

Captain Webb Primary School



Multiplication Recall Planner

Introduction

The National Curriculum expectations for Primary Schools is that by the end of Year 4, pupils are capable of recalling all 12 times tables up to 12 x12.

This should be done at speed and will be tested by means of an online assessment due to be carried from Summer Term 2020.

With this in mind, the following document has been created to enable all year groups to ensure that all pupils are capable of this by Year 4.

This document will also provide a list of online resources as well as teaching methods and techniques for each year group. To secure this knowledge and to prepare children for Year 6 SATs, Year 5 and Year 6 will use the first term to consolidate learning and understanding through continuing practice.

Year 1

Autumn 1 & 2	Count in 2's up to 24, linking with even numbers and supporting doubles. Count in multiples of 10 in order up to 120.
Spring 1 & 2	Focus on counting in multiples of 5 up to 60, linking with knowledge of counting in 10s. Continue to develop fluency of counting in 2's and 10's.
Summer 1	Count in multiples of 10, 2 and 5 in order with growing fluency.
Summer 2	Count in multiples of 10, 2 and 5 in order fluently.

**Teaching
methodologies:**

- Count pairs of objects
- Count straws bundled in tens
- Sing counting songs
- Hundred square
- Number lines
- Pictorial representations on display
- Rolling Numbers

Year 2

Autumn 1	Consolidate counting in steps of 2, 5 and 10 in order from 0 up to 12x.
Autumn 2	Count in steps of 2 and 5 from 0 up to 12x fluently. Recall multiples of 10 up to 12x10 in any order, including missing numbers and related division facts with growing fluency.
Spring 1	Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts. Recall multiples of 10 up to 12x10 fluently.
Spring 2	Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts. Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts with growing fluency.
Summer 1	Count in multiples of 3 to 12x3 in order from 0. Recall multiples of 2 up to 12x2 in any order, including missing numbers and related division facts fluently. Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts with growing fluency.
Summer 2	Count in multiples of 3 to 12x3 in order from 0 with growing fluency. Recall multiples of 5 up to 12x5 in any order, including missing numbers and related division facts fluently.

Teaching methodologies:

- Counting objects in groups of 2, 5, 10 & 3
- Sing counting songs
- Hundred square
- Number lines
- Array with concrete resources
- Pictorial representations on display
- Rolling Numbers

Year 3

Autumn 1	Count in multiples of 3 to 12x3 in order from 0 fluently.
Autumn 2	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts with growing fluency. Count in multiples of 4 to 12x4 in order from 0 with growing fluency. Introduce (relating to x4) and begin to count in multiples of 8 from 0 to 12x8.
Spring 1	Recall multiples of 3 up to 12x3 in any order, including missing numbers and related division facts fluently. Count in multiples of 4 to 12x4 in order from 0 with fluently. Count in multiples of 8 to 12x8 in order from 0 with growing fluency.
Spring 2	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts with growing fluency. Count in multiples of 8 to 12x8 in order from 0 fluently.
Summer 1	Recall multiples of 4 up to 12x4 in any order, including missing numbers and related division facts fluently. Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts with growing fluency.
Summer 2	Recall multiples of 8 up to 12x8 in any order, including missing numbers and related division facts fluently.

Teaching methodologies:

- Counting objects in groups of 3, 4 and 8
- Hundred square
- Number lines
- Array with concrete resources
- Pictorial representations on display
- Rolling Numbers

Year 4

Autumn 1	<p>Recall multiples of 3,4 and 8 up to $12 \times$ in any order, including missing numbers and related division facts fluently.</p> <p>Fluently count in 6's in order up to 12×6, using multiples of 3 to support.</p>
Autumn 2	<p>Recall multiples of 6 in any order, including missing numbers and related division facts with growing fluency.</p> <p>Fluently count in 7's in order up to 12×7.</p>
Spring 1	<p>Recall multiples of 6 in any order, including missing numbers and related division facts fluently.</p> <p>Recall multiples of 7 in any order, including missing numbers and related division facts with growing fluency.</p>
Spring 2	<p>Recall multiples of 7 in any order, including missing numbers and related division facts fluently.</p> <p>Fluently count in 9's in order up to 12×9.</p> <p>Fluently count in 11's in order up to 12×11.</p>
Summer 1	<p>Recall multiples of 9 in any order, including missing numbers and related division facts with growing fluency (using $10 \times$ and adjusting by 1 group to find $9 \times$ as a strategy)</p> <p>Recall multiples of 11 in any order, including missing numbers and related division facts fluently.</p> <p>Fluently count in 12's in order up to 12×12.</p>
Summer 2	<p>Recall multiples of 9 in any order, including missing numbers and related division facts fluently.</p> <p>Recall multiples of 12 in any order, including missing numbers and related division facts with growing fluency (using $10 \times$ and adjusting by adding 2 more groups).</p>

Teaching methodologies:

- Hundred square
- Number lines
- Pictorial representations on display
- Rolling Numbers

Year 5

Autumn Term	Recall multiples of 12 in any order, including missing numbers and related division facts fluently. Recall multiples of all times tables up to 12x12 in any order, including missing numbers and related division facts with growing fluency.
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**Teaching
methodologies:**

- Pictorial representations on display
- Rolling Numbers

The National Curriculum expectations is that by the end of Year 4, children are able to recall all 12 tables up to 12 x 12.

To secure this, the first term of Year 5 and Year 6 should be used to consolidate by continuing practice.

If children are working below the structure outlined, it is recommended that interventions are put in place.

Teaching Times tables

Develop Pupils Reasoning and Understanding for Instant Recall.

If we can develop children's working memory with greater understanding and reasoning, there will be an increased transition to their long term memory and times tables can be an instantly recallable fact,

All children need to go through these cognitive steps in order to achieve this. Some will only need a light touch whilst some will need significantly longer on particular points. If you are back tracking with upper KS2 children, this is where you need to go back to:

Repeated addition

4 x 5 is the same as 5 + 5 + 5 + 5.

Children need experience of [using concrete manipulatives](#) such as counters or multilink cubes and pictorial representations of objects, forming arrays.

Multiplication is commutative

4 x 5 is the same as 5 x 4.

Children build on their existing understanding using arrays, turning the arrays around to show that you now have 5 groups of 4 and they will still total 20. This can then be linked to recalling multiplication facts, i.e. if they know their 5 times table as facts but not their 4 times table, they can use 4 x 5 to work out 5 x 4. This link needs to be made explicit.

Multiplication is the inverse of division

20 ÷ 5 = 4 can be worked out because 5 x 4 = 20.

Again, the use of arrays is key. Children need experience of pulling arrays apart into groups or sharing. After basic experience has been gained, the children should start to 'see' an array structure as 5 groups of 4 equal 20 **and** 20 can be split into 5 groups of 4.

Number families

$$4 \times 5 = 20, 5 \times 4 = 20, 20 \div 5 = 4, 20 \div 4 = 5$$

Due to their commutative understanding, by now children should also be able to see whole number families. For many children this will need to be pointed out and discussed. Most children will be able to explore this in its abstract form but if in doubt, go back to arrays.

From here it is only a short jump to understanding that any missing number can be worked out through knowledge of number families, e.g. $4 \times [] = 20$ or $[] \div 4 = 5$. There are other methods children can use to work out missing numbers but our goal is to increase working memory in order to increase instant recall from long term memory. Being able to bounce around a number family will achieve that.

1,2,3... Counting Is Key

Counting will start before beginning to develop understanding and reasoning but will continue long after, until all times tables can be counted through sequentially at speed.

Ensure counting in 2s begins with concrete manipulatives such as shoes, socks, hands etc before moving on to using counters or other manipulatives. Whenever starting children counting in a new amount, such as counting in 8s, children should be given the opportunity to see visually what that looks like to reinforce 4×8 looks quite big compared to 4×6 . They can then look for patterns such as 4×8 is the same as 4×4 , doubled.

Drilling The Times Tables

Some drilling is inevitable when developing counting, initially alongside concrete and pictorial manipulatives but quickly moving to chanting '3 times 7 is 21, 4 times 7 is 28' etc. Children should by now be used to representing numbers in different ways, for example a counter could represent 1, 2, 5, or 10. Once children are secure with this, fingers can be used to count quickly in any multiplication table.

What about the 11 x and 12 x? Get children make two fists and begin at 11 x with one finger up, two fingers up for 12 x, supported by their place value understanding

How to embed and consolidate times tables knowledge

1. Use times tables chanting

This is a simple yet effective way to drill multiplication knowledge into pupils. It may not be the most glamorous and exciting way of teaching times tables, but it is a great place to start

2. Bring some music into the classroom with times table songs

There are many table songs online:

<https://www.youtube.com/watch?v=9XzfQUXqiYY&list=RDQMZRubNUNK2e0&index=1>

<https://www.youtube.com/watch?v=0X620IeUkYE&list=RDQMZRubNUNK2e0&index=2>

3. Make use of times tables grids

It might be a simple technique, but it is one that works! Hand out times tables grids to your class and get them to fill them in. Not only will they enjoy the challenge of filling in the grid but it will encourage them to practice, practice, practice! Develop this through missing numbers and missing parts of grids.

4. Use concrete resources

It doesn't matter whether it is pasta, counters or even coins, just having a concrete resource to help pupils work out times tables can be massively beneficial.

5. Get active outside the classroom

Our times tables pavement chalk activity above is just one of the ideas you could use to make times tables learning more active and therefore memorable for your class.



6. Use pupil's interests to engage them with times tables

Use the carious interests your class will have to help teach times tables. The BBC, who have found a way to use football mascots to teach times tables.

<https://www.bbc.co.uk/sport/av/supermovers/45213394>

7. Use tricks that may be common knowledge to us, but will be revolutionary to young minds

Tricks like writing the nine times tables down or using fingers for the 9 x table, or silly rhymes for hard to remember facts.

8. Use pop quizzes

Whilst quizzes shouldn't be a regular feature, they can be a great way to help pupils get to grips with their times tables. Got 5 minutes spare when walking to swimming lessons? Get a quick-fire times tables quiz in. There is always an opportunity to fit a quick quiz in around school.

9. Ask short division based questions

Simple division questions such as "55 divided by 11" and "30 divided by 3" can help pupils realise that times tables and division are closely linked, and can be used in tandem when trying to solve a maths problem.

10. Reward pupil efforts regardless of the answer

Nobody is perfect when they are just beginning to learn about something, and this is definitely the case when it comes to times tables and primary school pupils. Don't be afraid to hand out praise when you see that a child has been working hard in their times tables, even if they haven't quite got the answer yet.

Online resources

Online Resource	URL	Suitable for Year 1	Suitable for Year 2	Suitable for Year 3	Suitable for Year 4	Suitable for Year 5
Numbergym's Table Trainer	bit.ly/Number_Gym_Trainer	✓	✓	✓	✓	✓
TES Elements	bit.ly/TESElements	✓	✓	✓	✓	✓
Sumdog	bit.ly/Sum_Dog		✓	✓	✓	✓
Manga High	bit.ly/Manga_High		✓	✓	✓	✓
Mathletics	bit.ly/Mathletics_		✓	✓	✓	✓
Matific	bit.ly/Matific_		✓	✓	✓	✓
Maths Frame	bit.ly/Maths_Frame_		✓	✓	✓	✓
Hit the Button	bit.ly/Hit_The_Button		✓	✓	✓	✓
Maths Splat App	bit.ly/Maths_Splat_App		✓	✓	✓	✓
Maths Sumo App	bit.ly/Maths_Sumo_App		✓	✓	✓	✓
Times Tables Rockstars	bit.ly/Times_Tables_Rockstars_		✓	✓	✓	✓