



Welcome

Understanding the MTC & supporting learning times tables

The aim of this session

- To explain the year 4 'Multiplication Tables Check' (MTC)
- To offer strategies you could use when supporting your children at home



Quality First Education Trust



Relentless drive for improvement, excellence and equality

Aims

Our aim is that all children and adults:

Are safe

Are excellent learners

Have excellent social and emotional skills

Achieve and succeed



Quality
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Education

WHATEVER IT TAKES

Mantra

For all children and adults:

- 1) Know where we are going
- 2) Recruit, retain and develop excellent people
- 3) Ensure we know what to do
- 4) Ensure we know why we are doing the task
- 5) Ensure we have excellent skills to do the task
- 6) Ensure we have excellent resources to do the task
- 7) Ensure we do the task with excellence
- 8) Monitor, evaluate and improve

'Times tables' – year group expectations

- Year 1 = counting in 2s, 5s & 10s from different multiples
- Year 2 = fluent in multiplication tables for 2s, 5s & 10s
- Year 3 = recall & use multiplication & division facts for 3s, 4s & 8s multiplication tables (as well as 2s, 5s, & 10s)
- Year 4 = recall multiplication & division facts for multiplication tables to 12×12 (0, 1, 6, 7, 9, 11, 12)



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what is it?

- An annual check on the times tables knowledge of Year 4 children, to ensure they are meeting the benchmark of memorising up to 12×12 before moving to UKS2 .
- First announced by the Department for Education (DfE) in September 2017.
- Trialled by a selection of schools in June 2019, including all the Trust schools.
- Full roll out was due to take place in June 2020, before the arrival of Covid-19!
- June, 2022 will be the first actual compulsory Multiplication Tables Check for schools.



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what is it?

- To be taken in June - no set date to sit it but a time period when it must be completed - the 3-week 'check window' – 6th to 24th June this year.
- No pass mark, fail, nor expected standard threshold.
- Schools should use their own judgement as to any actions needed after the results.



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- “an online, on-screen digital assessment” – test taken on a desktop computer, laptop or tablet at school.
- It lasts approximately 5 minutes in total.
- Starts with three practice questions to begin with – mostly from the 1 times table.
- Following the practice questions, the test comprises of 25 questions with the child required to input the product or result.
- Questions are all formatted like: $9 \times 7 =$



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- Children have six seconds to answer each questions with a three second blank gap between each question.
- Children are only tested on their multiplication facts; no division facts.
- The questions are randomly selected by the testing programme, with the range from $2 \times 2 =$ up to 12×12 .
- The test's software selects more questions from the 6, 7, 8, 9 and 12 times tables, as these are trickier times tables focused on more in Years 3 and 4. (The 2s, 5s and 10s are more of a focus in Years 1 and 2.)



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- Children will have 6 seconds to answer each question - from the time the question appears to input their answer - so children must be able to read, recall and enter their response within 6 seconds.
- Children will enter their answer using a keyboard or by pressing digits using a mouse or touchscreen on an on-screen number pad so it's vital children can rapidly recall multiplication facts 'out of sequence' (i.e. answer 6×7 without having to count in 6's from 0).



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- Whatever is in the answer box at the end of the 6 seconds will be counted as the answer, even if a child is mid-way into entering a two digit answer. E.g. if they only enter the 7 in 72 when answering 8×9 they will be recorded as having answered 8×9 is 7.
- Each child will be randomly assigned a set of questions – a ‘form’. This is the spread of questions with no more than 30% of the questions being the same in any two sets of questions.
- There is no requirement for all children in a class to take the check all at once.



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- There will always be questions from the 3, 4, 5, 6, 7, 8, 9, 11 and 12 multiplication tables in each test.
- There will be no questions from the 1 times table (i.e. 1×8 or 8×1)
- There will only be a maximum of 7 questions from the 2, 5 and 10 times tables.
- Reversal of questions using the commutative law will not feature in the same check. E.g. 8×3 and 3×8 won't be asked to the same pupil.



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- Eleven facts are more likely to appear than others
- The following 11 multiplication questions (and their commutative equivalents) are more likely to be asked: –
- 6×6 , 6×7 , 6×8 , 6×9 , 6×12
- 7×8 , 7×9 , 7×12
- 8×9 , 8×12
- 12×12



The Multiplication Tables Check – MTC - the Year 4 Times Tables Test – what does it look like?

- Schools have access to a simulated version to practise on - the 'try it out area' – before the test.
- During this time schools can apply any necessary accessibility features for pupils that may need them.
- Schools will only be able to access result for each pupil at the end of the 3-week window. The children (or teacher) will not see the total score on screen.
- All eligible Year 4 pupils will be required to take the MTC test.
- No child will fail the times tables test as no pass mark has been set.



'Times tables' – year group expectations

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- Year 4 = recall multiplication & division facts for multiplication tables to 12×12 (0, 1, 6, 7, 9, 11, 12)



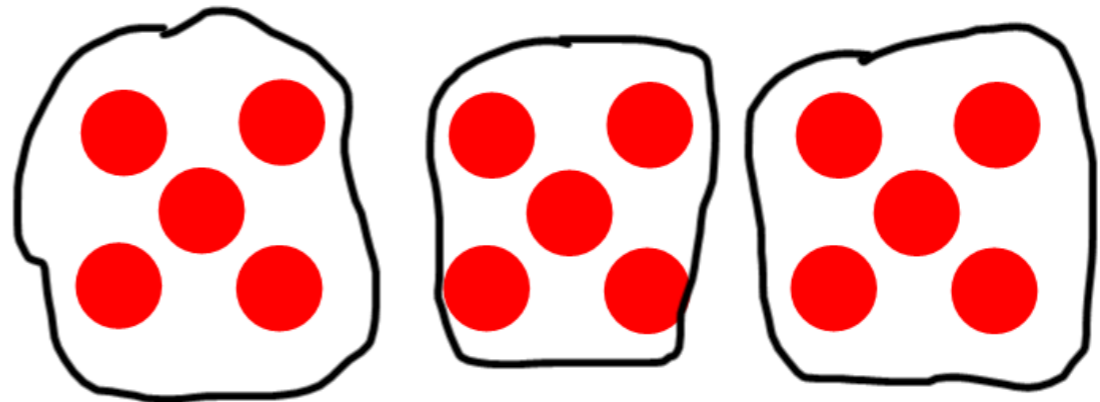
Supporting learning times tables

- Repeated addition of equal groups to first understand multiplication:

concrete →



pictorial →



abstract →

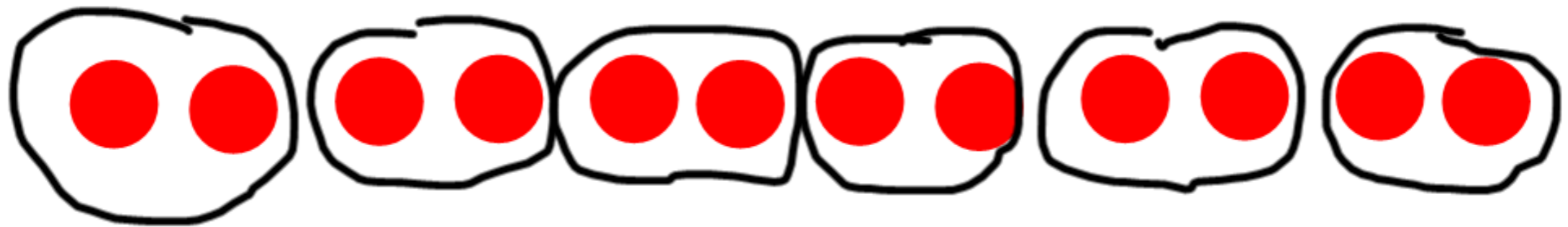
$$\underline{5} + \underline{5} + \underline{5} =$$



Supporting learning times tables

- skip counting:

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

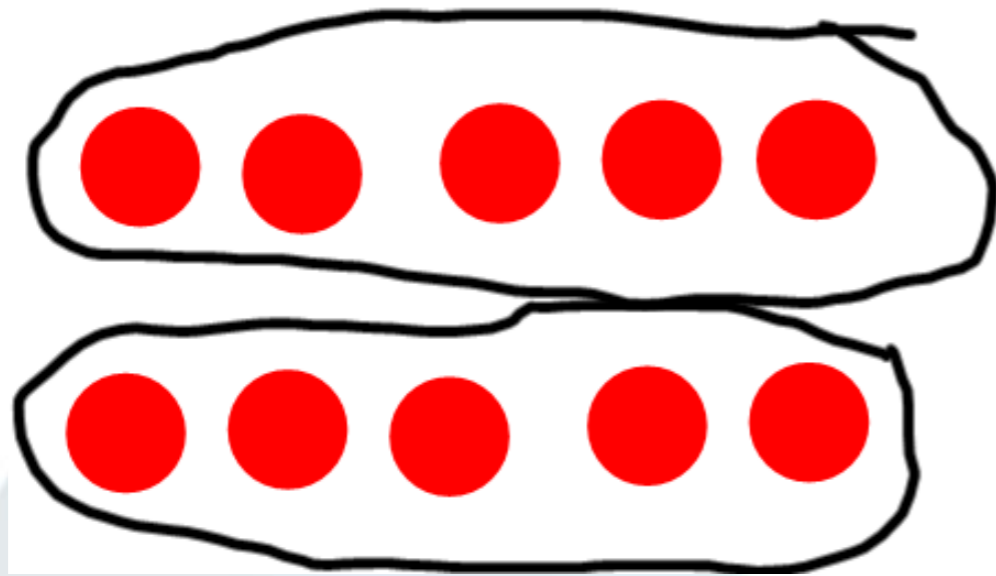


2, 4, 6, 8, 10, 12



Supporting learning times tables

- Learning multiplication tables:



$$5 + 5 = 10$$

2 groups of 5

$$2 \times 5 = 10$$

commutativity

$$5 \times 2 = 10$$

5, two times



Supporting learning times tables – helping ‘instant recall’

$$1 \times 3 = 3$$

$$2 \times 3 = 6$$

$$3 \times 3 = 9$$

$$4 \times 3 = 12$$

$$5 \times 3 = 15$$

$$6 \times 3 = 18$$

$$7 \times 3 = 21$$

$$8 \times 3 = 24$$

$$9 \times 3 = 27$$

$$10 \times 3 = 30$$

$$11 \times 3 = 33$$

$$12 \times 3 = 36$$

Calculation-based back-up strategies:

- Linking known facts
- Adding/subtracting multiples
- Doubling/halving

$$\longrightarrow 3 \times 8 = 24$$

9×3 is the same as $10 \times 3 - 3$

$$\mathbf{9 \times 3 = 30 - 3 = 27}$$



Supporting learning times tables – helping 'instant recall'

Those eleven trickiest facts:

- 6×6 , 6×7 , 6×8 , 6×9 , 6×12
- 7×8 , 7×9 , 7×12
- 8×9 , 8×12
- 12×12

Calculation-based back-up strategies:

- Linking known facts
- Adding/subtracting multiples
- Doubling/halving


**What strategies
could our children
use?**




Supporting learning times tables – helping ‘instant recall’

<https://www.q1e.co.uk/learning/multiplications>

Multiplication Strategies
See the different ways we used to find $6 \times 4 = 24$




Use a numberline
6 jumps of 4



Skip count
Count in 4's
4, 8, 12, 16, 20, 24


Repeated addition
Keep adding the same number over and over
Add 4 together 6 times
 $4 + 4 + 4 + 4 + 4 + 4 = 24$

Draw equal groups




Makes 6 groups of 4

Draw a picture



Draw an array



Makes 6 groups of 4

Supporting learning times tables – helping ‘instant recall’

<https://q1e.co.uk/current-home-learning/year-4>



Multiplication & Division Facts

2	3	4	5	6	7
$2 \times 1 = 2$ $2 \div 2 = 1$ $2 \times 2 = 4$ $4 \div 2 = 2$ $2 \times 3 = 6$ $6 \div 2 = 3$ $2 \times 4 = 8$ $8 \div 2 = 4$ $2 \times 5 = 10$ $10 \div 2 = 5$ $2 \times 6 = 12$ $12 \div 2 = 6$ $2 \times 7 = 14$ $14 \div 2 = 7$ $2 \times 8 = 16$ $16 \div 2 = 8$ $2 \times 9 = 18$ $18 \div 2 = 9$ $2 \times 10 = 20$ $20 \div 2 = 10$ $2 \times 11 = 22$ $22 \div 2 = 11$ $2 \times 12 = 24$ $24 \div 2 = 12$	$3 \times 1 = 3$ $3 \div 3 = 1$ $3 \times 2 = 6$ $6 \div 3 = 2$ $3 \times 3 = 9$ $9 \div 3 = 3$ $3 \times 4 = 12$ $12 \div 3 = 4$ $3 \times 5 = 15$ $15 \div 3 = 5$ $3 \times 6 = 18$ $18 \div 3 = 6$ $3 \times 7 = 21$ $21 \div 3 = 7$ $3 \times 8 = 24$ $24 \div 3 = 8$ $3 \times 9 = 27$ $27 \div 3 = 9$ $3 \times 10 = 30$ $30 \div 3 = 10$ $3 \times 11 = 33$ $33 \div 3 = 11$ $3 \times 12 = 36$ $36 \div 3 = 12$	$4 \times 1 = 4$ $4 \div 4 = 1$ $4 \times 2 = 8$ $8 \div 4 = 2$ $4 \times 3 = 12$ $12 \div 4 = 3$ $4 \times 4 = 16$ $16 \div 4 = 4$ $4 \times 5 = 20$ $20 \div 4 = 5$ $4 \times 6 = 24$ $24 \div 4 = 6$ $4 \times 7 = 28$ $28 \div 4 = 7$ $4 \times 8 = 32$ $32 \div 4 = 8$ $4 \times 9 = 36$ $36 \div 4 = 9$ $4 \times 10 = 40$ $40 \div 4 = 10$ $4 \times 11 = 44$ $44 \div 4 = 11$ $4 \times 12 = 48$ $48 \div 4 = 12$	$5 \times 1 = 5$ $5 \div 5 = 1$ $5 \times 2 = 10$ $10 \div 5 = 2$ $5 \times 3 = 15$ $15 \div 5 = 3$ $5 \times 4 = 20$ $20 \div 5 = 4$ $5 \times 5 = 25$ $25 \div 5 = 5$ $5 \times 6 = 30$ $30 \div 5 = 6$ $5 \times 7 = 35$ $35 \div 5 = 7$ $5 \times 8 = 40$ $40 \div 5 = 8$ $5 \times 9 = 45$ $45 \div 5 = 9$ $5 \times 10 = 50$ $50 \div 5 = 10$ $5 \times 11 = 55$ $55 \div 5 = 11$ $5 \times 12 = 60$ $60 \div 5 = 12$	$6 \times 1 = 6$ $6 \div 6 = 1$ $6 \times 2 = 12$ $12 \div 6 = 2$ $6 \times 3 = 18$ $18 \div 6 = 3$ $6 \times 4 = 24$ $24 \div 6 = 4$ $6 \times 5 = 30$ $30 \div 6 = 5$	$7 \times 1 = 7$ $7 \div 7 = 1$ $7 \times 2 = 14$ $14 \div 7 = 2$ $7 \times 3 = 21$ $21 \div 7 = 3$ $7 \times 4 = 28$ $28 \div 7 = 4$ $7 \times 5 = 35$ $35 \div 7 = 5$

8	9	10
$8 \times 1 = 8$ $8 \div 8 = 1$ $8 \times 2 = 16$ $16 \div 8 = 2$ $8 \times 3 = 24$ $24 \div 8 = 3$ $8 \times 4 = 32$ $32 \div 8 = 4$ $8 \times 5 = 40$ $40 \div 8 = 5$ $8 \times 6 = 48$ $48 \div 8 = 6$ $8 \times 7 = 56$ $56 \div 8 = 7$ $8 \times 8 = 64$ $64 \div 8 = 8$ $8 \times 9 = 72$ $72 \div 8 = 9$ $8 \times 10 = 80$ $80 \div 8 = 10$ $8 \times 11 = 88$ $88 \div 8 = 11$ $8 \times 12 = 96$ $96 \div 8 = 12$	$9 \times 1 = 9$ $9 \div 9 = 1$ $9 \times 2 = 18$ $18 \div 9 = 2$ $9 \times 3 = 27$ $27 \div 9 = 3$ $9 \times 4 = 36$ $36 \div 9 = 4$ $9 \times 5 = 45$ $45 \div 9 = 5$ $9 \times 6 = 54$ $54 \div 9 = 6$ $9 \times 7 = 63$ $63 \div 9 = 7$ $9 \times 8 = 72$ $72 \div 9 = 8$ $9 \times 9 = 81$ $81 \div 9 = 9$ $9 \times 10 = 90$ $90 \div 9 = 10$ $9 \times 11 = 99$ $99 \div 9 = 11$ $9 \times 12 = 108$ $108 \div 9 = 12$	$10 \times 1 = 10$ $10 \div 10 = 1$ $10 \times 2 = 20$ $20 \div 10 = 2$ $10 \times 3 = 30$ $30 \div 10 = 3$ $10 \times 4 = 40$ $40 \div 10 = 4$ $10 \times 5 = 50$ $50 \div 10 = 5$ $10 \times 6 = 60$ $60 \div 10 = 6$ $10 \times 7 = 70$ $70 \div 10 = 7$ $10 \times 8 = 80$ $80 \div 10 = 8$ $10 \times 9 = 90$ $90 \div 10 = 9$ $10 \times 10 = 100$ $100 \div 10 = 10$ $10 \times 11 = 110$ $110 \div 10 = 11$ $10 \times 12 = 120$ $120 \div 10 = 12$

Multiplication Chart



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



Supporting learning times tables – helping 'instant recall'

<https://q1e.co.uk/current-home-learning/year-4>

Multiplication Chart

X	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

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Supporting learning times tables – enjoying learning times tables

- USE MANIPULATIVES
- FIND PATTERNS
- USE FACT FAMILIES
- NOT TOO MUCH TALK
- GET PHYSICAL
- ASSOCIATING NUMBER FACTS
- GET CRAFTY
- MATCHING GAMES
- SINGLE IT OUT (AND WRITE IT DOWN!)
- USE TRICKS
- TRADITIONAL CHANTS, SONGS, STORIES, RAPS
- SKIP-COUNTING
- USE IT OR LOSE IT!

<https://www.q1e.co.uk/learning/multiplications>



Supporting learning times tables – helping 'instant recall'

<https://www.q1e.co.uk/learning/multiplications>

<http://www.primaryhomeworkhelp.co.uk/maths/timestable/index.html>

<https://www.math-drills.com/multiplication.php>

<https://www.topmarks.co.uk/maths-games/hit-the-button>

https://www.mathplayground.com/balloon_invaders.html

<https://www.timestables.co.uk>

<http://www.timestables.me.uk>



Three practise questions



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4 x 1



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$$6 \times 2$$



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11 x 1



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Pause to get ready!



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Start



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$$7 \times 9$$



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Quality First Education Trust

$$2 \times 3$$



Quality First Education Trust



Quality First Education Trust

$$3 \times 8$$





Quality First Education Trust

4 x 4



Quality First Education Trust



Quality First Education Trust

$$6 \times 7$$



Quality First Education Trust



Quality First Education Trust

$$7 \times 8$$



Quality First Education Trust



Quality First Education Trust

8

x

11



Quality First Education Trust



Quality First Education Trust

$$5 \times 7$$



Quality First Education Trust



Quality First Education Trust

8

x

8



Quality First Education Trust



Quality First Education Trust

$$9 \times 4$$



Quality First Education Trust



Quality First Education Trust

11 X 12



Quality First Education Trust



Quality First Education Trust

11 x 9



Quality First Education Trust



Quality First Education Trust

$$5 \times 9$$



Quality First Education Trust



Quality First Education Trust

$$6 \times 8$$





Quality First Education Trust

12 x 12



Quality First Education Trust



Quality First Education Trust

9 x 12



Quality First Education Trust



Quality First Education Trust

$$12 \times 7$$



Quality First Education Trust



Quality First Education Trust

$$4 \times 12$$





Quality First Education Trust

$$9 \times 9$$





Quality First Education Trust

7 x 12



Quality First Education Trust



Quality First Education Trust

10 x 12



Quality First Education Trust



Quality First Education Trust

12 x 9



Quality First Education Trust



Quality First Education Trust

$$8 \times 9$$





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$$3 \times 9$$





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$$6 \times 9$$



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Thank you.

You have now completed this multiplication tables check.



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