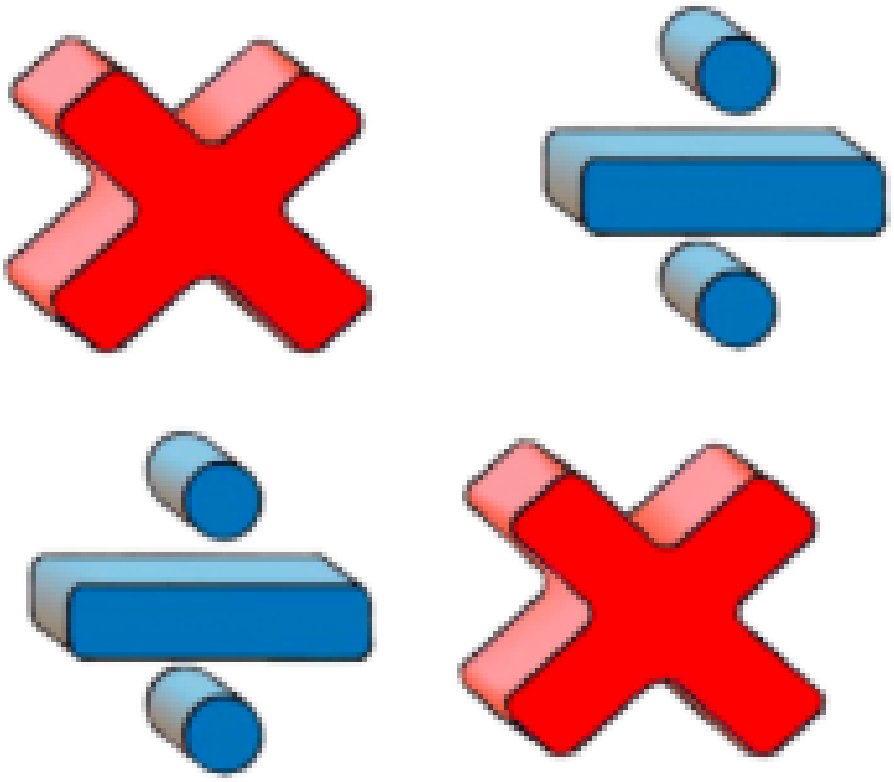
A Guide to Supporting your Child with Learning Multiplication Tables and Division Facts.



How to help your child achieve their best in mathematics.

The Importance of Multiplication Tables and Division Knowledge

Knowing multiplication table and division facts is crucially important to your child's progression in many areas of their mathematical understanding. Without a thorough understanding of these facts, children often find it difficult to grasp new concepts which involve fractions, percentages and decimals, as well as multiplication and division calculations involving large numbers. Many mental maths activities and strategies require quick recall of both multiplication and division facts.

Children secure in their uses are more able to get to grips with trickier tasks straight away and are far more successful.

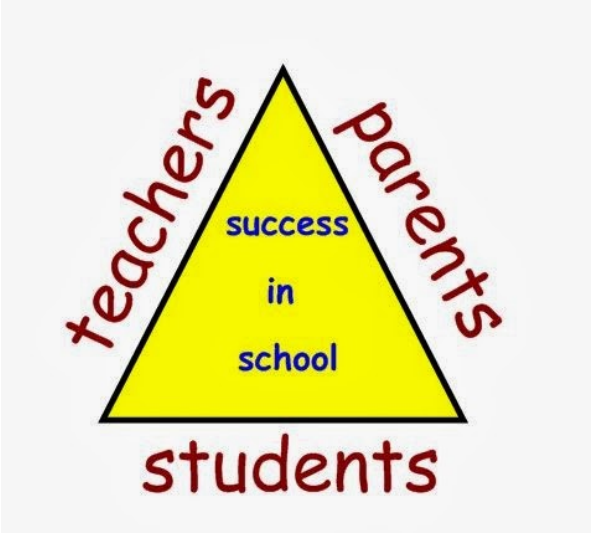
What do we mean by 'knowing' multiplication table and division facts?

A child who confidently knows these facts will be able to recall any of the multiples of a multiplication table, out of order, within 3 seconds. They will also be able to give the corresponding division facts.

4 x 6 = 24; 6 x 4 = 24; 24 ÷ 6 = 4; 24 ÷ 4 = 6.

How is learning multiplication and division facts best achieved?

Learning these facts is best done in collaboration with school, parents and children. In school, we regularly spend time practising and learning multiplication and division tables, but a child is much more successful if they also practise them independently and alongside parents.



A successful learner works collaboratively.

Multiplication and Division Tables Expectations for your Child

The table below indicates which facts your child should know by the end of each academic year:

By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
2, 5 and 10 multiplication table and division facts	2, 3, 4, 5, 8 and 10 multiplication table and division facts	All multiplication table and division facts up to 12 x 12	As Year 4, including related questions - *E.g. 1/9 of 63= 7* Knowledge of the following: all prime numbers up to 19; all square numbers up to 144.	As Year 5, including: a knowledge of all prime numbers up to 100; the ability to identify common factors and multiples - *E.g. common factors of 12 and 18 are: 1, 2, 3 and 6.*

Multiplication table facts are not necessarily taught in order from 1 -12. For instance, the 8s are taught after the 4s, and before the 7s, since doubling multiples of four gives the multiples of 8. Therefore, children are able to build on their existing knowledge.

Key Vocabulary to Learn and Use

Here are some useful words that should be used whilst learning and applying multiplication and division facts:

Multiplication

multiply
multiplication
prime product lots of
factor array double
sets of row column
repeated addition

Division

Divide split halve
groups of sets of
remainder
left over shared equally
shared divided by
divided into

Here are some of the trickier words defined:

Factor: One number is a factor of another if it divides or 'goes into' it exactly, with no remainder. E.g. 6 is a factor of 30 because it goes into 30 five times but it is not a factor of 33 because after dividing, there is a remainder of 3.

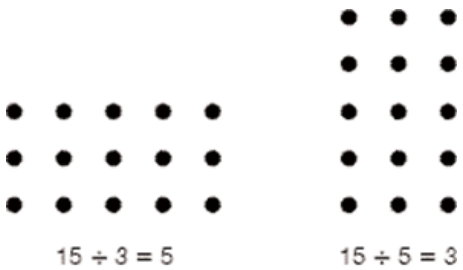
Groups of / lots of/ sets of: 15 divided into sets of 3 is 5 (15 ÷ 3 = 5); 15 divided into groups of 5 is 3 (15 ÷ 5 = 3); 3 lots of 5 is 15 (3 x 5 = 15).

Multiple: A number that may be divided by another a certain number of times without a remainder. E.g. 20 is a multiple of 2, 4, 5 and 10. The multiples of 5 are 5, 10, 15, 20 etc.

Product: A product is the answer you get when you multiply two or more numbers together. E.g. the product of 3 and 4 is 12 (3 x 4 = 12) .

Prime: A prime number will only divide equally by itself and 1. Eg. 7, 11

Array: An array is the visual representation of a multiplication or division:



How to support your child in learning their multiplication tables and division facts:

The key to learning multiplication and division tables is frequent repetition and regular practice. 5 to 10 minutes every day is ideal and more effective than an hour a week. A poster on a wall that is not used simply becomes wallpaper and a child will quickly stop noticing it.

Here are some ideas to help your child memorise multiplication and division facts:

1. Chanting

Repeatedly reading a multiplication or division table out loud will help your child become familiar with the facts. Try and keep a rhythm, changing vocabulary regularly. Clapping or marching may help keep the rhythm going.

2. Creative methods

If your child enjoys drawing, get them to create their own colourful posters to put up on their wall detailing the multiplication and division table they are learning.

Paper plates are made with numerous perforations around their edge, making them ideal for learning division. Use them to make flowers divided into four, five, six or more petals. To get started, have your child count the number of perforations on the plate, divide by the number of petals the flower will have (remember, you may have to decide what to do with the remainder) and then, cut and decorate.

3. Flash cards

Make a set of flash cards by putting a question on one side of the card

(30 ÷ 5) and the answer on the other (6). Go through the cards reading the question and turning them over to see the answer. Try to say the answer before you turn over.

4. Testing and timing

Make this fun. Once they are confident with a multiplication or division table, ask questions out of order and see how many they get right in a particular time.

5. Multiplication table games

Bingo is a great way of learning table and division facts as a family.

Rolling dice and multiplying the numbers together is a fun way to compete against each other to see who can get the answer first.

For division: each player chooses and writes down five of the following numbers: 5, 6, 8, 9, 12, 15, 20, 30, 40, 50. Take it in turns to roll a dice and if the number you roll is a factor of one of the numbers, cross it out. E.g. if 4 is rolled, it goes into 8 so cross out the 8. If a 1 is rolled, miss a go; if a 6 is rolled, you get an extra turn. The winner crosses all of their numbers out first.

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

Count around in a group 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, for example, multiples of 5. **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 3 and buzz for the multiples of 5. This game can be adapted for other multiples. This game helps children rehearse the pattern of multiples. What do you say instead of 15?

6. Rhymes and patterns

Create rhymes to help children remember facts. 8 x 8 = 64 (I ate and I ate and was sick on the floor, 8 x 8 is 64) 8 x 7 = 56 (56 = 7 x 8) (the numbers in this multiplication table fact are in order 5, 6, 7, 8!)

7. Using a multiplication square

This is really useful for establishing the link between multiplication and division facts. When children become more confident, they can complete a blank or partially completed square. Can they beat their previous score and time?

8. On line resources

In addition to Times Table Rockstar that all pupils have log in details for, there are also many free multiplication and division games available on line. They can be found through either search engines or on your child's home learning page of the school website. Here are a few excellent sites to get you started:

www.multiplication.com
www.coolmath-games.com
www.topmarks.co.uk
www.mathplayground.com

9. Quick questions anywhere!

A few questions here and there is much better than hundreds in one go:

- While shopping and looking at multipacks
- On the way to school
- In advert breaks
- Whilst getting dressed
- A few before bed

There are apps for smartphones and tablets. Many of these are free to download: search in the App store or Google. Some of the simpler games are often the best such as: TTXpress. I -books can also be helpful, such as Carol Vorderman's *Maths Made Easy Multiplication Tables*.

Songs can also be downloaded at a cost. For example, *Multiplication Tables Challenge* by Kidzone which is through Amazon mp3. There are also many Multiplication songs free on Youtube.

Fingers can be used to work out the nine times table up to 10 x 9. The first finger is put down for 1 x 9 and the remaining fingers show 9 units. Then, the second finger is put down for 2 x 9 and the remaining fingers show 1 ten (to the left) and 8 units (to the right) which equals 18 and so on.

Multiplication square

X	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