Learning together for life

How to support your child with learning the times tables and division facts

For children, learning multiplication and division facts is an important step to becoming a confident mathematician. Some children are able to memorise facts quickly whilst others may need more practice, and they may need different strategies to help them to develop quick recall. In school, right from Reception, children begin to recognise patterns with numbers. In Year 1, they start to count in twos, fives and tens, and then by Year 2, they apply this knowledge to learning the multiplication and corresponding division facts. By the end of Year 4, all children should be able to recall all the multiplication and division facts (up to 12 X 12).

Why is this so important? For children to progress through mental and written methods for multiplication and division successfully, they need to be able to recall the times table facts quickly: this will ensure more accuracy with calculations and methods to check answers. Fractions will become easier for children as well: being able to find a fraction of an amount, relies on the ability to divide numbers. Being able to spot relationships between numbers, e.g. the connection between 32 and 8 (as opposed to counting up in 4s when told to use the four times table) is a great advantage in maths. In our experience this breaks down barriers in maths.

This booklet aims to provide parents with some alternative ways of helping children to learn the times tables, rather than relying on rote learning.

There are many apps and online games to support learning the times tables, so if you find any of benefit to your child that are not mentioned in this booklet, then please let us know!

Steps to learn by rote…

- Children begin by counting up e.g. chanting 3, 6, 9, 12… and then backwards e.g. 30, 27, 24…
- Once familiar with the numbers in the sequence, add in the 'one times three is three, two times three is six…' and as a visual, use the fingers or a number line.
- Repeat but working backwards.
- Many children find one, two, three, four, five and ten lots of a number easier, so begin testing these in a random order e.g. what is 3 x 3? 12 is the answer, what's the question?
- Often it is six, seven, eight and nine lots of the number that are trickier to remember. So practise these repetitively until confident e.g. 6 x 3? 8 x 3? 7 x 3? 9 x3?
- Then add in the previously learnt table facts and practise in a random order.

Vocabulary linked to multiplication

times multiply

lots of groups of

double array product

repeated addition

3 times greater…

Vocabulary linked to division

divide share

group halve fractions

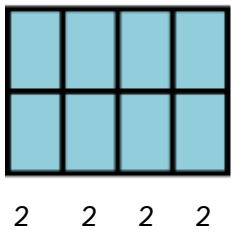
factors

repeated subtraction

10 times smaller

Helping to children to understand what times tables are…

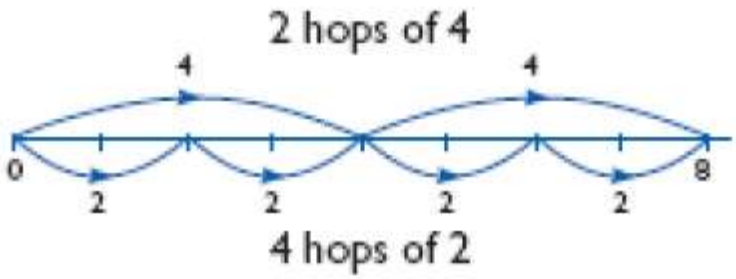
Using an array (for example an egg box or ice cube tray):



This array shows two rows of 4; children can add 4 +4. It also shows four columns of 2 so 2+2+2+2. This helps children to understand that 4 x 2 gives the same answer as 2 x 4.

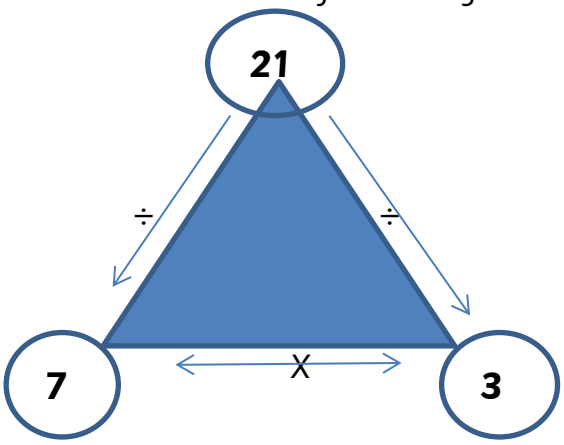
We can also see that 8÷4= 2 and 8÷2=4

Some children benefit from using a number line when learning times tables or division facts:



Recognising the relationship between division and multiplying

Create number fact triangles:



Ask your child to use these numbers to create a times table fact (7 x 3 = 21 or 3 x 7= 21).

Repeat with a division facts (21 ÷ 3= 7 or 21 ÷ 7= 3)

Or cover up a number and ask what is missing in the triangle. This helps children to find factors and multiples of numbers.

Card games

- Make cards with questions on one side, and the answers on the reverse. Turn some cards question side up; others answer side up. Children to either give the answer to the questions, or the question for the answers shown.
- Alternatively, make two sets of cards (questions and answers). Play snap where children have to match questions to answer.
- Or, use a normal deck of cards. If learning the 4s for example, turn the cards over one by one, children use the number on the card to multiply by four. This can help with speed! Keep a pile of correct/incorrect and come back to the incorrect pile.

A version of 'Rock, paper, scissors'

1. Count to three aloud
2. Both players reveal a number using fingers (e.g. player one shows 5, player two shows 4)
3. First player to multiply the two numbers together and calls out the correct answer wins a point!

If new to learning multiplication facts, the adult can always show the number of the target times tables e.g. 5, and child varies their number to concentrate on learning the fives times tables.

Using multiplication grids:

	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	56	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

- Cover up different numbers: children to work out what is missing.
- As children are learning the times tables, remind them that you can reverse the numbers e.g. if I know 8X4, then I know 4X8 (this is called the commutative property of multiplication).
- As they progress through these, highlight on the grid what they have learnt so that when they face the trickier ones to learn, (e.g. 7s), it is not so daunting: they already know 2, 3, 4, 5, 6 and 10 times 7!

Speed grids: some children like to be timed to fill in blank grids. They may enjoy beating their times as they become more confident.

A full grid to fill in can be daunting, so you can also create mini girds:

X	2	5	10
6			
4			
2			

Or

X	?	5	2
6	24		
?		15	6
2	8		

Sing along...

Many children enjoy learning the times table facts through singing (and a bit of air guitar!). Search the internet or YouTube for examples, or try the BBC website: https://www.bbc.co.uk/sport/supermovers/42612499

Times tables tricks and methods to help learn facts…

- X2: double it!
- X3: double then add another (e.g. 3X4 double 4 then add 4)
- X4: double and double again (we use our 2s to help us)
- X5: half of X10 and multiples of 5 end in 0 or 5
- X6: double X3 (e.g. 7 X 6: 7 X 3= 21, so double 21 is 42) or find X5 and add another (7 X 6: 7 X 5=35 then add an extra 7= 42)
- X7: remind children they can swap the numbers to help
- X8: double it, double again, and double again (or just double the 4s)
- X9: multiply by 10 then adjust (e.g. 9 X 6: 10 X 6= 60 60-6= 54) or the finger tick!

Finger trick for X9

1. Show both hands in front of you
2. For 7 X 9 bend seventh finger down
3. Count number of fingers/thumb to the left: these are the number of tens
4. Count the number of fingers/thumb to the right: these are the number of ones (units) so six tens and three ones: 63

Patterns with numbers:

Encourage your child to look at patterns for example, recognising that when you multiply a number by an even number, the answer will be even.

When multiplying an even number by 6, the number appears in the answer: **4** X 6= 2**4**

8 X 6= 4**8**

Websites:

http://www.topmarks.co.uk/maths-games/hit-the-button Hit the Button game
http://www.bbc.co.uk/skillswise/game/ma13tabl-game-tables-grid-find
http://www.crickweb.co.uk/ks2numeracy-multiplication.html
http://www.familylearning.org.uk/multiplication_games.html Further links to games on this website.
https://www.transum.org/Tables/Times_Tables.asp
https://www.themathsfactor.com/times-tables-check/&/

Apps:

Wipe-out wall for multiplication and division
Times Tables Game by WissApp (free)
Times Tables: ten minutes a day by Dorling Kindersley (free)
Hit the button
TTRS (we have a school subscription)