THE PRIORY
LEARNING TRUST

Multiplication Tables Policy

Rationale

Understanding … and good recall of number facts such as multiplication tables … are considered to be essential precursors for learning traditional vertical algorithms(methods) for … multiplication and division. Lack of fluency with multiplication tables is a significant impediment to fluency with multiplication and division. (Ofsted 2011)

Progression

Year group	**Number objectives**
Nursery	Noticing and arranging in patterns, solving real world problems, comparing quantities, repeating patterns
Reception	Learning the concept of a number as a group *ELG: subitise up to 5, explore and represent patterns within numbers to 10 including evens and odds, double facts and how quantities can be distributed easily*
1	Count in multiples of **twos, fives** and **tens**
2	Count in steps of **2,3** and **5** from 0 and in **tens** from any number forward or backward Recall and use multiplication and division facts for the **2,5** and **10** multiplication tables
3	Count from 0 in multiples of **4,8**, 50 and 100 Recall and use multiplication and division facts for the **3,4** and **8** multiplication tables *Through the NCETM CP approach, children will focus on 2,4,8 and the relationships between them.*
4	Count in multiples of **6,7,9,** 25 and 1000 *Through the NCETM CP approach, children will focus on 3,6,9 and the relationships between them before learning the 7, 11 and 12 multiplication tables.* Recall multiplication and division facts for multiplication tables **up to 12x12**
5	Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 Recognise and use square numbers and cube numbers and the notation for square and cubed.
6	*Continue to revise multiplication tables up to 12x12 and squared/cubed numbers.*

Organisation

In **Nursery**, children will be given opportunities to explore and investigate with number. This may include patterns in shape, object and quantity. They will sort and group items and quantities and identify and talk about patterns.

In **Reception**, introduce perceptual subitising (show two groups of three numbers which children will recognise and name as either six, or two groups of three). Explore evens and odds as well as the idea of doubling and halving groups of quantities.

In **Year One**, children will continue their learning from EYFS and will be encouraged to count in groups of 2, 5 and 10 from 0 as well as other given numbers.

In **Year Two**, children will begin learning and practising formal multiplication tables for the 2,,5 and 10 times tables. It is essential that children are taught the multiplication and division facts together, understanding the commutative law, and that they are able to recall all four facts for each multiplication table they learn (eg 2x5=10, 5x2=10, 10/2=5, 10/5=2).

In **Year Three**, children will focus on securing the 36 multiplication tables that take us up to 9x9 in school and will practise at home using the TT Rockstars app.

In **Year Four**, children will practise the 1,2,3,5 and 10 as well as the 15 key facts, continuing to be supported at home using TT Rockstars. They will be introduced formally to the 11 and 12 multiplication tables. The expectation is that by the end of LKS2, children will be fluent in the recall of all multiplication and division facts up to 12x12.

Year 3	**Year 3**	**Year 4**	**Year 3**	**Year 4**	**Year 4**	**Year 4**	**Year 4**
2 tt	**5tt**	**3tt**	**4tt**	**6tt**	**7tt**	**8tt**	**9tt**
2 x 2							
3 x 2	3 x 5	3 x 3					
4 x 2	4 x 5	4 x 3	4 x 4				
5 x 2	5 x 5						
6 x 2	6 x 5	6 x 3	6 x 4	6 x 6			
7 x 2	7 x 5	7 x 3	7 x 4	7 x 6	7 x 7		
8 x 2	8 x 5	8 x 3	8 x 4	8 x 6	8 x 7	8 x 8	
9 x 2	9 x 5	9 x 3	9 x 4	9 x 6	9 x 7	9 x 8	9 x 9
8 facts	**7 facts**	**6 facts**	**5 facts**	**4 facts**	**3 facts**	**2 facts**	**1 fact**
By end of Y3: 21 facts learnt 15 facts still to learn			**By end of Y4** 15 facts learnt to complete building blocks 21 more facts for times table check (see below)				

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

In **Year Five and Six**, children will continue to practise multiplication and division facts up to 12x12 and will be taught to recognise squared and cubed numbers (and notation).

The expectation is that by the end of KS2, children will be fluent in the recall of all multiplication and division facts up to 12x12 and will be able to apply these in all areas of mathematics, including the manipulation of these facts with varying place values.

Implementation of our Multiplication Tables Approach

1. Learn as a memorised phrase by repeating sound pattern out loud.
2. Learn each fact one way round only, then get confident at switching factors.
3. Don't think! When trying to recall a fact, say the WHOLE number sentence out loud and see if the answer trips off your tongue.
4. Learn one new fact at a time. Don't try to learn the whole times table at once.

Resource booklets

- Each booklet works progressively through learning a times table
    - Practice the first part of the new times table
    - Practice the second part of the new times table
    - Practice all the facts from the new times table
    - Mix this times table with previously learnt times table facts
- The booklets have been written to learn the times tables in this order: 2, 5, 3, 4, 6, 7, 8, 9. If you learn them in a different order in your school you will need to change the last section, which includes previously learnt facts.
- We spend lots of time securing facts to 9 x 9, as these are the building blocks they need in Y5 and Y6 to do any written algorithm (short mult and div, and long mult). These booklets all build on the last one, with a final section of mixed practice.
- There is a stand alone book for the 10 times table (which obviously comes earlier in the sequence).
- There are stand alone books for the 11 and 12 times table, which need to be done for the Y4 times table check. These do not include division facts.
- There is a mixed practice booklet for all times tables up to 12 x 12 which can be used before the check. This overweights the 6, 7, 8 and 9 times table facts as children tend to find these harder to remember. In line with the check, this does not include division facts.
- With the above exceptions, we include division facts in the booklets (about 1 in 5 questions is a division question) as it is so helpful for children in terms of understanding the inverse relationship between multiplication and division. However there are not going to be division facts in the Y4 check.
- The booklets for times tables 2 – 5 and 10 include only division by that times table (e.g.16 ÷ 2 but not 16 ÷ 8 in 2 times table) as this supports understanding of division by grouping. By the time children get to the 6, 7, 8 and 9 times table they should have a good understanding of both grouping and sharing so e.g. both 54 ÷ 6 and 54 ÷ 9 are included in the 6 times table booklet.

Using the approach

- Display a times table fact on the board or on the maths working wall (one per week)
- Introduce it with minimal language: 7x4=28 (seven fours are twenty eight). ALWAYS say the larger number first)
- Once during the week, draw out all the related facts
  7x4=28, 4x7=28
  28/4=7, 28/7=4
  28=4x7, 28=7x4
  4=28/7, 7=28/4
- Refer to it at different times during the day, EVERY day (chanting, shout out loud, ask a question – what are seven fours? Children respond with WHOLE SENTENCE)
- Children to have booklets set up that they keep on their tables. At a set point in the day, children complete ONE test (this is half of a page and is labelled with the test number at the top)
- Children mark their learning (adults in the class support) using a multiplication grid or teacher calls out answers verbally.