Times Tables Policy

Aim:

This policy has been written to ensure consistency in the introduction and teaching of times tables, across the school.

Introduction:

What are some of the benefits of explicitly teaching times tables?

- ✓ Makes mental arithmetic faster
- ✓ Quick recall of facts means focus can be on more difficult concepts
- ✓ Building blocks of other areas of maths
- ✓ Related facts, links and patterns are made clear
- ✓ Preparedness for Multiplication Tables Check (MTC) and SATs

What is the Multiplication Tables Check (MTC)?

The Year 4 Maths Programme of Study states that 'Pupils should be taught to recall multiplication and division facts for multiplication tables up to 12 X 12.'

The MTC is an online test designed to assess Year 4 children's ability to fluently recall their times tables.

The test consists of 25 questions. Children have 6 seconds to answer each question. There is a 3 second gap in between questions. Below is the range of number of questions from each times table (as shown in the MTC Framework):

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

Table 1 shows the upper and lower limits for the number of items from each multiplication table that can be included in each check form.

There is an emphasis on the 6, 7, 8, 9 and 12 multiplication tables because these have been determined to be the most difficult multiplication tables.

The full Multiplication Tables Check (MTC) framework can be found here: 2018_MTC_assessment_framework_PDFA.pdf

What are the National Curriculum expectations for all year groups?

Although the MTC is administered to children at the end of Year 4, it is important to note that all year groups have a focus on multiplication tables.

Below is a breakdown of the year group expectations:

Year Group	National Curriculum Expectation
1	Count in multiples of 2, 5 and 10
2	Count in steps of 2, 3, and 5 Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables
3	Count in multiples of 4, 8, 50 and 100 Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
4	Count in multiples of 6, 7, 9, 25 and 1000 Recall multiplication and division facts for multiplication tables up to 12 × 12
5 and 6	The assumption is that by the end of Year 4 onwards all children can fluently recall multiplication and division facts up to 12 X 12*

*Children should still be given opportunities to revise quick recall of multiplication and division facts.

As shown above, children do not have to learn all the times tables up to 12 X 12 all at once. It is also important to note that children do not need to learn 144 facts; they only need to learn 66 facts! This is because of the commutative law (i.e.: if they know that 5 X 3 = 15, they also know that 3 X 5 = 15).

Multiplicand (times table) ***X*** *Multiplier = Multiple*

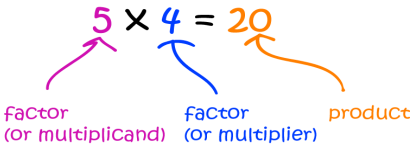
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1X1	1x2	1x3	1x4	1x5	1x6	1x7	1x8	1x9	1x10	1x11	1x12
2		2X2	2X3	2x4	2X5	2x6	2x7	2x8	2x9	2x10	2x11	2x12
3			3X3	3x4	3X5	3x6	3x7	3x8	3x9	3x10	3x11	3x12
4				4X4	4X5	4x6	4x7	4x8	4x9	4x10	4x11	4x12
5					5X5	5x6	5x7	5x8	5x9	5x10	5x11	5x12
6						6X6	6x7	6x8	6x9	6x10	6x11	6x12
7							7x7	7x8	7x9	7x10	7x11	7x12
8								8X8	8x9	8x10	8x11	8x12
9									9X9	9x10	9x11	9x12
10										10X10	10x11	10x12
11											11X11	11x12
12												12X12

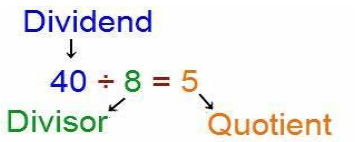
Years 1 and 2
Year 3
Year 4 (and Years 5 & 6)

The teaching of times tables at Hallfield:

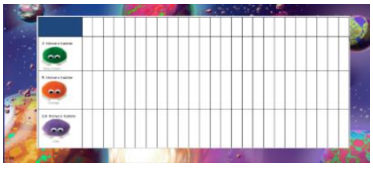
Children are given ample opportunity to practise, recall and apply their knowledge of times tables. Teachers explicitly teach age-appropriate times tables.

- At the beginning of all maths lessons, children 'chant' and recall times tables. Years 2 to 4 have a **focus times table each week.** Chanting of times tables should take place daily, at the beginning of maths lessons. Children should say the whole equation (e.g.: *"Fives times four equals twenty"*).
- An example of a **sequence of learning** for the focus times table could be: chanting and looking for obvious patterns in the multiples (e.g.: odd, even, digits add up to 9 etc); using visuals and concrete representations to look for more patterns and make links with prior knowledge; using known facts to help make links within the times table (e.g.: using a counting stick); deriving related division facts for the times table and assessment (e.g: CGP workbook, TTRS, quick verbal recall).
- The teaching of **division facts** alongside multiplication facts is vital.
- For the purposes of the **MTC**, the first number (i.e.: multiplicand) is the times table that the multiplication equation comes from. This means that 6 X 4 comes from the 6 times table and not the 4 times table. It is important to bear this in mind when teaching and testing children on their recall.
- Years 5 and 6 continue to have opportunities to recall times tables mastered in previous years. To ensure **progression and appropriate challenge**, these year groups focus more on recalling square numbers, prime numbers (up to 19), decimal numbers (e.g.: 0.6 X 8 = 4.8) etc.
- **Third Space Termly Planner** is used to map out progression for all year groups across the year.
- Mathematical **vocabulary** associated with multiplication and division is reinforced during times table practice (i.e.: product, multiplier, multiplicand, factors, multiples, lots of, groups of, inverse, dividend, divisor, quotient, rules of divisibility, squared, cubed, commutative law…).





- In addition to opportunities in maths lessons, children also use **Times Tables Rock Stars** (TTRS) to practise their recall online.
- To raise the profile of times tables and to ensure that this is maintained, Years 2 to 6 have a **display** that tracks children's mastery of times tables. When a child is considered to have mastered a times table, they are awarded with a 'Times Table Bug.' The times table focus for the week should also be displayed.

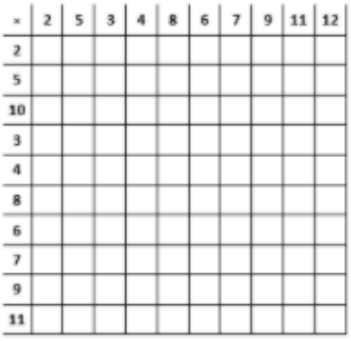




Times Tables Bug

Assessment:

Mastery of times tables is assessed by teachers and teaching assistants in various ways. In accordance with the MTC, 'mastery' will be defined as being able to fluently recall a given times table calculation, within 6 seconds. A times tables baseline assessment is carried out at the beginning of the year and repeated again every 8 to 12 weeks to measure progress.



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

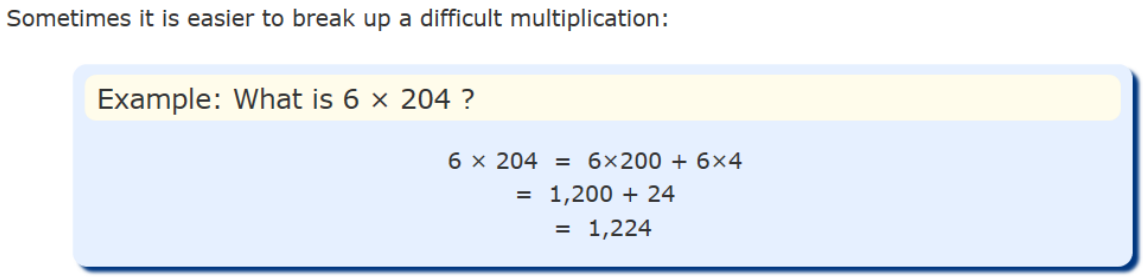
Children's progress is then tracked on Times Tables Rock Stars. Daily times tables practice and recall opportunities are also used to informally assess children's fluency and inform subsequent support. Where possible, opportunities for MTC-style practice should be provided to familiarise children with the test's layout and expectations. An example of a MTC-style resource can be found here: https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check

Application of times tables in calculations:

Activities set in maths lessons promote the use and application of times tables in different contexts (e.g.: calculating area, fractions, conversion of units of measurement etc). Teachers make the application of times tables explicit when modelling calculations. When planning maths lessons, teachers ensure that the times table focus for the week is included in the calculations so that children can apply their knowledge. Some children, who have not yet mastered their times tables, may need to use a multiplication grid to help them access the mathematical concepts being taught (e.g.: area).

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Children are also taught about the uses of the **distributive law** and how they can use their times tables known facts to break up the calculation into a more manageable one.



Using times tables facts that they are fluent in, children work out unknown products (e.g.: to work out 12 × 6 = 72 as 10 × 6 + 2 × 6 = 60 +12).

Differentiation and SEN:

The teaching and practise of times tables needs to be differentiated to meet the needs of individual children. Children working below age-related expectations have opportunities to learn, practise and recall the times table for the year group that they are working within (e.g.: a Year 4 child assessed as working within the Year 2 curriculum will need to master the 2, 5 and 10 times tables). Where possible, a times table intervention would be put in place to help children make accelerated progress.

Home learning and useful websites:

It is important to ensure that children recognise how times tables can be used in everyday life. Therefore, opportunities to use times tables outside the classroom are invaluable. Parents can help their children recognise situations where times tables knowledge can be used. For example: as a child walks home from school, a parent might ask the child to work out the number of wheels on parked cars ("How many cars are parked here? How many wheels does each car have? How can we use the 4 times table to work out the total number of wheels? Why is this more efficient than repeated addition?"). Teachers aim to include questions relating to the times table focus for the week in home learning.

Below are examples of websites that can also be used to support the learning and recall of times tables:

https://ttrockstars.com (individual log in details given)

https://mathsframe.co.uk/.../resource/477/Multiplication-Tables-Check (school log in details given)

www.mathletics.com/blog/educators/launch-into-the-multiverse/ (individual log in details given)

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

https://www.bbc.co.uk/teach/supermovers/times-table-collection/z4vv6v4

https://www.youtube.com/watch?v=9XzfQUXqiYY (more times tables songs by Mr DeMaio available on Youtube)

Sources and references:

- MTC Assessment Framework (https://www.gov.uk/government/publications/multiplication-tables-check-assessment-framework)
- Maths is Fun (https://www.mathsisfun.com/associative-commutative-distributive.html)
- Greenslade Primary School – Policy For Teaching Times Tables Across The School (https://greensladeprimary.org.uk/wp-content/uploads/2018/09/Maths-times-tables-policy.pdf)
- Third Space Times Tables Termly Planner (https://thirdspacelearning.com/resources/resource-ks1-ks2-times-tables-planner/)

Adopted: September 2020

To be reviewed: As and when appropriate