

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)

Times Tables are at the heart of mental arithmetic, which in itself helps form the basis of a child's understanding and ability when working with number. Once the children have learnt the times tables and related divisions by heart, they are able to work far more confidently – and efficiently – through a wide range of more advanced calculations. At Torre we believe that through a variety of interactive, visual, engaging and rote learning techniques, most children can achieve the full times tables' knowledge required by the end of Year 4.

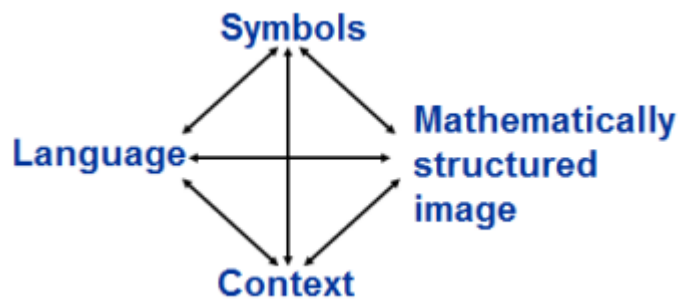
National Curriculum Times Tables Expectations

Year 1	· Count in multiples of 2, 5 and 10. · Recall and use all doubles to 10 and corresponding halves.
Year 2	· Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
Year 3	· Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
Year 4	· Recall and use multiplication and division facts for multiplication tables up to 12x12.
Year 5	· Revision of all times tables and division facts up to 12x12. Use within real-life problem solving contexts.
Year 6	· Revision of all times tables and division facts up to 12x12. Use within real-life problem solving contexts.

Note: Although step counting can be the start of the journey towards quick recall of a particular multiplication table, a child who has to derive a fact (e.g. $5 \times 6 = 30$ by counting in 5s 6 times or counting in 6s 5 times) has **not achieved** quick recall. Similarly, a child in Year 1, for example, cannot reliably count in 5s if they are deriving these steps by counting in ones.

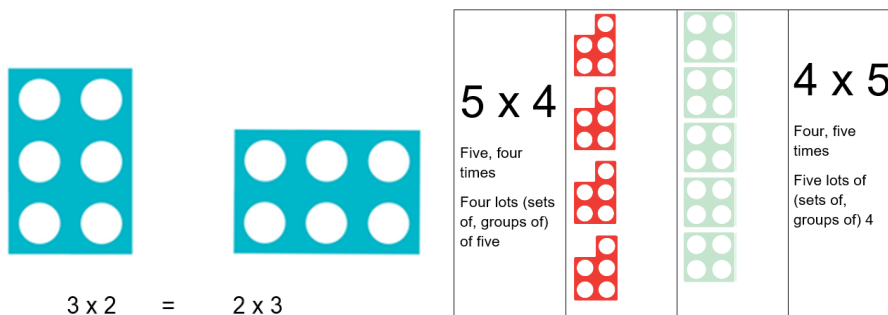
How are Times Tables learned?

Learning times tables begins in the classroom, where children learn about the fundamentals of multiplication and division in Maths lessons. It is vital that children have a secure conceptual understanding of the meaning of a multiplicative calculation, as opposed to just learning by rote. In these lessons, children will explore the times tables relevant to their year group. Children learn about the commutative law (that 3×4 is equal to 4×3) and also key relationships such as 8×5 being double that of 4×5 , or that 7×9 is seven less than 7×10 . We have a strong emphasis on the connective model to support the children's conceptual understanding. Also that division is the inverse of multiplication.



Before learning tables, children need to understand times tables in context – a variety of concrete and pictorial resources will be required to see grouping objects as repeated addition. Resources such as Numicon, multi-link cubes, real objects to group and count, arrays and ICT representations will be used.

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- Children should be encouraged to make links when working multiplicatively. If they are familiar with the 2 times table, then they should be encouraged to think about how this will help them with their 4 times table. Correct mathematical language will be introduced where appropriate – children will learn that a number in the 3 times table is referred to as a **multiple** of 3. If a number is a multiple of 3, then 3 is a factor of that number.
- Variation – children will be encouraged to look at different ways to represent a table (e.g. 2×3 is the same as 3×2) – becoming aware of the commutative law as well as being able to see multiplication as repeated addition in KS1.
- It is essential that children are able to rapidly recall learned multiplication facts so in addition to teaching them, children should practice regularly. This may be to music, with actions, using a counting stick or bead bars, etc.
- From year 2, children are expected to recall multiplication **and division** facts so it is important that when practiced, we offer children the opportunity to recall division facts also.
- As they progress through the school, deeper variation should be encouraged in the way children express times tables facts. For example 5×10 is also $(2 \times 10) + (3 \times 10)$. Children should be able to draw on other areas of maths (such as the use of brackets).
- As children become more confident, they should make links between place value and times tables facts. For example, if they know 3×4 is 12, they can calculate 30×4 as being 120.
- Once learned, children should continue to practice times tables facts in a variety of ways. This will include chanting, playing games where they must identify multiples (such as fizz buzz) and applying their tables facts in reasoning/ problem solving situations.

Displays

Times tables should be on display in all classrooms, for children to use as support and reference – although these must be covered during any assessment session. In KS1 the 2, 5, 10, 3 & 4 times tables need to be displayed. In KS2 the 2-12 times tables need to be displayed. Teachers may display other times tables if they wish. The display must be large enough for all children to see throughout the room or availability of table top resources if the display is not accessible to all. KS2 will be taught how to use a multiplication square.

Application of times tables in calculation

A child's growing understanding of times tables is only relevant if they are aware of their application in calculations and real life. In order to do this, children should be using recall of times tables and related divisions when needed in calculations.

This awareness can be created in several ways:

- Highlighting when times tables are being used during modelling
- Discussion of how they are being applied during problem solving
- Inclusion of real-life examples of times table application
- Practicing times tables on a daily basis

Home Learning

Times Table Rockstars is a home learning tool which all pupils from year 2 up have access. It is a carefully sequenced programme of times tables practice. Teachers can access and set learning tasks for pupils and children are expected to be actively encouraged to use this platform from home.

Assessment

Teachers will use teacher assessments to identify children who are falling behind with times tables. In year 4, a half-termly times table check practise takes place to support this. In the summer term, year 4 children complete the multiplication check. Teachers will have access to all their pupils' results, to allow them to identify pupils who need additional support.