



St Mary's Catholic Primary School

Times Table Policy

Written by:	Danielle Cunningham
Date:	February 2023
Date to be reviewed:	As and when required

Intent

We strongly believe that all children, no matter what their starting points, can become confident, competent mathematicians that can recall all 12 x 12 times tables by the end of Year 4. Any children that do not meet this intention receives support and interventions to achieve these by the end of Year 6 ensuring all children leave St Mary's knowing their 12 x 12 multiplication facts.

Implementation

Children at St Mary's have a variety of opportunities to learn their times tables. They have the following:

- 5-10 minutes to the start of every Maths lesson is dedicated to times tables across the school
- This is then followed by 5-10 minutes of Maths fluency which can involve times tables such as short and long multiplication
- Times tables cards are used for assessment and identifying gaps in learning. Children are awarded a bronze sticker if they can recall a times table in order without error or pause. A silver sticker is awarded for those that can give the product of numbers out of times table sequence. A gold sticker is awarded when the product is provided and children can give the relevant multiplication and division facts for that product. School prizes are given when children achieve a gold sticker for each of their times tables.
- Times Tables Rockstars is a great platform we use in and out of school to engage children's interest in knowing their times tables. We have both intra and inter school competitions based on the scores achieved each week on TT rockstars.
- Homework is provided to whole classes and/or on an individual basis to close gaps in learning in relation to times tables

Progression of times tables throughout the school

Below is the expected progression throughout the school according to the national curriculum expectations to times tables. However, if a child is ready and secure in their current understanding, they are encouraged further their understanding by progressing through the steps.

Our whole school approach takes on board the 'Chanting' method for rapid recall, step counting and other techniques that are shown in the appendix.

- Chant twice a day to support rote learning.
- Chant in small sound bites, e.g. instead of chanting four times 8 is 32, say four eights are 32.

Requirements for satisfying the year group expectations are as follows:

- To be able to count in steps, the children are required to count on in quick succession - If the child has to count on in 1's to reach the next 5, the child is unable to count on in 5's.
- To be able to recall, the child must be able to recall the times tables and related division facts instantly
- If the child needs to count on/count up in 7's to reach 4×7 , they do not know their 7 times table. They are able to count on in 7's.
- Zero times tables should be explicitly taught in year 2 and 4

When introducing a new times table:

It is important to highlight what the children already know as known facts.

Write up the associated division facts (times table families) alongside the times table facts so that the children can see the clear relationship between multiplication and division.

Learn a fact at a time, e.g. do one a day.

Introduce times tables with counting stick activity or similar

<https://www.youtube.com/watch?v=yXdHGBfoqfw>

Highlighted information shows 'new learning and skills'

Reception	<p>Introduce the concept of $\times 1$ (one group of 5 etc)</p> <ul style="list-style-type: none"> • Solve problems with doubling and halving.
Year 1	<p>Recall and use all doubles to 10 and corresponding halves.</p> <ul style="list-style-type: none"> • Count in multiples of 2, 5 and 10. • $\times 1$ table (one group of...)
Year 2	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables</p> <ul style="list-style-type: none"> • Recognising odd and even numbers. • Count in steps of 2,3 and 5 from 0 and in 10s from any number forwards or backwards. • Begin to introduce concept of square numbers through arrays

	<ul style="list-style-type: none"> • X1 table • Begin to introduce X0 table
Year 3	<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables.</p> <ul style="list-style-type: none"> • Count in multiples 3, 4 and 8 multiplication tables. • Count from 0 in multiples of 4, 8, 50 and 100 • X1 and X0 tables • Square number times tables
Year 4	<p>Recall and use multiplication and division facts for all multiplication tables up to 12x12.</p> <ul style="list-style-type: none"> • Count in multiples of 6, 7, 9, 25 and 100 • Recall multiplication and division facts for multiplication tables up to 12 x 12 (x6, x7, x9, x11 and x12 are new tables for this year group) • Revise X0, X 1, X 2, X 3, X4, X 5, X 8, X10 • • Continue with square number times tables
Year 5	<p>Recall and use multiplication and division facts for multiplication tables up to 12x12.</p> <ul style="list-style-type: none"> • Revise all times tables (including x0 and x1) to 12x12 • Revise square number times tables • Establish whether a number to 100 is prime. Recall prime numbers to 19
Year 6	<p>Recall and use multiplication and division facts for multiplication tables up to 12x12.</p> <ul style="list-style-type: none"> • Recall and use square numbers • Recall and understand prime numbers

How will this be presented to the children?

From Year 1 onwards, all children will have this chart available to them in their classroom and in their Maths books. This is so they understand the progression of skills and how their prior and future learning, links to the times tables they are learning now:

Foundation Stage and Key Stage 1	Key Stage 2
Reception	
To be able to count in steps of 10	
To be able to count in steps of 5	Year 3
To be able to count in steps of 2	To be able to recall the 3 times table
Year 1	To be able to recall the 4 times table
To be able to recall the 10 times table	To be able to recall the 8 times table
To be able to recall the 5 times table	Year 4
To be able to count in steps of 2	To be able to recall the 6 times table
Year 2	To be able to recall the 7 times table
To be able to recall the 10 times table	To be able to recall the 9 times table
To be able to recall the 5 times table	To be able to recall the 11 times table
To be able to recall the 2 times table	To be able to recall the 12 times table
To be able to count in steps of 3	Year 5 & Year 6
	To be able to recall all of times tables facts and related divisions through regular consolidation of all.

Assessment

Assessment is used to monitor progress, inform planning and next steps and identify gaps in learning. Assessment is used in the following ways:

- AFL is used by staff within the times tables starters at the beginning of every Maths lesson
- Daily scores taken from times tables starters at the beginning of every Maths lesson

- Times Tables cards with stickers that allow teacher to track children's knowledge of each times tables
- TT rockstars assessment tool allows teacher to track children's progress and identify next steps
- Year 4 children complete a mock 'online multiplication check' test, at least once a half-term, this is then monitored and analysed.
- At the end of every half term, Years 2-6 complete a times tables test. These are questions based on the times tables children should know within that year group. Children's scores are recorded and sent to the Maths lead. This helps teachers identify where interventions are needed and what individualised homework can be provided.

Home Learning

Children need to be sent home times table homework on a regular basis, particularly in Years 3 and 4. This may be individualised to meet the needs of the children.

Times Table Rock Stars is a home learning tool to which all pupils from Year 1 to 6 have access. It is a carefully sequenced programme of daily times tables practice that has an innovative assessment tool that progresses children onto a different times tables once they can recall the previous. The school competes in an in-house tournament resulting in the class achieving the most points within that week, winning Class Dojos!

Times tables awards

In order to achieve a times tables award it is important that the child is secure in recalling the relevant times tables and related division facts.

Children get stickers (Bronze, Silver or Gold) when they achieve the necessary standards on the Times Tables cards.

As a school, we also have a Times Tables trophy awarded to 1 child per week in recognition of outstanding times tables knowledge.

Appendix

The use of CPA (Concrete, pictorial, abstract) approach when teaching times tables

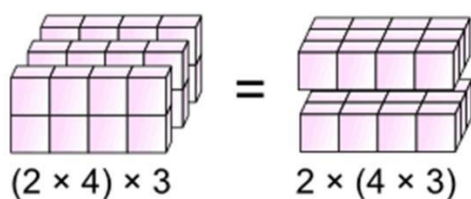
Be clear which representation you will use and why

Arrays for representing multiplication

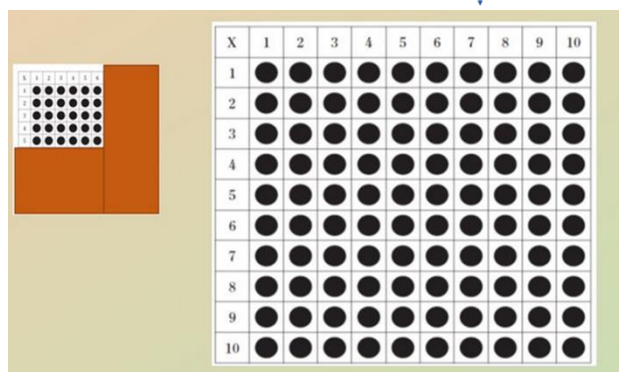
Arrays are the most versatile model for modelling the properties of multiplication (repeated addition, commutative, distributive, associative, inverse of division).

Make use of array sliders!

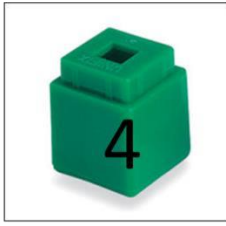
2×24 or 24×2 (10×2) + (2×2)



$$12 \times 2 = (4 \times 3) \times 2 = 24$$



Bar model for representing multiplication problems



'Molly has 4 books
Harry has five times as many books as Molly
How many books has Harry?'



$$5 \times 4 = 20 \text{ (books)}$$

4

4	4	4	4	4
---	---	---	---	---

Introduce a new times table by building it around facts that children already know.

Do this together.

e.g. We have learned the 2,3,4,5 and 10 times tables. We have already me some of the facts from the 8 times table. What are they?

$$0 \times 8 = 0$$

$$1 \times 8 = 8$$

$$2 \times 8 = 16$$

$$3 \times 8 = 24$$

$$4 \times 8 = 32$$

$$5 \times 8 = 40$$

$$6 \times 8 =$$

$$7 \times 8 =$$

$$8 \times 8 =$$

$$9 \times 8 =$$

$$10 \times 8 = 80$$

$$11 \times 8 =$$

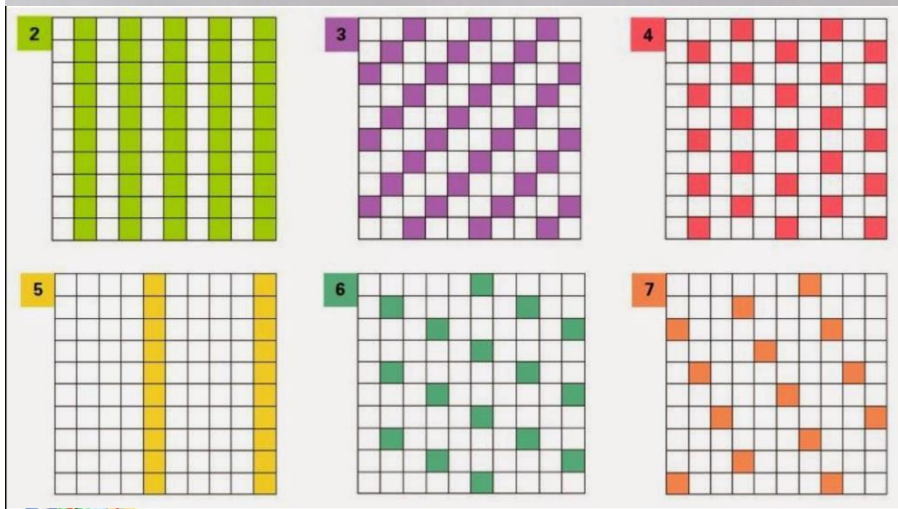
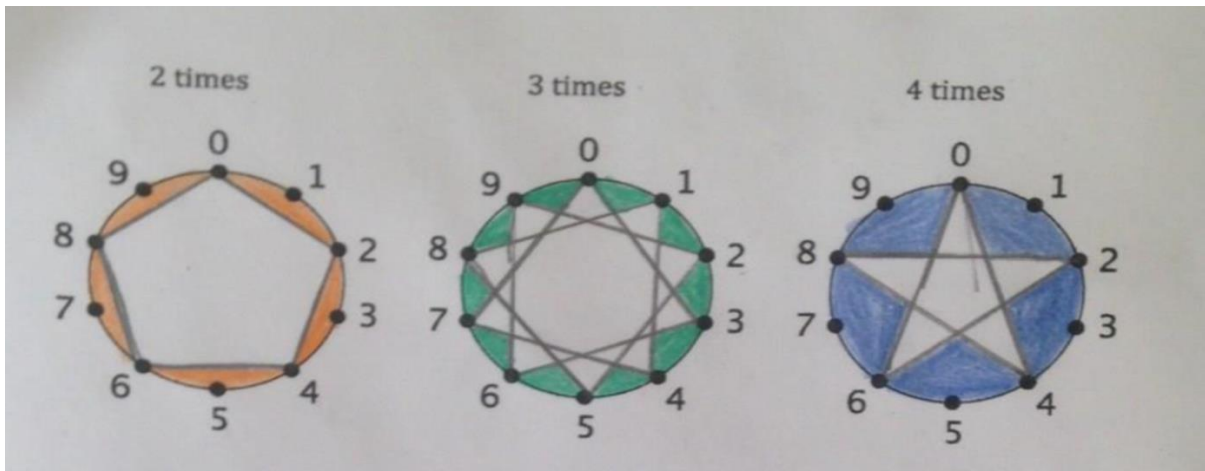
$$12 \times 8 =$$

Which facts are left to learn?

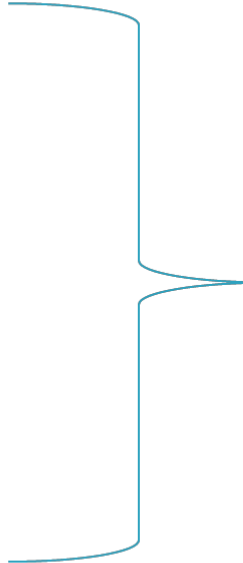
Which facts might help us to work out the facts we don't know?

**Take time to explore the patterns of each times table as you introduce it to the class.
Provide opportunities which deepen knowledge and understanding and require children to reason, conjecture, predict and explain.**

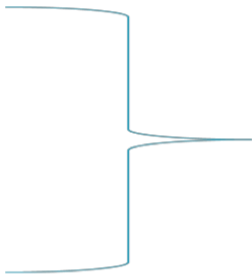
Ensure children engage with 'rich' tasks/investigations linked to times tables which encourage deeper learning, greater levels of reasoning, links to be made and patterns to be discovered.



e.g. - exploring last digit in multiples

$$\begin{array}{l} 0 \times 3 = 0 \\ 1 \times 3 = 3 \\ 2 \times 3 = 6 \\ 3 \times 3 = 9 \\ 4 \times 3 = 12 \\ 5 \times 3 = 15 \\ 6 \times 3 = 18 \\ 7 \times 3 = 21 \\ 8 \times 3 = 24 \\ 9 \times 3 = 27 \\ 10 \times 3 = 30 \\ 11 \times 3 = 33 \\ 12 \times 3 = 36 \end{array}$$


10 possible endings

$$\begin{array}{l} 0 \times 6 = 0 \\ 1 \times 6 = 6 \\ 2 \times 6 = 12 \\ 3 \times 6 = 18 \\ 4 \times 6 = 24 \\ 5 \times 6 = 30 \\ 6 \times 6 = 36 \\ 7 \times 6 = 42 \\ 8 \times 6 = 48 \\ 9 \times 6 = 54 \\ 10 \times 6 = 60 \\ 11 \times 6 = 66 \\ 12 \times 6 = 72 \end{array}$$


5 possible endings

Investigating how many different possible ending there are for different times tables. Spotting patterns and relationships.

Different ways of practice

$$4 \times 5 = 10 \square 10$$

$$6 \square 5 = 15 + 15$$

$$6 \square 5 = 20 \square 10$$

$$8 \square 5 = 20 \square 20$$

$$8 \square 5 = 60 \square 20$$

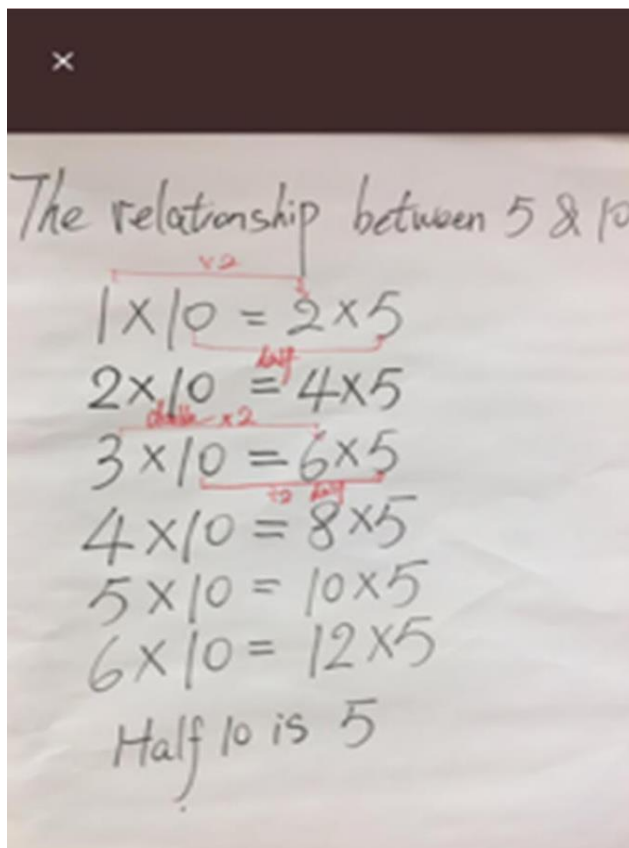
$$3 \times \square + 2 = 20$$

$$3 \times \square + 2 = 23$$

$$3 \times \square + 2 = 26$$

$$3 \times \square + 2 = 29$$

$$3 \times \square + 2 = 35$$



$2 \times 3 =$

$6 \times 7 =$

$9 \times 8 =$

$2 \times 30 =$

$6 \times 70 =$

$9 \times 80 =$

$2 \times 300 =$

$6 \times 700 =$

$9 \times 800 =$

$20 \times 3 =$

$60 \times 7 =$

$90 \times 8 =$

$200 \times 3 =$

$600 \times 7 =$

$900 \times 8 =$

Other examples of ways to deepen knowledge and understanding

Always, sometimes, never

e.g.

- Multiples of 3 are all odd
- If the digits of a number add up to 9 the number is a multiple of 9
- Multiples of 7 are odd

Multiplicative Reasoning: Lesson 1A

Models and stories

Here is an expression involving 12 and 3:

- Think of
- a. some ways of saying " 12×3 "
 - b. some ways of calculating 12×3
 - c. some diagrams that fit the expression
 - d. some stories that fit the expression.

12×3

***"What's the same, what's different ...
between the three times table and the six times table?"***

True or False

Children are given a series of equations are asked whether they are true or false:

$4 \times 6 = 23$

$4 \times 6 = 6 \times 4$

$12 \div 2 = 24 \div 4$

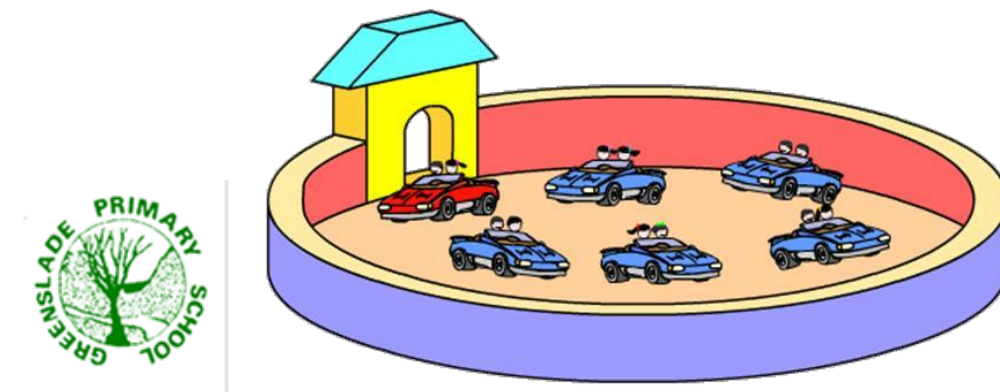
$12 \times 2 = 24 \times 4$

Consistency of how times tables are represented across the school. Language used is consistent.

Teachers should ensure they are clear about use of language 'multiplier' and 'multiplicand'. They should be confident to identify each within a multiplication problem and should encourage children to be able to identify each one within problems too.

It is fine to use the multiplier first and then the multiplicand (as long as teacher is clear and we are all doing the same).

e.g. 6 lots of 2 (things)



Addition number sentence: $2+2+2+2+2+2=12$

Multiplication number sentence: $6 \times 2 = 12$ (people)

How many cars? **6** (multiplier)

How many people in each car? **2** (multiplicand)

How many people altogether? **12** (product)

Beach ball

Throw round classroom. Person receiving must say next multiple in times tables.

Or...

Pass around room. Count silently in head. Teacher says 'back to me'. Ball returned to teacher. When teacher receives, children call out loud the next multiple.

Or...

Teacher calls out question e.g. 3×7
Throws to person. Before person catches ball, rest of class must call out the answer.



The Pendulum

Split class into two teams. Must call out next multiple in times tables.

Forwards and backwards.

Start at different points

Quiet and loud (6X can be heard in X3)

Can apply to other areas of curriculum e.g. counting in decimals, fractions, percentages.



The Counting Stick – YouTube link in policy.

