

# Multiplication Tables Parent Workshop


THURSDAY 14<sup>TH</sup> MARCH 2024

“At the end of the day, the most overwhelming key to a child's success is the positive involvement of parents.”

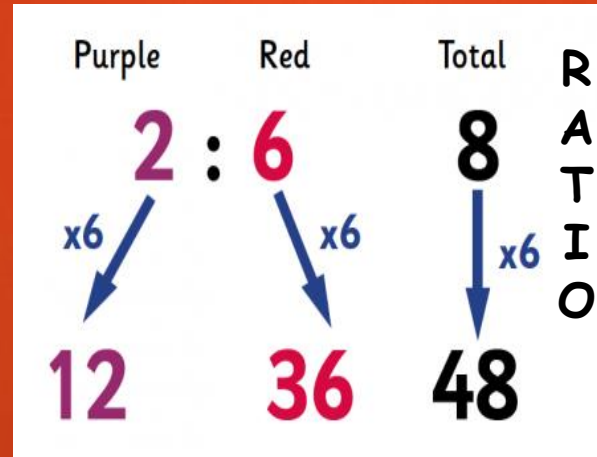
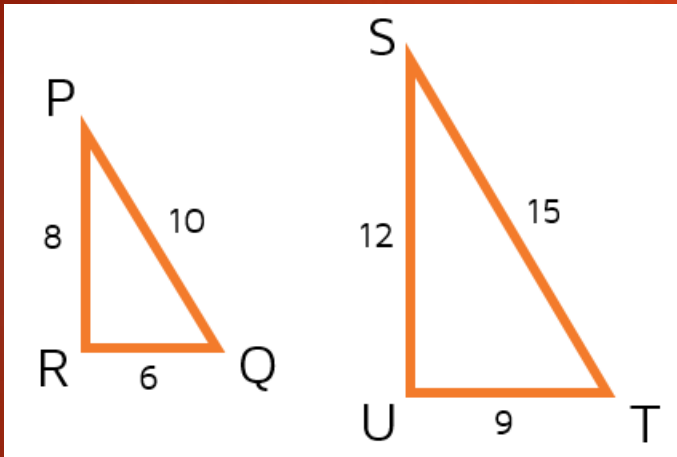
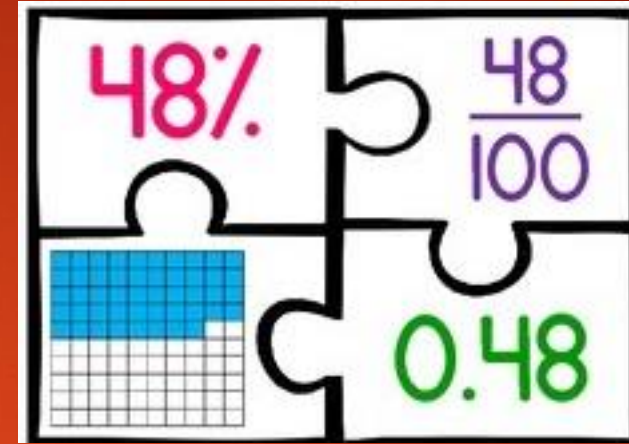
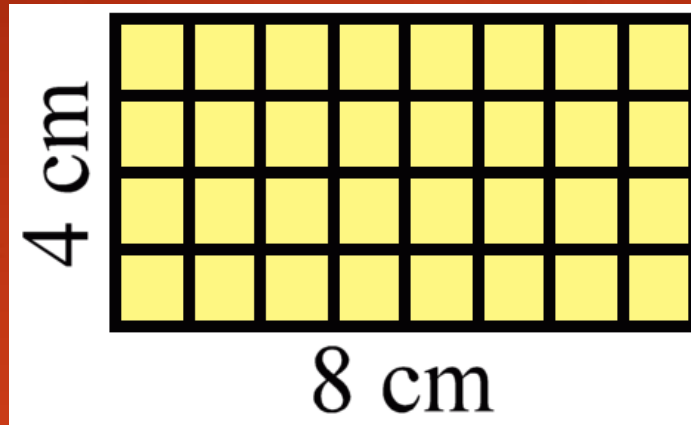
- Jane D. Hull

# National Curriculum Expectations

Year Group	Expectation
Year 1	Count in multiples of <b>2, 5 and 10</b> . Recall and use all <b>doubles to 10</b> and corresponding halves.
Year 2	Recall and use multiplication and division facts for the <b>2, 5 and 10</b> times tables including recognising <b>odd and even numbers</b> .
Year 3	Recall and use multiplication and division facts for the <b>3, 4 and 8</b> times tables.
Year 4	Recall and use multiplication and division facts for tables up to <b>12 x 12</b>
Year 5	Revision of all times tables and division facts up to <b>12 x 12</b>
Year 6	Revision of all times tables and division facts up to <b>12 x 12</b>

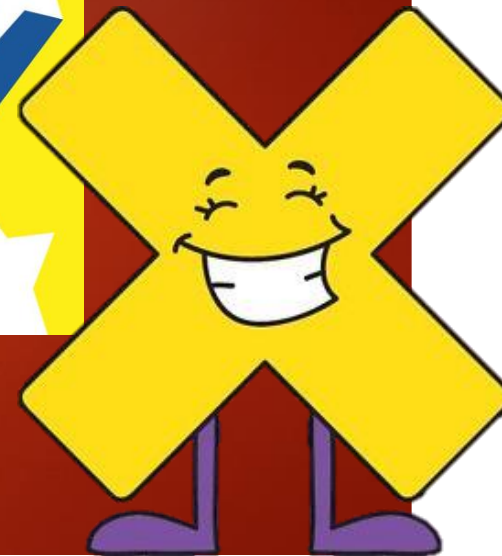


$$\begin{array}{r}
 756 \\
 \times 32 \\
 \hline
 1512 \\
 + 22680 \\
 \hline
 \boxed{24192}
 \end{array}$$



**Year 6**

**SATs**



**Why is Multiplication important?**

# Multiplication Tables Check (MTC)

- ▶ The **Multiplication Tables Check (MTC)** will be administered to children in **Year 4**, in June 2024.
- ▶ The purpose of the MTC is to determine whether Year 4 pupils can recall their multiplication tables up to 12x12 fluently as outlined in the National Curriculum.
- ▶ Children will be tested using a computer, where they will have to answer multiplication questions against a clock. The test will last no longer than 5 minutes; children will have **6 seconds** to answer each question in a series of 25.



The DfE state that the motivation behind the MTC is purely to allow teachers a chance to identify children who need some more help with their times tables to stop them from falling further behind their peers as they move up to Year 5 and then Year 6.

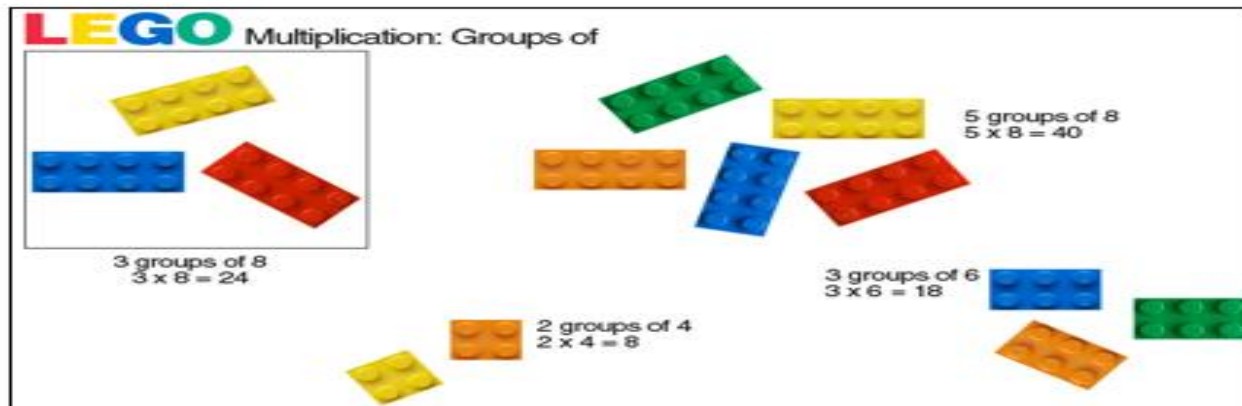


**Department  
for Education**

## Concrete Pictorial & Abstract Approach (CPA)

Manipulation of physical resources and construction of pictorial representations before conquering the abstract understanding of times tables is extremely valuable. Multiplication has a strong presence in our day-to-day life. Look for opportunities to use them when problem-solving when shopping or using recipes. In order for maths experiences to be effective children need to be able to work with and manipulate practical materials.

**LEGO** Multiplication: Groups of



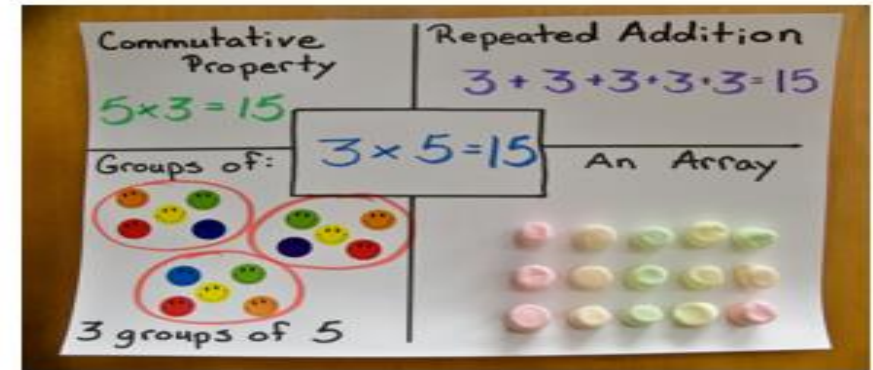
3 groups of 8  
 $3 \times 8 = 24$

2 groups of 4  
 $2 \times 4 = 8$

5 groups of 8  
 $5 \times 8 = 40$

3 groups of 6  
 $3 \times 6 = 18$

The image shows various LEGO bricks arranged to represent multiplication. A box contains three groups of eight bricks (yellow, blue, red). Other groups include two groups of four (orange), five groups of eight (orange, yellow, blue, red), and three groups of six (orange, blue, green).



Commutative Property  
 $5 \times 3 = 15$

Repeated Addition  
 $3 + 3 + 3 + 3 + 3 = 15$

Groups of:  $3 \times 5 = 15$

An Array

3 groups of 5

The image shows a piece of paper with handwritten mathematical concepts. It includes the commutative property, repeated addition, a central equation  $3 \times 5 = 15$ , and an array of 15 small colorful objects (beads or buttons) arranged in three rows of five.



You can:

- Organise a multiplication array hunt. Exploration of arrays will increase your child's understanding of multiplication.

# Moving from Concrete to Pictorial to Abstract



"groups of" ★ **Multiplication** ★ "groups of"

<p>array</p> <p><math>3 \times 4 = 12</math></p>	<p>repeated addition</p> <p><math>4 + 4 + 4 = 12</math></p> <p><math>\hookleftarrow 3 \times 4 = 12</math></p>	<p>mental math</p> <p><math>4 \times 40 = 160</math>  <math>4 \times 400 = 1600</math>  <math>4 \times 4,000 = 16,000</math></p>
<p>BOX METHOD</p> <p><math>3 \times 54</math></p> <p><math>3 \times 542</math></p> <p><math>3 \times 5,421</math></p>	<p>draw a picture</p> <p><math>3 \times 4 = 12</math></p>	<p>9's on your fingers!</p>
	<p>BOX METHOD</p> <p><math>49 \times 65</math></p>	<p>Break apart</p> <p><math>4 \times 8 = ?</math>  <math>2 \times 8 + 2 \times 8 = ?</math>  <math>(16 + 16) = 32</math></p> <p>Skip counting</p> <p>2, 4, 6, 8...          5, 10, 15, 20...          10, 20, 30, 40...</p>

## MULTIPLICATION STRATEGIES

$6 \times 182$

**Area Model**

100	+ 80	2
$6 \times 100 = 600$	$6 \times 80 = 480$	$6 \times 2 = 12$

$600 + 480 + 12 = 1,092$

**Repeated Addition**

$\begin{array}{r} 182 \\ +182 \\ \hline 364 \end{array}$

$\begin{array}{r} 364 \\ +364 \\ \hline 728 \end{array}$

$\begin{array}{r} 728 \\ +364 \\ \hline 1,092 \end{array}$

**Partial Products**

$\begin{array}{r} 182 \\ \times 6 \\ \hline 600 \\ 480 \\ 12 \\ \hline 1,092 \end{array}$

$6 \times 1 \text{ hundred}$   
 $6 \times 8 \text{ tens}$   
 $6 \times 2 \text{ ones}$

**Standard Algorithm**

Start in the ones place!

$\begin{array}{r} \phantom{0}4 \\ \phantom{0}1 \\ 182 \\ \times 6 \\ \hline 1,092 \end{array}$

$6 \times 2 = 12$   
 $6 \times 8 = 48 + 1 = 49$   
 $6 \times 1 = 6 + 4 = 10$

How would you  
work out;

$$7 \times 6 =$$

$$8 \times 8 =$$

WHAT STRATEGIES CAN YOU USE TO SOLVE  
THESE?

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=W  
XE2KUR4AHC](https://www.youtube.com/watch?v=WXE2KUR4AHC)



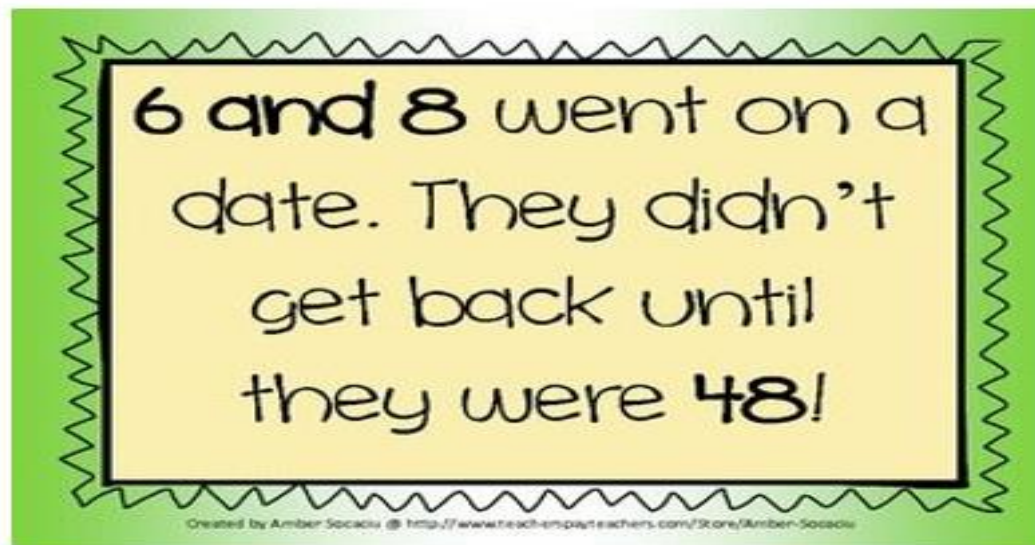
## Rhyme Time!

Silly rhymes and songs can help children to remember these patterns, e.g. '0 2 4 6 8, my mum thinks I'm great' – the sillier the better really!

$3 \times 3 = 9$	Swing from tree to tree on a vine, three times three is nine.
$7 \times 7 = 49$	Seven times seven is like a rhyme, it all adds up to 49.
$8 \times 8 = 64$	He ate and ate and was sick on the floor, eight times eight is 64.

You can:

- See if, together, you can think of a silly rhyme to go with the first few numbers in each table: '5, 10, 15, 20 ...'



## One Less Equals Nine!

This is a strategy for learning the 9 x tables. The key to it is that for any answer in the nine times table, both digits add up to 9. Try it and see!

1. Subtract 1 from the number you are multiplying by. E.g.  $7 \times 9$ , one less than 7 is 6.
2. This number becomes the first number in the answer.  
 $7 \times 9 = 6\_$
3. The two numbers in the answer add up to 9 so the second number must be 3.  $7 \times 9 = 63$  |

You can:

- Investigate this theory with your child by exploring this rule and finding more patterns. This will familiarise your child with the 9 times tables.



## Bingo!

This game will need 2 players!

Make a grid of six squares on a piece of paper and ask your child to write a number in each square from the target tables. Give them a question and if they have the answer, they mark them off. First one to mark off all their numbers is the winner!

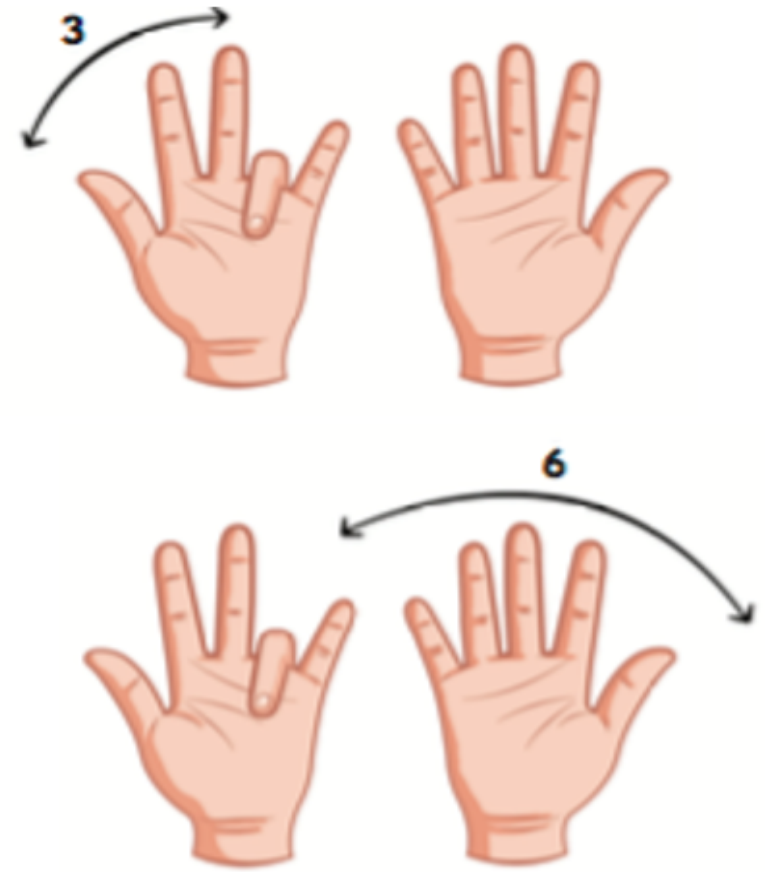


You can:

- Turn this into a family game and include a reasonable reward/incentive to entice your child.

## 9 Times Tables on your Fingers!

1. Hold your hands in front of you with your fingers spread out.
2. For  $9 \times 4$  bend your 4th finger down (like the picture).
3. You have 3 fingers in front of the bent finger and 6 after the bent finger. Thus the answer must be 36!
4. The technique works for the 9 times table up to 10.



You can:

- Explore with your child which method helps them most with the 9 times table – the more physical hand trick, or the more visual exploration of number patterns.

## Super Fingers!

This is a game for two players!

The game is basically a version of rock, paper, scissors but with numbers. Two players count to 3 and then make a number using their fingers.

Both players then have to multiply both numbers together and the quickest wins.



You can:

- Adapt other games to focus on multiplication tables, or create some totally new tables games with your child.
- Start the game by giving children a copy of the times table to refer to if they need it. Then, when they're ready for the challenge, they can try the game without.

# How can you help at home?

Year 3	Year 4	Year 4
<b>CPA approach</b> <i>(Concrete, pictorial &amp; abstract approach)</i>	<b>Tricks of the trade!</b>	<b>Engaging Websites &amp; Apps</b>
How to use resources and images to help your child understand and manipulate the times tables.	Tricks and techniques that can be explored at home to help your child memorise the times tables.	Fun, useful websites and apps to engage your child. TTRockstar



# 36 Essential Facts

2 times  
tables

3 times  
tables

4 times  
tables

5 times  
tables

6 times  
tables

7 times  
tables

8 times  
tables

9 times  
tables

$2 \times 2 = 4$

$3 \times 2 = 6$

$3 \times 3 = 9$

$4 \times 2 = 8$

$4 \times 3 = 12$

$4 \times 4 = 16$

$5 \times 2 = 10$

$5 \times 3 = 15$

$5 \times 4 = 20$

$5 \times 5 = 25$

$6 \times 2 = 12$

$6 \times 3 = 18$

$6 \times 4 = 24$

$6 \times 5 = 30$

$6 \times 6 = 36$

$7 \times 2 = 14$

$7 \times 3 = 21$

$7 \times 4 = 28$

$7 \times 5 = 35$

$7 \times 6 = 42$

$7 \times 7 = 49$

$8 \times 2 = 16$

$8 \times 3 = 24$

$8 \times 4 = 32$

$8 \times 5 = 40$

$8 \times 6 = 48$

$8 \times 7 = 56$

$8 \times 8 = 64$

$9 \times 2 = 18$

$9 \times 3 = 27$

$9 \times 4 = 36$

$9 \times 5 = 45$

$9 \times 6 = 54$

$9 \times 7 = 63$

$9 \times 8 = 72$

$9 \times 9 = 81$

# TT Rockstar



**BONNIE S**  
NEW ARTIST

## SINGLE PLAYER

**GIG**  
100 Questions

**STUDIO**  
12 x 12

**SOUNDCHECK**  
25 questions

**FESTIVAL**  
12 x 12

**ARENA**  
Auto Level 1

**ROCKSLAM**  
12 x 12

## MULTIPLAYER

## GIG

**START GIG**

100 Questions  
5 minutes

Play solo

10 per correct answer





## Useful Websites

**1. Maths Frame Multiplication Tables Check**

<https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check>

Timed tests that mirror the multiplication tables check.

**2. Timestables.co.uk**

<https://www.timestables.co.uk/6-times-table.html>

A range of tests for specific or all the times tables.

**3. Topmarks.co.uk**

<https://www.topmarks.co.uk/maths-games/7-11-years/times-tables>

Various games that can be adjusted to specific times tables.

**4. Tablestest.com**

<https://tablestest.com/>

Multiplication grid test that records the time taken for each question.

**5. Transum.org**

<https://www.transum.org/Tables/Square.asp>

Multiplication square practice, similar to what has been used in class (Y4).

## Engaging Apps

### 1. Times Table Game

*David Van Bergen*

Various questions that can be targeted for each times table.

### 2. 10 Minutes a Day Times Tables

*Dorling Kindersley*

Game that records time taken and scores each time you enter a times table race.

### 3. Math for Kids

*Angelico*

Multiplication squares and a range of questions.

### 4. Quick Maths

*Shiny Things (99p in app purchase)*

Fast paced tests that record the times taken over a period of time.

### 5. Learn Multiplication to Kids

*Mohamed Elwan*

Covers all the times tables and gives instant feedback.





**Any Questions?**