



Times Tables

The Key to multiplication and division

Including Information About The Year 4 Multiplication Check



Why Knowing Your X Tables Is Important

- Multiplication facts underpin a lot of maths knowledge:
- Division
- Fractions
- Percentages
- Multiplication
- Number sequences
- Many more!
- All these areas when linked to problem solving
- Expectations (\times and \div) from Y1 – 4 in the National Curriculum

Important information about multiplication tables check (MTC)



- The MTC determines if Year 4 children can **fluently** recall their multiplication tables.
- They are designed to help schools identify which children require more support to learn their times tables.
- There is no 'pass' rate or threshold which means that, unlike the Phonics Screening Check, children will not be expected to re-sit the check.
- The Department for Education (DfE) will create a report about the overall results across all schools in England, not individual schools.



When the check will take place



- There will be a **3 week window** from **Monday 5th June to Friday 23rd June 2023** for schools to administer the check.
- There is **no set day** to administer the check and children are not expected to take the check at the same time.
- All eligible Year 4 children in England will be required to take the check.



How the check is carried out



- The check will be **fully digital**.
- Answers will be entered using a keyboard, by pressing digits using a mouse or using an on-screen number pad.
- Usually, the check will take less than **5 minutes** for each child.
- The children will have **6 seconds** from the time the question appears to input their answer.
- There will be a total of **25 questions** with a **3 second pause** in-between questions.
- There will be **3 practice questions** before the check begins.
- Examples of the test format to use can be found on **TTRS as The Sound Check** and by using the link below
- <https://mathsframe.co.uk/en/resources/resource/477/Multiplication-Tables-Check>



Specific arrangements for the check



Some children will be eligible for specific arrangements:

- Colour contrast;
- Font size adjustment;
- 'Next' button (alternative to 3-second pause);
- Removing on-screen number pad;
- An adult to input answers;
- Audio version;
- Audible time alert.



The check questions

- Each child will be **randomly assigned** a set of questions
- There will only be **multiplication** questions in the check, not division facts.
- The 6, 7, 8, 9 and 12 times tables are **more likely** to be asked.
- Reversal of questions (e.g. 8×6 and 6×8) will not be asked in the same check.
- Children will not see their individual results when they complete the check.





Ways to support times table knowledge

- Count and look for patterns.
- Understand that multiplication is repeated addition.
- Remember that multiplication is commutative.
- Remember that multiplication is the inverse of division.
- Recall and utilise number families.

Use different representations to represent multiplication, such as:

- Concrete manipulatives such as multilink cubes or counters.
- Create pictorial representations such as arrays.

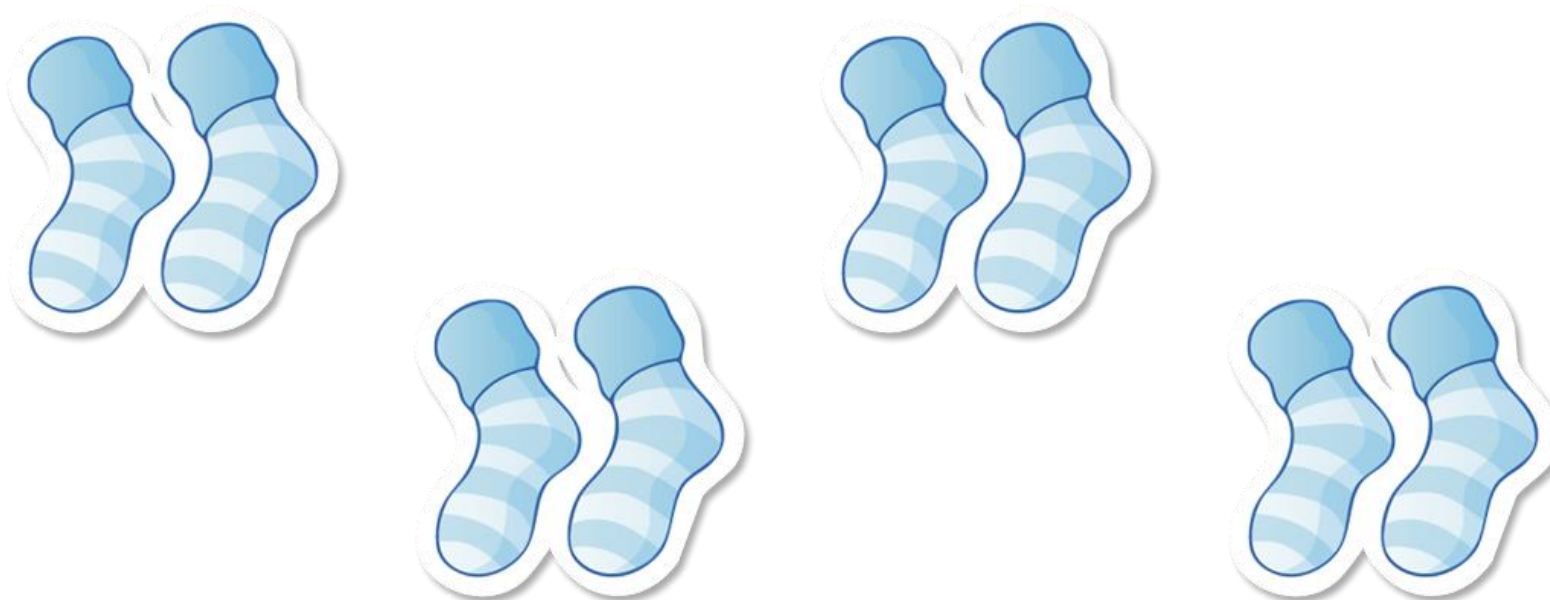


Counting and looking for patterns.



Example: Counting in 2s
2, 4, 6, 8, 10...

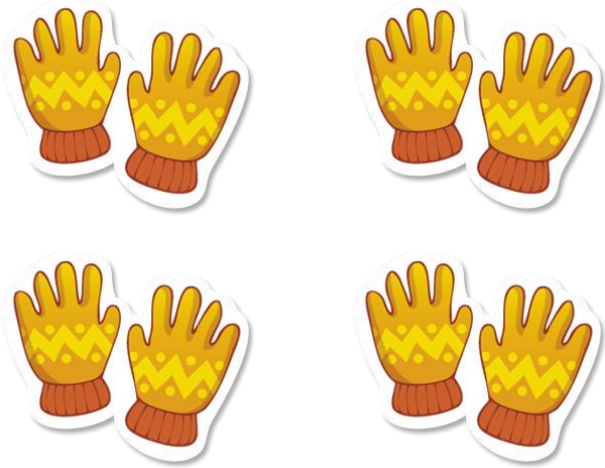
- Ensure children have a strong understanding of counting in groups first.
- When children are secure with counting, they can then look for patterns.



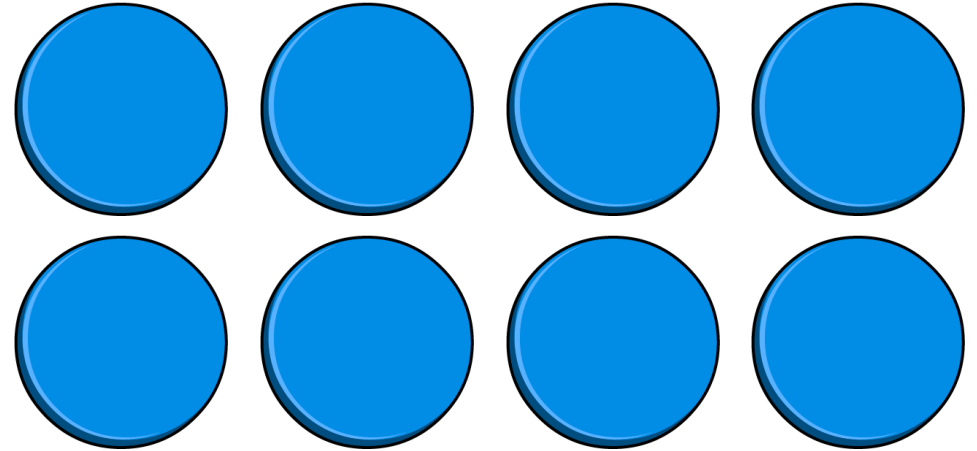
Repeated addition



Knowing that 2×4 is the same as $2 + 2 + 2 + 2$



$$2 + 2 + 2 + 2 = ?$$



$$2 \times 4 = ?$$

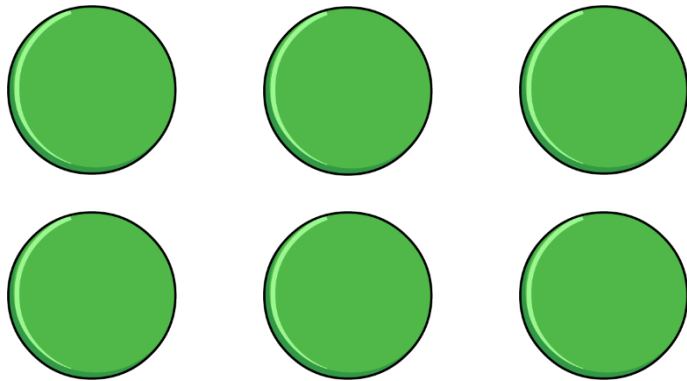


Multiplication is commutative

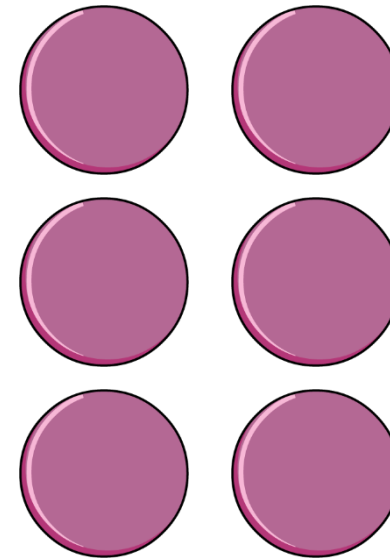


3×2 is the same as 2×3

Children need to understand that multiplication can be completed in any order to produce the same answer. Sometimes this link needs to be made explicit.



3 lots of 2 = 6



2 lots of 3 = 6

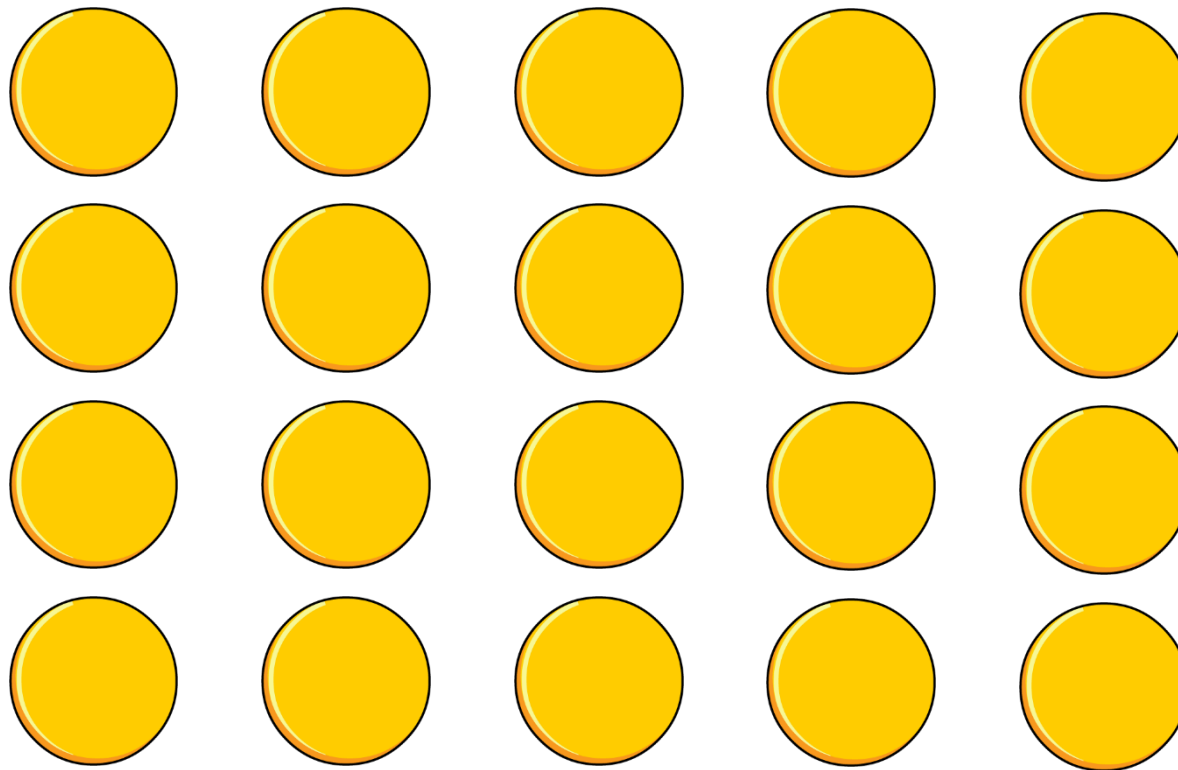


Multiplication is the inverse of division



$20 \div 5 = 4$ can be worked out because $5 \times 4 = 20$

Using pictorial representations (such as arrays) is useful here for children to see the link between multiplication and division.

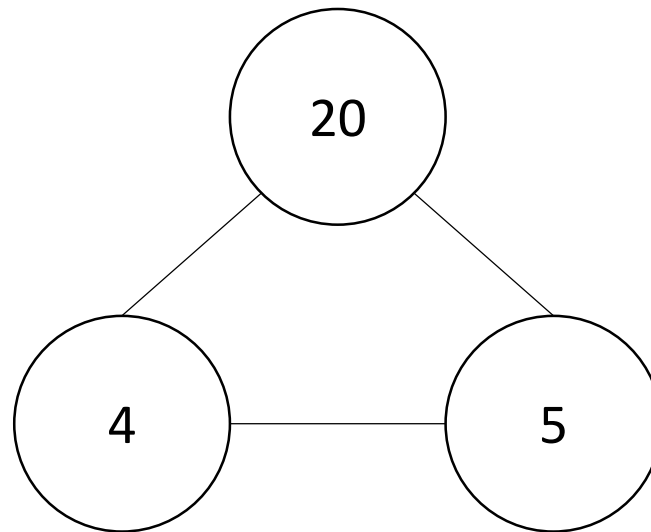


Number families



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

Due to their commutative understanding, children should also be able to see whole number families. For many children this will need to be pointed out and discussed.

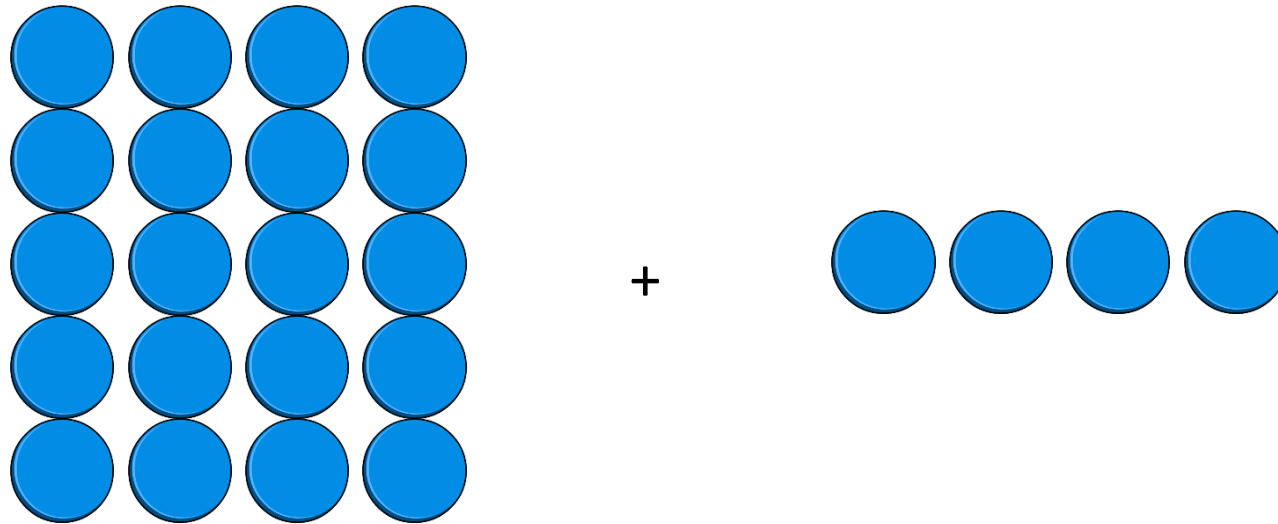


Using known facts



$4 \times 6 = ?$
I know $4 \times 5 = 20$
Therefore, $20 + 4 = 24$

By using known facts from 'easier' times tables, children should be able to find answers with increasing speed.



How We teach Times Tables At School



- We practice with arrays
- We use counting sticks
- We chant them
- We play times table games
- We do weekly practise
- We use **My Maths** (which all the children can access at home using the school log in)
- We use Times Table Rockstars
- The Children still need to do more at home



Future Benefits to Knowing X Tables Well



Long Division and Long Multiplication much easier.

Fraction simplification is much easier

Finding Percentages

Finding Area

Calculating Formulae

Even working out Analogue time using 5 times table
And many more.....

Long multiplication
24 × 16 becomes

$$\begin{array}{r} 24 \\ \times 16 \\ \hline 144 \\ 240 \\ \hline 384 \end{array}$$

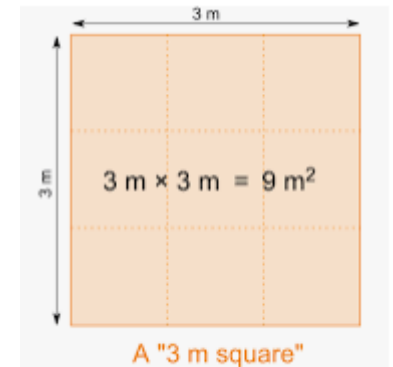
Answer: 384

$$\frac{15}{18} = \frac{\quad}{\quad}$$

$$\frac{42}{54} = \frac{\quad}{\quad}$$

Factor and Solve

$$x^2 + 3x + 2 = 0$$



Fun Ways To Get Your Child Learning Tables



Hit the Button (online) - <https://www.topmarks.co.uk/maths-games/hit-the-button>

Catch! – children throw a ball to one another and ask a multiplication question as they throw it e.g. call someone's name then say $3 \times 7 =$ the person whose name was called has to answer the question correctly. If they get it right, they continue the game and call someone else's name, ask a question and throw the ball.

Beat the Teacher/Beat my adult – who can answer more questions in 1 min/30 seconds – keep a tally so you know whether students or the teacher is winning.

Bingo! – children write down 3 or 4 multiples from a given times table e.g. for the 9 times table they might write down 81, 27 and 36 (don't write too many – small focus e.g. on one or two times tables) teacher or another student calls out the times table question e.g. 3×9 and if children have 27, they cross it out. You could also do this in reverse, write down the question and teachers call out the multiples.

Throw the Dice – children work in pairs to throw two dice and call out the answer to the multiplication question shown – keep a tally as to who has answered more questions correctly (play for max 2/3 mins)

Kinaesthetic tables – get children jumping, running (relay) or moving in any way they like to recite their tables (including the question e.g. 9×6 is 54)

The Disappearing Man – draw a stick person on the board and write a times table inside. Children come to the board and give a fact based on the times table e.g. if 12 is written inside they could say $4 \times 12 = 48$ this means they can rub out a limb/part of the stick man. If children get a question wrong, the teacher adds a limb/part to their stick man. The children have to rub out their stick man before the teacher completes theirs.



Why do Times Tables matter?

1. Times tables are fundamental to many maths topics:

- Equivalent Fractions, Addition and Subtraction of Fractions
- Multiplication and Division of Fractions
- Short multiplication and long multiplication
- Short division and long division method

Times Tables are central to [KS2 Maths](#) and need to be embedded by Year 4 in order that pupils can then start practicing for the next two years.

These topics above require speed and instant recall of times tables. This continues through to secondary school where the use of times tables is essential.

2. Freeing up working memory allows pupils to develop their reasoning skills



There are certain mental maths facts and operations children need to be able to carry out quickly and with a degree of automaticity in order to free up their working memory for newer, more challenging tasks at hand.

If we can ensure the transition of times tables facts to children's long term memory and times tables can become an instantly recallable fact the working memory can be freed up for reasoning.

3. Multiplication and division feature very highly in the KS2 SATs reasoning papers



Many of the end of Yr6 Maths reasoning questions in the KS2 SATs necessitate the use of multiplication facts and related division facts by the children in order for them to simplify complex questions.

8

In this sequence, the rule to get the next number is

Multiply by 2, and then add 3

Write the missing numbers.

<input type="text"/>	25	53	<input type="text"/>
----------------------	----	----	----------------------

1 mark

1 mark

Question 8 in 2018 Maths SATs Reasoning paper 2