Times tables Yr2/3/4

Thursday 17th January 9 - 10am

and

Tuesday 12th February 6 - 7pm

Aims

- Understand the expectations for learning times tables
- Consider how your child might learn them
- Discuss strategies which children might use for facts they don't have 'recall' for
- Consider what parents might do to support children at home

Guidance

Multiplication tables check: development update

Information for primary schools and other interested parties about the development of an online times tables check to be administered by schools to year 4 pupils from the 2019 to 2020 academic year onwards.

Published 14 February 2018
Last updated 9 July 2018 — see all updates
From: Standards and Testing Agency

Introduction

From the 2019 to 2020 academic year onwards, schools in England will be required to administer an online multiplication tables check (MTC) to year 4 pupils.

We will conduct a national voluntary pilot between 10 June and 28 June 2019, to allow schools to familiarise themselves with the check before it becomes statutory in June 2020.

The national curriculum specifies that pupils should be taught to recall the multiplication tables up to and including 12x12 by the end of year 4.

The purpose of the MTC is to determine whether pupils can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify pupils who have not yet mastered their times tables, so that additional support can be provided.

Schools will have a 3-week window to administer the MTC. Teachers will have the flexibility to administer the check to individual pupils, small groups or the whole class at the same time.

Expectations in the National Curriculum

Year	NC statement
1	count in multiples of twos, fives and tens
2	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables
3	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
4	recall multiplication and division facts for multiplication tables up to 12 × 12
5	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})

Year 2

Skip counting drawing on the concept of repeated groups in multiplication.

3 + 3 + 3 + 3 = 12

I can see 4 groups with 3 cars in each group. There are 12 cars altogether.

Core skill: DOUBLING and HALVING

Doubles

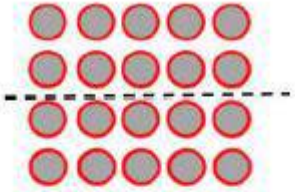
I can also see two groups of six.

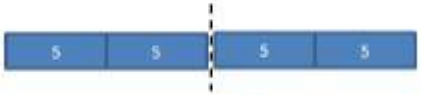
Leading to linear and area models.

There are 4 groups of 3 cars. That is 12 cars altogether. I can see 12 cars with 4 groups of 3 cars.

2 x 5 is equal to double 1 x 5.

Year 2
Numbers to 100





4 x 5 is double 2 x 5.
I can show it as an array and as a linear model.

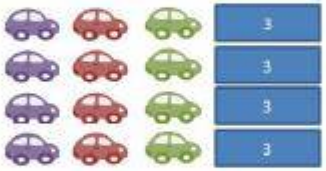
Think multiplication

Introduction of the array and linear model to explore how the relationship of multiplication and division relate.

In multiplication, explore how multiplier, multiplicand and product interrelate.

In division, explore how dividend, divisor and quotient interrelate and link to multiplication.

4 x 3 = 12



Number in each group
3

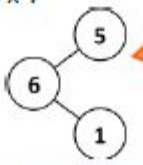
Number of groups
4

4 x 3 = 12
3 x 4 = 12
12 ÷ 3 = 4
12 ÷ 4 = 3

Applying understanding of benchmark numbers.

Think 5 for multiplication and division

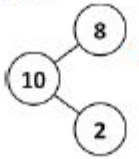
6 x 5 = 5 x 5 + 5 x 1



5 x 5 and one more group of 5 is equal to 6 x 5.

Think 10 for multiplication and division

8 x 5 = 10 x 5 - 2 x 5

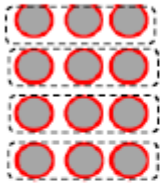


8 x 5 is two groups of 5 fewer than 10 x 5.

...continued

12 ÷ 3 = 4

I can see that 3 can be taken from 12, four times.

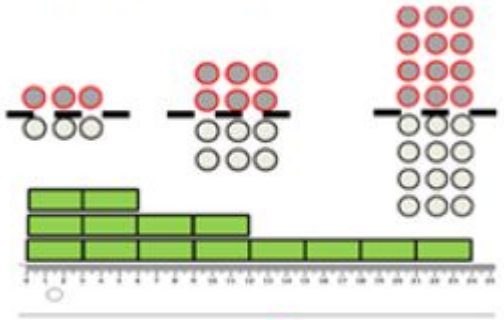


I can see that 12 can be shared into 4 equal groups with 3 in each group.

I know that I can use 4 x 3 = 12 to answer 12 ÷ 3 or 12 ÷ 4.

Year 3

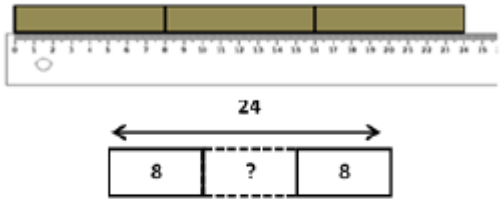
To include 'double and double' strategy for x8 and halving strategy for finding x5.



I can find 5 lots by finding 10 lots and halving the product.

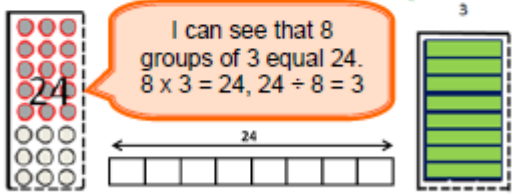
Think multiplication for division e.g. 24 ÷ 8

By grouping



I can see that 3 groups of 8 equal 24.
3 x 8 = 24, 24 ÷ 8 = 3

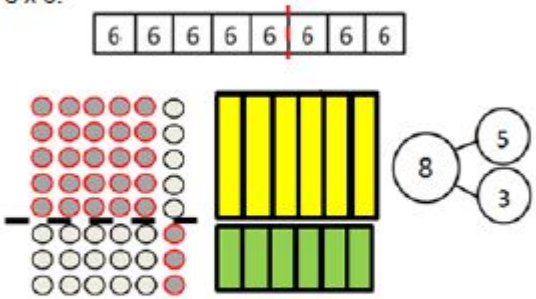
By sharing



Leading to fractional understanding – see Year 2 progression and extend into further fractions.

Think 5x fact
Application of the distributive law.

Regrouping the multiplier (number of groups) e.g. 8 x 6.

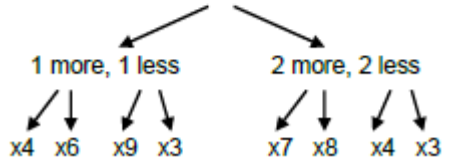


8 x 6 = 5 x 6 + 3 x 6

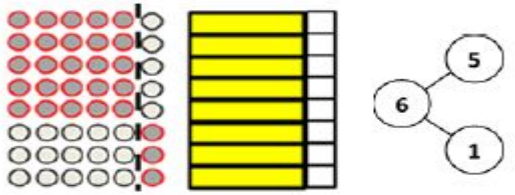
I can use my 5 fact to solve 8 x 6.
I know 5 x 6 is 30 and 3 x 6 is 18.
So 8 x 6 is 48.

Where on the stick will we place 32? Explain how you know.

If I know x1, x2, x5, x10, what else can I work out?



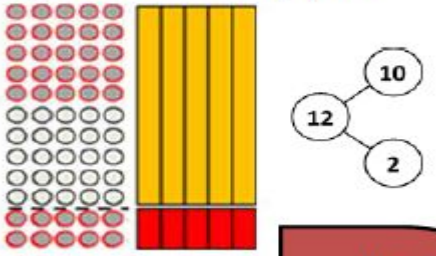
Regrouping the multiplicand (number in the group) e.g. 8 x 6.



8 x 6 = 5 x 8 + 1 x 8

I can use my 5 fact to solve 8 x 6.
I know 8 x 5 is 40 and 8 x 1 is 8.
So 8 x 6 is 48.

Applying to **think 10**. For example, 12 x 5.



12 x 5 = 10 x 5 + 2 x 5

Year 3 Numbers to 1000

9 x 3 = 10 x 3 - 3

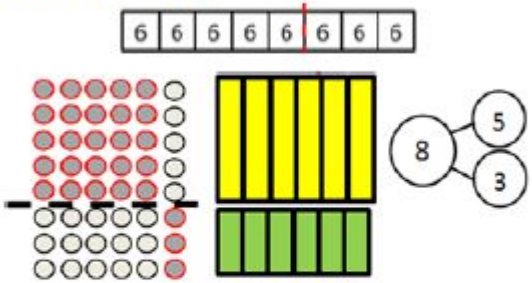
9 x 3 = 10 x 3 - 1 x 3

Nine groups of three is equal to 10 groups of three, less 1 group of 3.

Year 4

Think 5x fact
Application of the distributive law

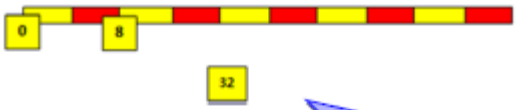
Regrouping the multiplier (number of groups).
For example, 8 x 6.



I can use my 5 fact to solve 8 x 6.
I know 5 x 6 is 30. 3 x 6 is 18.
So 8 x 6 is 48.

8 x 6 = 5 x 6 + 3 x 6

Year 4
Numbers to 10000



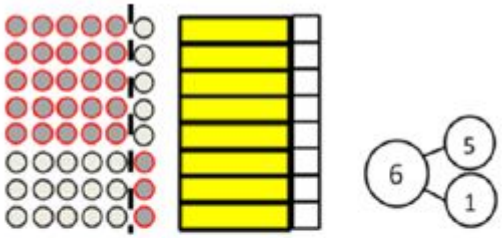
Where on the counting stick will we place 32? Explain your thinking.

If I know x1, x2, x5, x10, what else can I work out?

1 more, 1 less: x4 x6 x9 x3

2 more, 2 less: x7 x8 x4 x3

Regrouping the multiplicand (number in the group)
e.g. 8 x 6.



I can use my 5 fact to solve 8 x 6.
I know 8 x 5 is 40. 8 x 1 is 8.
So 8 x 6 is 48.

8 x 6 = 8 x 5 + 8 x 1

Regrouping used for multiple strategies.

7 x 8

I can find 7 x 8 in lots of ways if I didn't know it.
I can try 7 x 4 x 2 or 8 x 8 - 8.

3 x 9 = 3 x 10 - 3

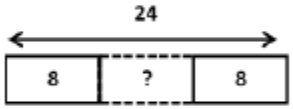
Nine groups of three is equal to ten groups of three, less 1 group of 3.

I could use this to find 90 x 3.
100 x 3 - 10 x 3

Think multiplication for division
For example, 24 ÷ 8.

By grouping

I can see that 3 groups of 8 equal 24.
3 x 8 = 24, 24 ÷ 8 = 3



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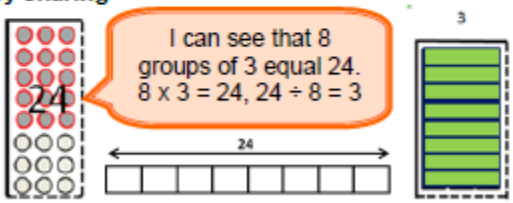
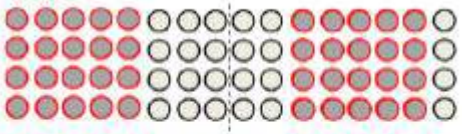


I can see that 8 groups of 3 equal 24.
8 x 3 = 24, 24 ÷ 8 = 3

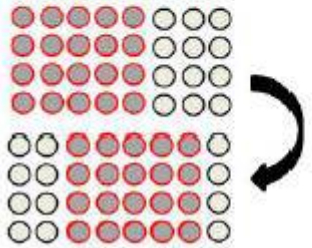
Leading to fractional understanding – see Year 2 progression and extend into further fractions.

Children should explore **rearranging** arrays to simplify multiplications but conserve the area.

4 x 16 =



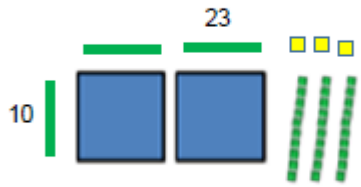
Can become 8 x 8



Doubling the 4x and halving the group of 16 gives me 8 x 8. The area remains equal.

Check pupils understand the concept of multiplying and dividing by 1 and 0.

Place value drawing out the implications of multiplying and dividing by 10 and 100 on 2-digit numbers e.g. 23 x 10.



23 groups of ten.
20 groups of ten is equal to 200.
3 groups of ten is equal to 30.
23 groups of 10 is equal to 230.

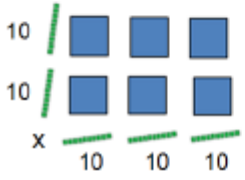
☐ = 3 x 40

3 groups of 4 tens is equal to 12 tens.
12 tens is 120.
So 120 = 3 x 40.

☐ = 120 ÷ 3

120 is 12 tens. 12 tens divided into 3 groups is equal to 4 tens. 4 tens is 40.
So 40 = 120 ÷ 3.

20 x 30 = ☐



When I multiply 10 by 10 it equals 100.
2 tens multiplied by 3 tens is equal to 6 hundreds.

How do you learn a multiplication table?

counting up and back in steps

playing games

tests

chanting

songs

tricks e.g. 9s

writing lists

apps

How do you learn a multiplication table?

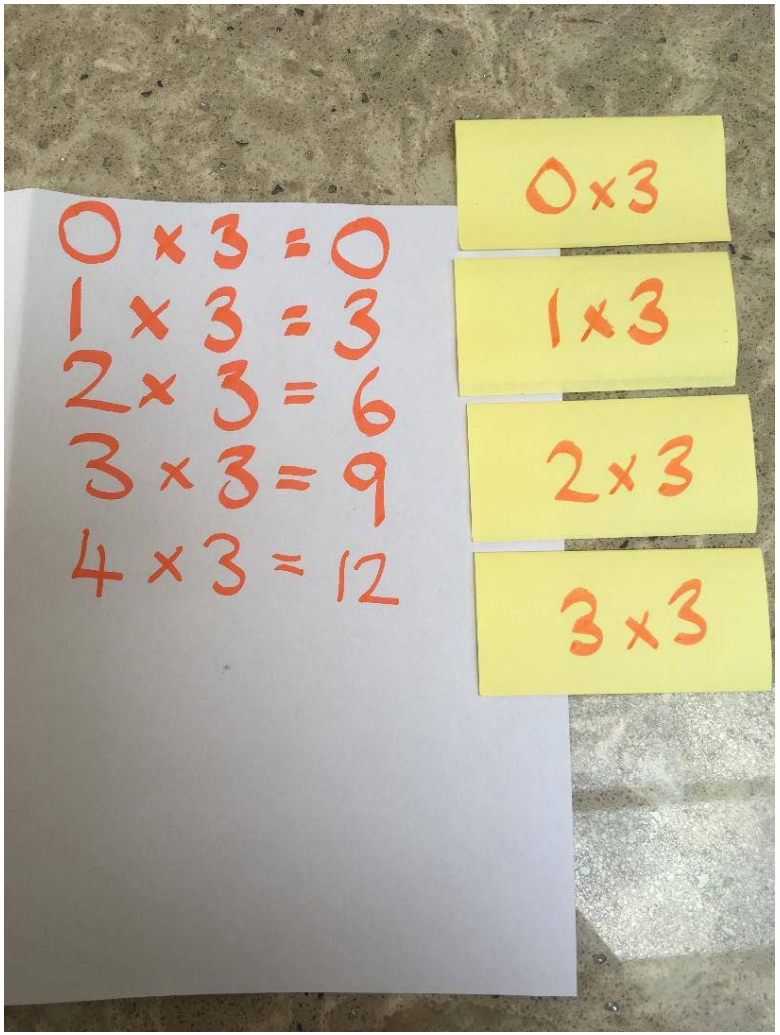
Learn the facts	Practice and rehearsal opportunities	Games for rehearsal and application	Recall/test

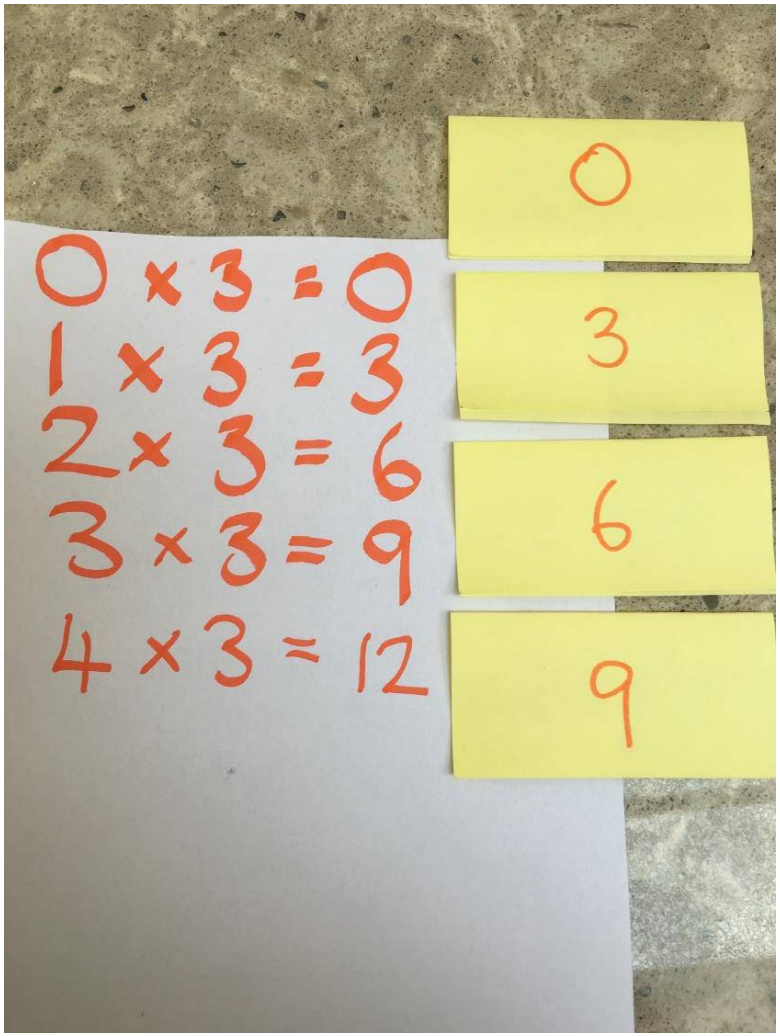
https://youtu.be/yXdHGBfoqfw

Tables with a number stick

Pasta, lego, cars, beads…

Make your own card game





Play to rehearse and learn

With the card in order first:

- How quickly can you remember what is on the back?
- Can you start from 0? Can you start from the biggest answer?

Then mix up the cards:

- Take turns choosing cards – you keep the card if you are correct
- Notice which cards you leave until last – make a special effort to learn these.

Times Table Strategies

Doubling/Halving (x2, x4, x8) (x3 to x6)

One lot more, one lot less

Near 2s, 5s and 10s

Squares

Zero effect (___ x 0 = 0)

Switch it (5 x 8 = 8 x 5)

Tricks e.g. 9s

Songs and rhymes

What do I do now?

- Decide which times table is 'next' on the list to learn…
  2s, 5s, 10s, 3s, 4s, 8s, 6s, 7s, 9s, 11s, 12s

- Spend time *learning* the facts –
  - make them (pasta, cars, beads…)
  - write the list,
  - create the card game,
  - play with the cards

- Remember there are strategies for the ones which are tricky to remember

https://ttrockstars.com

Ladbrooke JMI School

Guide to

Learning and practising

Multiplication Tables

The expectation is that by the end of Y4 all children should know their times tables up to 12 x 12.
Year by year this looks as follows:

End of Y1	x10
End of Y2	x10, x5, x 2
End of Y3	x10, x5, x 2, x3, x 4, x 8
End of Y4	All tables up to 12 x 12

This leaflet will support you in helping your child learn their times tables and then ways to practise so their recall of tables gets quicker. Our target is to be able to recall any multiplication or division fact in under 5 secs.

Learning and Practising Times Tables

How do you learn times tables?

Learn the facts	Practise and rehearse	Games for rehearsal	Recall/test

1. Learn the Facts

Cut out 12 small cards (about the size of a credit card). On one side write the multiplication sum and on the other, write the answer.

Practise by putting the multiplication sums in order and then turning over to check you know the answer.
Look for patterns in the answers

2. Practise and Rehearse

With the cards in order first, how quickly can you remember what is on the back?
Can you start from 0? Can you start with the biggest answer?
Now mix up the cards. Take it in turns to choose the cards. Keep the card if you are correct,. Notice the cards you leave until last—make a special effort to learn these.

3. Games for Rehearsal

Play 3 in a row. Choose the table you are on. Roll two dice and add the dice together. Multiply this number by your chosen times table and write the answer in the box. The winner is the first person to get three correct answers in a row.
E.g. If I am doing my 4 times table and a roll a 3 and a 4.
3 + 4 = 7. Multiply 7 by 4 to get 28 and I write 28 in the box under the 7 (see below)

1	2	3	4	5	6	7	8	9	10	11	12
						28					

Learning and Practising Times Tables

Game Board

Three in a row

1	2	3	4	5	6	7	8	9	10	11	12

Working in pairs
You each need a different colour pencil
Roll your dice (if I roll 5 I need to work out 3 x 5)
Write the answer in the correct square
The winner is the person who gets 3 in a row first

TT Rockstars

As a school we have subscribed all children to TT Rockstars. Each child will have a username and a password. Teachers will set your child times tables to learn and your child can go on and play.
There are 2 main solo games they can play. Garage is a solo game where the teacher has set the times tables to practice. This is the best way to improve your tables knowledge. Studio tests your child on all the tables up to 12 x 12. It is Studio that your child's rock speed is calculated. As your child gets quicker, they will increase their Rock Status.

<1 second	Rock Hero	<7 secs	Unsigned Artist
<2 seconds	Rock Legend	<8 seconds	Gigger
<3 seconds	Rock Star	<9 seconds	Busker
<4 seconds	Headliner	<10 seconds	Garage Rocker
<5 seconds	Support Act	>10 seconds	Wannabe
<6 seconds	Breakthrough Artist		

REMEMBER our aim is be under 5 seconds for each times table. Have a go and try to improve your time and beat the teachers!

What Next?

Decide which times table is next on the list to learn

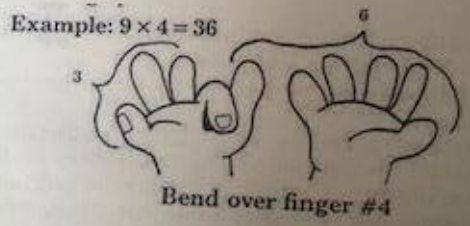
2s, 5s, 10s **3s, 4s, 8s,** **6s, 7s, 9s, 11s, 12s**

Spend time ***learning*** the facts -

- make the times tables out of pasta, cars, beads etc
- write a list of the times table
- create a card game
- play with the cards
- practise on TT Rockstars

Remember there are strategies for the ones that are tricky to remember

9 Times table—Finger Trick



Doubling Trick

If you know your 3 times table then your 6 times table is double

3 x **3** = 9 so 3 x **6** = 18

If you know your 4 times table then your 8 times table is double

6 x **4** = 24 so 6 x **8** = 48

Thank you for attending this workshop and for your continued support.

Any questions…

Please fill in an evaluation