

Times Table Guidance

Gaining instant recall of multiplication and division facts makes a big difference to a child's ability to learning new concepts in maths. We therefore practise them regularly in school. This booklet contains helpful hints, a section which looks at patterns, games and useful websites for how to support your child with learning their times tables at home. These activities will link with learning that they have done at school.

1. **Learn a little at a time.** If you are starting a new times table, don't try and master it all over night. Start with learning a few and build up from there. For example 2×1 , 2×2 and 2×3 and then build up from there.
2. **Try different strategies.** All children learn in different ways, so what worked for one sibling may not work for another child.
3. **Constant revision** of all the tables is important, as they are easy to forget when you move onto a new set.
4. **Demonstrate** using arrays (details further down) or concrete object so that children can see, for example, 3 lots of 4 as 3 rows of 4 buttons.
5. **Use real life situations** to develop understanding of times tables, for example: 'If you save 3p every day, how much do you think you would have saved in a week?'
6. There is no right way to learn times tables, and it helps to know lots of tricks, cheats and links between times table facts. For example if you know 3×4 you can double your answer and you will know 6×4 . If you triple 3×4 , then you know 9×4 . The next few pages will help you to identify some ways of making the times tables more fun and useful than just rote learning.

Helpful Hints

It's just a quick way of doing a LONG addition sum:

It is very important that the children understand how the tables are compiled so that they can start to find their own tricks for speeding up:

$$1 \times 5 = 5$$

This means there is 1 'lot of' 5

$$2 \times 5 = 10$$

This means that there are 2
'lots of 5' i.e. 5 plus another 5
($5 + 5 = 10$)

$$3 \times 5 = 15$$

3 lots of 5
 $5 + 5 + 5 = 15$ etc.

This knowledge is especially helpful for the higher number tables.

If a child, does not know what 7×7 is they do not have to start right at the very beginning of the 7 x table but can leap in half way:

$$5 \times 7 = 7 \times 5 = 35$$

$$6 \times 7 = 35 + 7 \text{ (we now have 6 lots of 7)} = 42$$

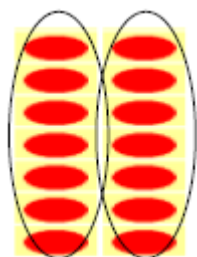
$$7 \times 7 = 42 + 7 \text{ (7 lots of 7)} = 49$$

Once they have learnt that they can start from 5 x the number to find higher multiples, they will be able to solve multiplication problems much more quickly.

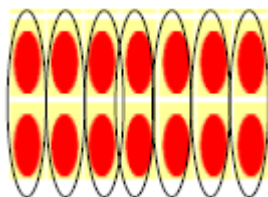
Learn 1 get 1 free!

Multiplication is perfect for switchers! We call this the commutative law. For example 7×2 gives the same result as 2×7 .

Knowing this means children reduce the number of times table facts they need to learn, by half



2 lots of 7



7 lots of 2

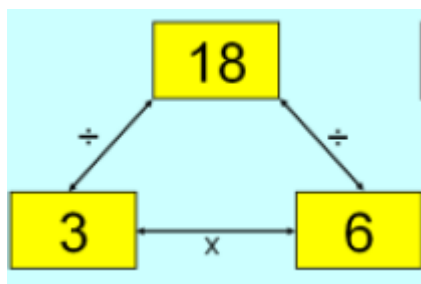


This is another good time to get out the sweets! Large bars of chocolate are ordered into these rows and columns, or you could lay out Smarties into different arrays.

Four facts

Children learn the relationship between multiplication and division. Arrays are a great visual way of showing this and they will be familiar with this from school.

They should learn that $6 \times 3 = 18$, $3 \times 6 = 18$, $18 \div 3 = 6$ and $18 \div 6 = 3$.



Use mnemonics to aid the memory

I ate and ate `till I was sick on the floor: **8 times 8 is 64!**

Wakey, wakey, rise and shine: **seven 7s are 49!**

7×7 is like a rhyme, it all adds up to 49.

Odd and Even Numbers

The following rules always apply:

$$E \times E = E$$
$$2 \times 6 = 12$$

$$E \times O = E$$
$$4 \times 5 = 20$$

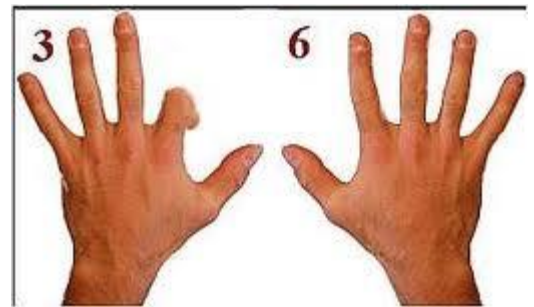
$$O \times E = E$$
$$9 \times 2 = 18$$

$$O \times O = O$$
$$7 \times 3 = 21$$

Therefore, the only time you get an odd answer is when two odd numbers are multiplied together.

Using fingers to calculate the nine times tables:

- 1) Lay both hands flat, palms down, on the table.
- 2) Number the fingers, from left to right, 1 - 10.
- 3) If you want 4×9 , wiggle the fourth finger and then curl it under.
- 4) On the left of this finger there are 3 fingers (3 TENS).
- 5) On the right of this finger there are 6 fingers (6 UNITS)
- 6) $9 \times 4 = 36$



<https://www.youtube.com/watch?v=xBTGKiVgWcA> This video demonstrates the trick.

Speed writing:

How quickly can you write all the facts in the times table of choice? Can you beat your time? Race your parents / older siblings!

Look for number patterns in the tables

X2

After 2, 4, 6, 8, 10, the pattern is repeated in the last digit, like: 12, 14, 16, 18, 20, 22, 24.

These answers will always be even because 2 is an even number.

Also look at how $\times 2$ is doubling and $\div 2$ is halving

X3

The numbers follow the pattern of: Odd, Even, Odd, Even, like: 3, 6, 9, 12, 15.

X4

All of these are double the two times table:
2, 4, 6, 8, 10 (2 x table)
4, 8, 12, 16, 20 (4x table)

X5

Any odd number times 5, ends in a 5. Any even number times 5 ends in a 0:

$$\begin{array}{ll} 1 \times 5 = 5 & 2 \times 5 = 10 \\ 3 \times 5 = 15 & 4 \times 5 = 20 \end{array}$$

When multiplying 5 by an even number, the digit in the tens column is half the even number. For example:

$$\begin{array}{ll} 8 \times 5 = 40 & 4 \text{ is half of } 8 \\ 12 \times 5 = 60 & 6 \text{ is half of } 12 \end{array}$$

X6

These answers are just double those in the 3x table: 3, 6, 9, 12, 15, 18, 21 (3x table)
6, 12, 18, 24, 30, 36, 42 (6x table)

X8

These answers are all double the 4x table: 4, 8, 12, 16, 20 (4x table)
8, 16, 24, 32, 40 (8x table)

X9

All of the digits add up to 9. This even works for really high multiples of 9, but you need to keep going until there is only one digit:

$$9 \times 4 = 36 \quad (3 + 6 = 9)$$

$$9 \times 101 = 909 \quad (9 + 0 + 9 = 18, 1 + 8 = 9)$$

X10

All numbers end in a zero! (Please note we are not 'adding a zero'. What is actually happening is that the digits which are being multiplied move one column to the left, to make them ten times bigger – they are 'held' in that position by putting a zero into the empty column).

H	T	U
		9
	9	0

This column means that the number is ten times bigger than it was in the units column.

A zero has to go in here to keep the digit in the correct column.

X11

Both digits are the same (for answers up to 100).

You can also think of it as 10x tables, plus one more 'lot' of the number that you are multiplying by 11:

9×11 is the same as $9 \times 10 + 9$.

X12

If you've learnt all the other tables - there actually should only be one thing to learn by this stage:
 $12 \times 12 = 144$

GAMES!

Playing games is always a really effective way of learning. These are some examples that can be adapted for different times tables. They can also be adapted for learning division facts.

Buy a set of blank business cards or use cut up pieces of paper. Snip one corner of each card so that you can tell which way up they should be when the cards are face down.

Write a variety of times tables questions and answers the cards.

Pelmanism (or Pairs):

- 1) Shuffle the cards and arrange them in a neat order on the table, face down.
- 2) The players take it in turn to reverse any two cards; the cards must be left on the table face upwards so that everybody gets a good chance to look at them.
- 3) If the two cards are equivalent the player gets to keep the pair and has another go.
- 4) If the two cards are not a pair they are turned over once more and left on the table.
- 5) The game continues until all the cards have been claimed.
- 6) You could write 'questions' on half of the cards and 'answers' on the other half.

Snap

Half of the cards should be the 'question' (2×5) and the other half of the cards should contain the answer (10).

- 1) Shuffle the cards and divide them equally between two players.
- 2) The players keep their cards in a pile, face down.
- 3) One person turns over a card and then the other person turns over a card next to it so the two cards are close to each other.
- 4) If the cards are equivalent, the last person to have turned over a card keeps all the cards in the two upturned piles. (it is better not to have a 'speed' element of competition in the early stages of learning, as they may need thinking time).
- 5) The winner of the round then starts the next round



Bingo

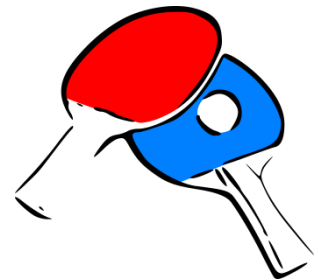
- 1) Each player selects five 'answers' from one of the times tables.
- 2) Roll two dice, add the dots together.
- 3) Multiply that total by whichever table it is you are doing e.g. you are learning the 6 x table five and two is rolled on the dice. Five and two is 7 so $7 \times 6 = 42$
- 4) Any player who has 42 on their 'Bingo card' can cross it off.
- 5) The next player rolls the dice.

Fishy Fingers

- 1) Two players stand facing each other with their hands behind their backs.
- 2) They say 'Fishy-fishy fingers' and then present their hands with numbers shown by raised fingers (like in Rock, Paper, Scissors).
- 3) The players then need to multiply the number on their hands with their partner's number.
- 4) The first to say the answer wins a point and play continues.

Times Tables Table Tennis

This is a good activity when first introducing a new times table so that they become confident with which numbers are multiples of the times table they are learning prior to learning the number sentences.



- 1) Each player holds an imaginary table tennis bat and one player starts with the first number in the times tables that they are learning (e.g. 3)
- 2) Players try to build a rally by 'batting' the next number in that times table back to their partner (e.g. 6).
- 3) The aim is to say the times tables as quickly as possible in order.

Fizz Buzz:

(if you've got older siblings to join in – this works well)

Count around in a group (this still works with 2 or 3 people) with each person taking it in turns to say the next number. Count again, but instead of saying the number the child has to say fizz instead of the multiples of 5. For example 1, 2, 3, 4 fizz, 6, 7, 8, 9 fizz.

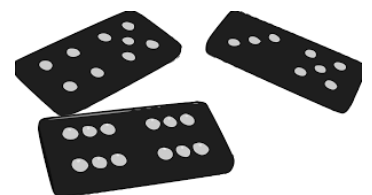
Repeat this time saying buzz for multiples of 3. A challenge is to say fizz for the multiples of 5 and buzz for the multiples of 3.

This game can be adapted for other multiples. This game helps children rehearse the pattern of multiples. What do you say instead of 15? (fizz buzz)

Dominoes

Place dominoes face down on the table. Player one takes a domino. Multiply the two numbers together and say the answer. If they are correct they can keep the domino.

Continue the game with each player doing the same. The winner is whoever has the most dominoes at the end.



Useful Website:

Lots of websites have fun and motivating games that can be played to practice times tables. These can also help develop important instant recall of multiplication and division facts.

Woodlands maths zone

<http://www.primaryhomeworkhelp.co.uk/maths/timestable/interactive.htm>

Maths games

<http://www.maths-games.org/times-tables-games.html>

Top marks

<https://www.topmarks.co.uk/maths-games/5-7-years/times-tables>

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

Timestables.co.uk

<https://www.timestables.co.uk/>

Crickweb

<http://www.crickweb.co.uk/ks2numeracy-multiplication.html>

Also the My Maths website which the children have log on details for also has times table games.

Praise for progress:

As the tables are learned, they can be coloured or highlighted both horizontally and vertically. You can use this opportunity again to emphasise that $3 \times 6 = 6 \times 3$, so therefore as well as learning the entire 3 x table, part of the 6 x table has also been learned so this can be coloured in as well! Therefore, by the time all the tables up to and including the 5x have been learnt, there is actually only one quarter of this grid left to commit to memory.

12 x 12 multiplication grid

	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144