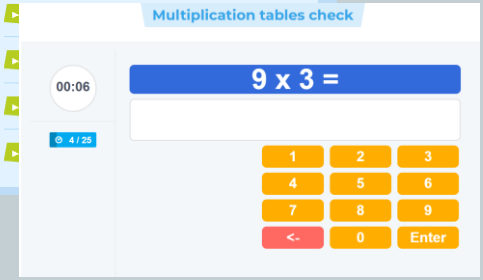
Multiplication Table	Minimum number of items in each form	Maximum number of items in each form
1	Not applicable	Not applicable
2	0	2
3	1	3
4	1	3
5	1	3
6	2	4
7	2	4
8	2	4
9	2	4
10	0	2
11	1	3
12	2	4

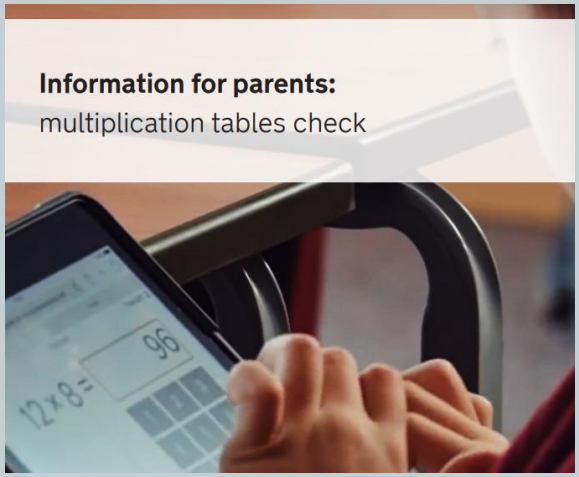
SUPPORT AT HOME

IF YOUR CHILD IS PRACTISING REGULARLY AT HOME, THEY ARE PRACTISING FOR THE BENEFIT OF THEIR WIDER MATHS EDUCATION

Timestables.co.uk
Learn the times tables here!







1x table	2x table	3x table	4x table	5x table	6x table
0 × 1 = 0 1 × 1 = 1 2 × 1 = 2 3 × 1 = 3 4 × 1 = 4 5 × 1 = 5 6 × 1 = 6 7 × 1 = 7 8 × 1 = 8 9 × 1 = 9 10 × 1 = 10 11 × 1 = 11 12 × 1 = 12	0 × 2 = 0 1 × 2 = 2 2 × 2 = 4 3 × 2 = 6 4 × 2 = 8 5 × 2 = 10 6 × 2 = 12 7 × 2 = 14 8 × 2 = 16 9 × 2 = 18 10 × 2 = 20 11 × 2 = 22 12 × 2 = 24	0 × 3 = 0 1 × 3 = 3 2 × 3 = 6 3 × 3 = 9 4 × 3 = 12 5 × 3 = 15 6 × 3 = 18 7 × 3 = 21 8 × 3 = 24 9 × 3 = 27 10 × 3 = 30 11 × 3 = 33 12 × 3 = 36	0 × 4 = 0 1 × 4 = 4 2 × 4 = 8 3 × 4 = 12 4 × 4 = 16 5 × 4 = 20 6 × 4 = 24 7 × 4 = 28 8 × 4 = 32 9 × 4 = 36 10 × 4 = 40 11 × 4 = 44 12 × 4 = 48	0 × 5 = 0 1 × 5 = 5 2 × 5 = 10 3 × 5 = 15 4 × 5 = 20 5 × 5 = 25 6 × 5 = 30 7 × 5 = 35 8 × 5 = 40 9 × 5 = 45 10 × 5 = 50 11 × 5 = 55 12 × 5 = 60	0 × 6 = 0 1 × 6 = 6 2 × 6 = 12 3 × 6 = 18 4 × 6 = 24 5 × 6 = 30 6 × 6 = 36 7 × 6 = 42 8 × 6 = 48 9 × 6 = 54 10 × 6 = 60 11 × 6 = 66 12 × 6 = 72
7x table	**8x table**	**9x table**	**10x table**	**11x table**	**12x table**
0 × 7 = 0 1 × 7 = 7 2 × 7 = 14 3 × 7 = 21 4 × 7 = 28 5 × 7 = 35 6 × 7 = 42 7 × 7 = 49 8 × 7 = 56 9 × 7 = 63 10 × 7 = 70 11 × 7 = 77 12 × 7 = 84	0 × 8 = 0 1 × 8 = 8 2 × 8 = 16 3 × 8 = 24 4 × 8 = 32 5 × 8 = 40 6 × 8 = 48 7 × 8 = 56 8 × 8 = 64 9 × 8 = 72 10 × 8 = 80 11 × 8 = 88 12 × 8 = 96	0 × 9 = 0 1 × 9 = 9 2 × 9 = 18 3 × 9 = 27 4 × 9 = 36 5 × 9 = 45 6 × 9 = 54 7 × 9 = 63 8 × 9 = 72 9 × 9 = 81 10 × 9 = 90 11 × 9 = 99 12 × 9 = 108	0 × 10 = 0 1 × 10 = 10 2 × 10 = 20 3 × 10 = 30 4 × 10 = 40 5 × 10 = 50 6 × 10 = 60 7 × 10 = 70 8 × 10 = 80 9 × 10 = 90 10 × 10 = 100 11 × 10 = 110 12 × 10 = 120	0 × 11 = 0 1 × 11 = 11 2 × 11 = 22 3 × 11 = 33 4 × 11 = 44 5 × 11 = 55 6 × 11 = 66 7 × 11 = 77 8 × 11 = 88 9 × 11 = 99 10 × 11 = 110 11 × 11 = 121 12 × 11 = 132	0 × 12 = 0 1 × 12 = 12 2 × 12 = 24 3 × 12 = 36 4 × 12 = 48 5 × 12 = 60 6 × 12 = 72 7 × 12 = 84 8 × 12 = 96 9 × 12 = 108 10 × 12 = 120 11 × 12 = 132 12 × 12 = 144

Times table with fact family reversal	Rhyme
4 x 12 and 12 x 4	• At the park with my mate… 4 times 12 is 48 • I left the park a little late… 12 times 4 is 48
11 x 11	• Fancy going for a run… 11 times 11 is 121
7 x 8 and 8 x 7	• My house is made of bricks… 7 times 8 is 56 • This old house needs a fix… 8 times 7 is 56
4 x 6 and 6 x 4	• Please sir, can I have some more?… 4 times 6 is 24 • More made my belly sore… 6 times 4 is 24
7 x 7	• This one's my favourite rhyme… 7 times 7 is 49

THANK YOU FOR COMING