

Multiplication Tables

January 2023



How and why do we teach x tables at Holy Trinity?

- The <u>National Curriculum</u> specifies that pupils should be taught to recall the multiplication tables up to and including 12 × 12 by the end of year 4.
- Knowledge of x tables and related division facts underpins much of the mathematical work they do e.g. fractions, percentages, problem solving, ratio and proportion, problem solving

Aim: To develop a Systematic, whole class approach to learning the times tables.

- Aims to break down the learning of the times tables into manageable chunks learning a times table at a time.
- Importance of the commutative law and the relationship with division facts.
- Rote learning in which children learn the number facts
 AND a sound pattern (this is important).
- Little and often

Our thinking

- We don't want maths to be all about 'passing' tests.
- We do want our children to LOVE maths and SUCCEED within the maths curriculum.
- Time and time again, our children who can recall facts enjoy and are able to secure the maths curriculum easier than the children who can't recall these facts.
- The reality is the children who can't recall these facts inevitably fall behind because these facts are the building blocks of so many other aspects of maths.
- E.g. If I don't know 7 x 3 then I won't know 70 x 3 17 x 3 21 ÷ 3 247 x 3 etc.

How are we going to do it?

There are not many facts:

36 'building block' facts (up to 9×9). There are roughly 39 weeks in a school year, equating to essentially 1 fact a week, every year. It is achievable for the vast majority of children to learn these facts.

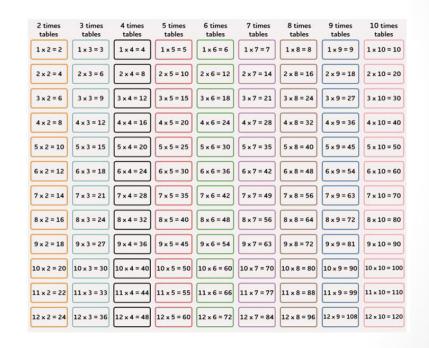
Year 3	Year 4	Year 5
10 times table	8 times table	Overlearning continues
5 times table	3 times table	practice of all times tables
2 times table	6 times table	
4 times table	9 times table	
	7 times table	
	11 times table	
	12 times table	

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

There are 144 facts to learn

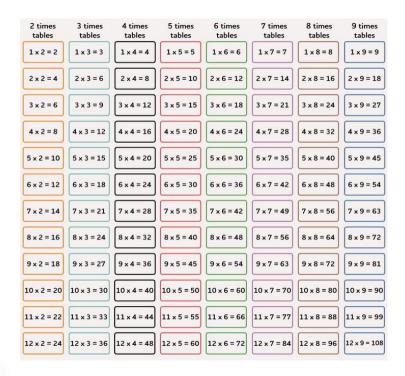
We can focus these facts down to the essentials.

- We don't need to learn the 1x table by heart. The children will know when you multiply a number by 1 you end up with the starting number = 132 facts
- We can take off the 11 and 12 times table initially, as these facts are not needed when completing short multiplication and short division = 108 facts



Take out the 10 x table.

Although a very important table children very quickly learn the pattern of multiplying by 10, so they do not need to learn it by rote



Take out the remaining 10, 11 and 12x table facts = 64 Facts remaining

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 × 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 × 2 = 8	4 x 3 = 12	4 × 4 = 16	4 x 5 = 20	4 × 6 = 24	4 x 7 = 28	4 x 8 = 32	4 x 9 = 36
5 × 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 × 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 × 2 = 14	7 x 3 = 21	7 × 4 = 28	7 × 5 = 35	7 × 6 = 42	7 × 7 = 49	7 x 8 = 56	7 x 9 = 63
8 × 2 = 16	8 x 3 = 24	8 x 4 = 32	8 x 5 = 40	8 × 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

We can continue to remove facts.

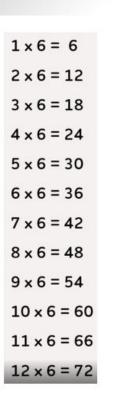
All the children will know the rule of commutative law of multiplication.

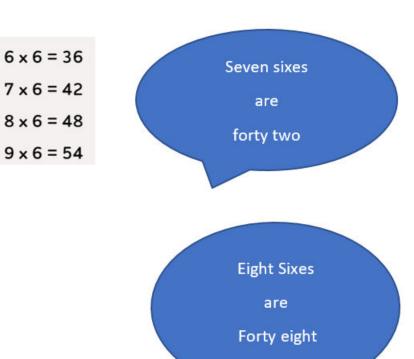
It doesn't matter which order we multiply numbers in the answer remains the same.

We can remove: 3 X 2 2 X 4, 3 X 4 2 x 5, 3 X 5, 4 X5, 2X6, 3X6, 4X6, 5X6 2X7, 3X7, 4X7, 5X7, 6X7 2X8, 3X8, 4X8, 5X8, 6X8, 7X8 2X9, 3X9, 4X9, 5X9, 6X9, 7 X9, 8X9 $2 \times 2 = 4$ $3 \times 2 = 6$ $3 \times 3 = 9$ $4 \times 4 = 16$ $4 \times 2 = 8$ $4 \times 3 = 12$ This leaves 36 facts $5 \times 4 = 20$ $5 \times 2 = 10$ $5 \times 3 = 15$ $5 \times 5 = 25$ $6 \times 4 = 24$ $6 \times 5 = 30$ $6 \times 3 = 18$ $6 \times 6 = 36$ $6 \times 2 = 12$ $7 \times 7 = 49$ $7 \times 3 = 21$ $7 \times 5 = 35$ $7 \times 2 = 14$ $7 \times 4 = 28$ $7 \times 6 = 42$ $8 \times 3 = 24$ $8 \times 4 = 32$ $8 \times 5 = 40$ $8 \times 6 = 48$ $8 \times 2 = 16$ $8 \times 7 = 56$ $8 \times 8 = 64$ $9 \times 3 = 27$ 9 x 4 = 36 $9 \times 5 = 45$ $9 \times 6 = 54$ $9 \times 7 = 63$ $9 \times 8 = 72$ $9 \times 2 = 18$ $9 \times 9 = 81$

Introducing a new times table

- We write out the whole table. Identify the facts the children already know and we are left with the new facts they need to learn.
- Through the knowledge of commutative law they can really see even at this stage how much they already know.
- Write up the associated division facts alongside the times table facts so that the children can see the clear relationship between multiplication and division.
- Learn a fact at a time.
- We learn the facts as a memorised sound pattern just like learning a song.
- We want the facts to just trip off the tongue like a song lyric, without them having to think about them.



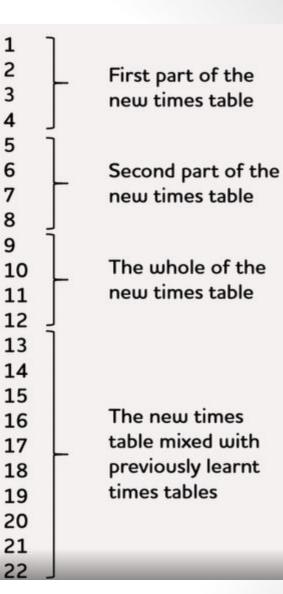


- Learn as a memorised phrase by repeating sound pattern out loud.
 Don't try to derive. If you don't know – copy down then learn later.
- Learn each fact one way round only, then get confident at switching factors.

- Don't think! (about the only time in Maths when thinking is unhelpful!) When trying to recall a fact, say the WHOLE
 number sentence out loud and see if the answer trips off your tongue. If not, try the commutative and see if it
 comes then.
- Learn one new fact at a time. Don't try to learn the whole times table at once.

	1	2		
6 x 5 =	6×6=	6 x 3 =	3×6=	
36 ÷ 6 =	24 ÷ 6 =	2 x 6 =	30 ÷ 6 =	
4 x 6 =	6 x 2 =	30 ÷ 5 =	4 x 6 =	
12 ÷ 6 =	6 x 4 =	6 x 2 =	36 ÷ 6 =	
6 x 2 =	4 x 6 =	6 x 2 =	5 x 6 =	
6 x 3 =	30 ÷ 5 =	5 x 6 =	2 x 6 =	
5 x 6 =	2 x 6 =	6 x 5 =	6 x 5 =	
4 x 6 =	6 x 5 =	12 ÷ 2 =	6 x 6 =	
3 x 6 =	6 x 6 =	4 x 6 =	18 ÷ 3 =	
18 ÷ 3 =	2 x 6 =	4 x 6 =	4 x 6 =	
30 ÷ 6 =	6 x 5 =	3 x 6 =	6 x 2 =	
6 x 4 =	6 x 5 =	24 ÷ 6 =	6 x 2 =	
6 x 4 =	12 ÷ 2 =	3 x 6 =	6 x 6 =	
6 x 3 =	5 x 6 =	2 x 6 =	6 x 4 =	
6 x 3 =	5 x 6 =	6 x 3 =	12 ÷ 6 =	
3 x 6 =	18 ÷ 6 =	6 x 5 =	6 x 6 =	
2 x 6 =	6 x 5 =	5 x 6 =	6 x 4 =	
24 ÷ 4 =	6×6=	18 ÷ 6 =	24 ÷ 4 =	
4 x 6 =	6 x 2 =	6 x 4 =	6 x 3 =	
6 x 6 =	3 x 6 =	5 x 6 =	2 x 6 =	

First part of 6 times table



$$6 \times 6 = 36$$

$$4 \times 6 = 24$$

$$6 \times 2 = 12$$

When marking the tests, the teacher chants the fact and the children repeat them <u>(six</u> fives are thirty)

For division facts we still chant the multiplication fact (six threes are eighteen).

Always chant the larger number first as this is one of the 36 facts the children are learning (six fours are twenty-four).

Multiplication tables check

Do you have a child in year 4 at primary school?

If so, your child will be participating in the multiplication tables check in June.

The purpose of the check is to determine whether your child can fluently recall their times tables up to 12, which is essential for future success in mathematics. It will also help your child's school to identify if your child may need additional support.

What is the multiplication tables check?

It is an on-screen check consisting of 25 times table questions. Your child will be able to answer 3 practice questions before taking the actual check. They will then have 6 seconds to answer each question. On average, the check should take no longer than 5 minutes to complete.



What if my child cannot access the check?

There are several access arrangements available for the check, which can be used to support pupils with specific needs. Your child's teacher will ensure that the access arrangements are appropriate for your child before they take the check in June.

The check has been designed so that it is inclusive and accessible to as many children as possible, including those with special educational needs or disability (SEND) or English as an additional language (EAL). However, there may be some circumstances in which it will not be appropriate for a pupil to take the check, even when using suitable access arrangements. If you have any concerns about your child accessing the check, you should discuss this with your child's headteacher.

Do I need to do anything to prepare my child for the check?

No, you do not need to do anything additional to prepare your child for the check. As part of usual practice, teachers may ask you to practise times tables with your child.

Schools will have unlimited access to a 'try it out' area from April. They can use this to make sure pupils have the necessary support required to access the check. This includes opportunities for pupils to familiarise themselves with the check application and try out any access arrangements that may be required.

How will the results be used?

Schools will have access to all their pupils' results, allowing those pupils who need additional support to be identified.

Will I receive feedback on my child's check?

Yes. Your child's teacher will share your child's score with you, as they would with all national curriculum assessments. There is no pass mark for the check.

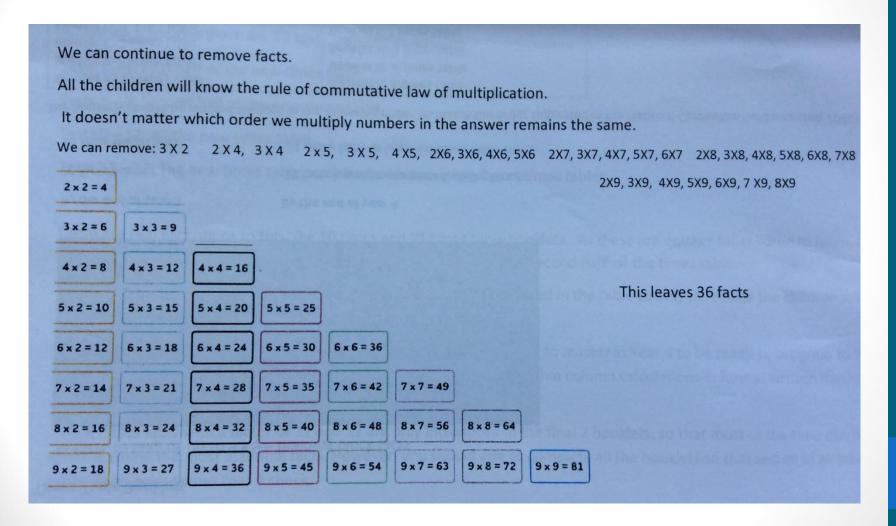
Schools must administer the MTC to all eligible year 4 pupils between Monday 5 June and Friday 16 June 2023.

Schools can use any of the following digital devices to access the check:

- PC
- laptop
- tablet



We can focus our X tables facts down to the essentials...





Weekly multiplications check

In Year 4, in preparation for the MTC, we will continue our weekly times table check alongside the children's spelling test.

We also continue to practise our times tables during the school day.



Supporting your child

- Times table rock stars https://ttrockstars.com/
- Maths frame*

 https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-
 Check
- Topmarks https://www.topmarks.co.uk/maths-games/7-11-years/multiplication-and-division
- Multiplication https://www.multiplication.com/games/all-games



Times Table Speed Challenge ×2

Name

Set 5



×2 Set 1	×2 Set 2	×2 Set 3	×2 Set 4	×2	
2 × 1 =	2 × 3 =	3 × 2 =	4 × 2 =	7 × 2 =	
4 × 2 =	9 × 2 =	2 × 7 =	10 × 2 =	2 × 2 =	
2 × 6 =	2 × 5 =	2 × 2 =	5 × 2 =	2 × 4 =	
8 × 2 =	7 × 2 =	6 × 2 =	12 × 2 =	2 × 6 =	
2 × 10 =	2 × 12 =	10 × 2 =	2 × 1 =	2 × 3 =	
2 × 2 =	2 × 2 =	1 × 2 =	2 × 11 =	12 × 2	
2 × 3 =	4 × 2 =	2 × 5 =	2 × 2 =	2 × 9	
5 × 2 =	10 × 2 =	2 × 12 =	6 × 2 =	8 × 2	
2 × 7 =	2 × 6 =	4 × 2 =	2 × 8 =	1 × 2	
9 × 2 =	2 × 1 =	8 × 2 =	3 × 2 =	2 × 5	
Time:	Time:	Time:	Time:	Time	
Score:	Score:	Score:	Score:	Score	

Multiplication Square

Bingo grids

100 110 120 99 110 121 132 108 120 132 144

Dominoes

Youtube songs and raps

Any questions?

Thank you for your continued support with your child's learning.

If you have any questions, please contact your child's class teacher via the year 4 email:

year 4@holytrinity.leeds.sch.uk

