A Guide to Learning the Times Tables

Times Tables Guidelines

As a general rule the following programme of learning tables should apply to most children:

Year 2	2, 5, 10 and counting in 3s
Year 3	3, 4, 6, 8
Year 4	7, 9, 11, 12
Year 5	Apply times tables facts to multiply by a decimal, e.g. 6 x 0.7, find square and cube numbers within the times tables
Year 6	Apply times tables facts to multiply two decimal numbers, e.g. 0.6 x 0.7 and reason to find square and cube numbers beyond the times tables.

Ways to help your child to learn the Tables

All children learn in different ways. Therefore some of the tips below will help your child more than others. Pick and choose from this selection: what works for one child will not necessarily work for a sibling. (Do not use the long words with young children).

Learn only a little at a time. If you are starting on a new table don't attempt to master the whole thing at once; start with 1 x 6, 2 x 6 on one day, then add further numbers in the sequence when they are ready for it.

Constant revision of all of the tables is important; not just those learned recently. ***Multiplication tables are just a quick way of doing a very long addition sum.***

It is very important that the children understand how the tables are compiled: this will make their learning easier as then they will not be just learning `gobbledygook' by rote.

1 x 5 = 5
This means there is 1 ‘lot of’ 5

2 x 5 = 10
This means that there are 2 ‘lots of 5’ i.e. 5 plus another 5 (5 + 5 = 10)

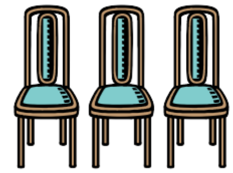
3 x 5 = 15
3 lots of 5
5 + 5 + 5 = 15 etc.

This knowledge is especially helpful for the higher number tables.
If a child, does not know what 7 x 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 x 7 = 7 x 5 =35
6 x 7 = 35 + 7 (we now have 6 lots of 7) = 42
7 x 7 = 42 + 7 (7 lots of 7) = 49

It may help to demonstrate this point using concrete apparatus such as matchsticks or even Smarties! A little bribery goes a very long way and the `lesson' is more likely to be remembered!

Change this into real life situations:



- "If there are four legs on every chair, how many legs are there altogether on all of the chairs around this table?"

- "If we order three pints of milk from the milkman every day, how much milk do we drink in a week?

Odd and Even Numbers

The following rules always apply:

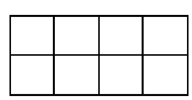
2 x 4 = 8	2 x 3 = 6	3 x 2 = 6	3 x 5 =
15 E X E = E	E x O = E	O x E = E	O x O =
O			

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

Multiplication is Commutative

2 x 4 = 4 x 2

This can be demonstrated very easily by drawing rectangle 4 squares by 2:



Here you have 2 rows of 4 squares but it is exactly the same if you turn it around so that there are 4 rows of 2 squares.

Again use the Smarties, set out in 4 rows of 2 or 2 rows of 4, you still have the same number of Smarties altogether.

Use mnemonics to aid the memory

I ate and ate `till I was sick on the floor: 8 eights are 64!

Wakey, wakey, rise and shine Seven 7's are 49

Make up some of your own.
7 x 8 = 56 56 = 7 x 8

Look for number patterns in the tables

Ox: Think of `empty pockets'. Ask your child how many pockets he has in the clothes he is wearing at the moment. If there are three pockets, all with nothing in them, then he has nothing. It doesn't matter how many pockets he has, if they are all empty, there will be nothing. 3 x 0 = 0 etc.

2x: 2 4 6 8 10
then the pattern is repeated with the last digit in each answer
12 14 16 18 20 22 24

3x:	3	6	9	12	15
	O	E	O	E	O

4x: All of these answers are double the answers in the 2x table

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

6x: These answers are just double those in the 3x table

8x: 8 16 24 32 40 48 56 64 72 80 88 96

9x: See below for 'Using Fingers' All of the answers add up to 9:

18	1 + 8 = 9
27	2 + 7 = 9
36	3 + 6 = 9 etc.

This even works with the really high multiples of 9:

43 x 9 = 432 4 + 3 + 2 = 9

10x: All numbers end in a zero! (Please note we are <u>not</u> `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: this can be demonstrated with digit
Cards which can be made from the blank business cards).

T	U
	8
8	8

H	T	U
	3	5
3	5	0

Now there isn't a digit in the UNITS column, so we have to put a zero in there.

11x: Both digits are the same (for answers < 100)

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

<u>Oral Work</u>

- Count forwards and backwards in 2s, 3s, 4s, etc.
- Put one more finger up every time you move onto the next number in the sequence if this will help the child to remember which number they are up to.
- Chant the tables in the old fashioned way (see the script for `making your own tape').
- Working on only one table at a time - dot about i.e. 3 x 5 = ?, 7 x 5 = ?
- Give them the answer, how many 5s make this?

Using fingers to calculate times tables

1. Label the fingers as follows:
   - Mark both thumbs with the number 6
   - Mark both index fingers with the number 7
   - Mark both middle fingers with the number 8
   - Mark both fourth fingers with the number 9
   - Mark both little fingers with the number 10

2. Hold the hands with the palms facing you, thumbs pointing upwards. The tips of the two fingers whose numbers are to be multiplied are brought together so that they are just touching (i.e. 8 x 7)

3. The two touching fingers and all the fingers above them are counted - in this case there are 5; 3 on one hand and two on the other. This gives you the total number of `TENS' in the answer (i.e. 5 TENS = 50)

4. Now there are some fingers left over, beneath the touching pair - two on one hand and three on the other. These two numbers are now multiplied together and the product, 6, is added to the TENS that have already been calculated 8 x 7 = 5 tens + 6 = 56

The 9 x Table

Lay both hands flat, palms down, on the table. Number the fingers, from left to right, 1 - 10.

If you want 3 x 9, wiggle the third finger and then curl it under.

On the left of this finger there are 2 fingers (2 TENS).

On the right of this finger there are 7 fingers (7 UNITS) 9 x 3 = 27

X	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	1	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	40	46	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	1	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

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 x 6 = 6 x 3 so therefore as well as learning all of the 3 x table, part of the 6 x table has also been leaned 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.

Home-made Mathematical Games

The following games can be adapted for the times tables and any other uses you can think of:

- Buy a set of blank business cards from any good stationer.
- 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 (just one thing on each card: For example on 8 different cards 1 may write 3 x5: 15: 4x5:20: 5x5:25: 6x5:etc

These can be then used to play:
- Snap
- Pairs/ Pelmanism
- Happy Families (but it isn't easy to see the cards when they are held in your hand)

Pelmanism

Shuffle the cards and arrange them in a neat order on the table, face down.
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.
If the two cards are equivalent the player gets to keep the pair and has another go. If the two cards are not a pair they are turned over once more and left on the table. The game continues until all the cards have been claimed.

If this game is used for learning the times tables write 'questions' on half of the cards and 'answers' on the other half.

Snap

Again, half of the cards should be the `question' (2 x 5) and the other half of the cards should contain the answer (10).
Shuffle the cards and divide them equally between two players. The players keep their cards in a pile, face down.
One person turns over a card, then the other person turns over a card next to it so the two cards are close to each other. If the cards are equivalent, the last person to have tamed over a card keeps all the cards in the two upturned piles. He then leads off on the next round.

Bingo

Each player selects five `answers' from one of the times tables. Roll two die, add the dots together. 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; 7 x 6 = 42

Any player who has 42 on their `Bingo card' can cross it off. The next player rolls the dice.