



## St Anne's Primary School 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

<b>Year group</b>	<b>Number objectives</b>
Nursery	Noticing and arranging in patterns, solving real world problems, comparing quantities, repeating patterns
Reception	Learning the concept of a number as a group  <i>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</i>
1	Count in multiples of <b><u>twos, fives</u></b> and <b><u>tens</u></b>
2	Count in steps of <b><u>2,3</u></b> and <b><u>5</u></b> from 0 and in <b><u>tens</u></b> from any number forward or backward  Recall and use multiplication and division facts for the <b><u>2,5</u></b> and <b><u>10</u></b> multiplication tables
3	Count from 0 in multiples of <b><u>4,8</u></b> , 50 and 100  Recall and use multiplication and division facts for the <b><u>3,4</u></b> and <b><u>8</u></b> multiplication tables
4	Count in multiples of <b><u>6,7,9</u></b> , 25 and 1000  Recall multiplication and division facts for multiplication tables <b><u>up to 12x12</u></b>
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	<i>Continue to revise multiplication tables up to 12x12 and squared/cubed numbers.</i>

## 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 2,3,5 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  $2 \times 5 = 10$ ,  $5 \times 2 = 10$ ,  $10/2 = 5$ ,  $10/5 = 2$ ). The expectation is that by the end of KS1, children will be fluent in the recall of the 1,2,3,5 and 10 multiplication tables (up to  $10 \times$  a given number).

In **Year Three**, children will begin learning the 15 remaining facts (up to  $10 \times 10$ ) from the 4,6,7,8 and 9 multiplication tables in school and will practise at home using the TT Rockstars app.

<b>4</b> $4 \times 4 = 16$ $4 \times 6 = 24$ $4 \times 7 = 28$ $4 \times 8 = 32$ $4 \times 9 = 36$	<b>6</b> $6 \times 6 = 36$ $6 \times 7 = 42$ $6 \times 8 = 48$ $6 \times 9 = 54$	<b>7</b> $7 \times 7 = 49$ $7 \times 8 = 56$ $7 \times 9 = 63$
<b>8</b> $8 \times 8 = 64$ $8 \times 9 = 72$	<b>9</b> $9 \times 9 = 81$	

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  $12 \times 12$ .

In **Year Five and Six**, children will continue to practise multiplication and division facts up to  $12 \times 12$  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  $12 \times 12$  and will be able to apply these in all areas of mathematics, including the manipulation of these facts with varying place values.

## Strategies for teaching and learning in multiplication tables

- 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, diennes, multi-link cubes, real objects to group and count, arrays of pictures and number link boards will be used.
- Times tables are to be introduced using the PowerPoint resources provided. Teachers should amend these as appropriate to suit the needs and interests of their children.
- 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 factor of 3. Any number that is divisible by 3, producing a whole number answer, is referred to as a multiple of 3.
- Variation – children will be encouraged to look at different ways to represent a table (eg  $2 \times 3$  is the same as  $3 \times 2$ ) –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 practise regularly. This may be to music, with actions, using a counting stick or bead bars, etc.
- From Y2, children are expected to recall multiplication **and division** facts so it is important that when practised, 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  $5 \times 10$  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  $3 \times 4$  is 12, they can calculate  $30 \times 4$  as being 120.
- Once learned, children should continue to practise 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.
- Use of TT Rockstars (both the worksheets and the app) to build confidence, accuracy and speed in recall of multiplication and division facts.
- Use of TT Olympics to track children's progress in their recall of multiplication and division facts.