Multiplication – in steps

1. The simplest way to begin teaching multiplication is to teach the concept in terms of its **relation to addition**. For example: **2 x 2** is the same as **2 + 2**
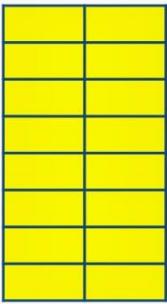
   or

   3   x 4 is the same as **4 + 4 + 4**

2. Two numbers can be multiplied in any order, and the product (answer) will be the same. **(commutative rule)**

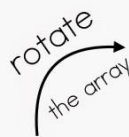For example, multiplying **8 x 2** will give you the same answer as multiplying **2 x 8.**
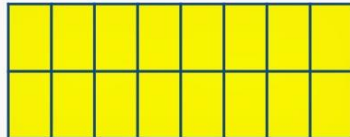
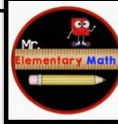3. Memorisation. At this stage, the children should begin **memorising their multiplication tables**.

Children will not always understand why they need to learn multiplication facts off by heart. Try to give them examples of how multiplication facts can be used in everyday situations ie, 5 bags of potatoes hold 10 potatoes each. Will I have enough to feed 60 people if they get 1 potato each?

- **Encourage your child** and set time for them to practice tables verbally or in writing.
- **Introduce new multiplication facts-   one by one**
- **Give your child time to practise** the multiplication facts.

To help with memorisation, keep visual materials such as multiplication tables and multiplication squares close by. No matter how many times you cover multiplication, it's always a good idea to have a physical copy of the table available when doing homework or work at home.

Division - in steps

Our biggest fear as parents, when it comes to helping children with maths at home, is that we'll teach them the wrong way and confuse them further!

When you start teaching division to your child you should introduce division as being a sharing operation where objects are <u>**shared**</u> (or divided) into a number of groups of equal number.

In P4, **using real-life scenarios to help your child understand the concept of dividing is really useful**. So if there are 12 sweets to be divided between 2 children have them work out beforehand how many each should get, before physically sharing out the sweets in a 'one for you, one for me' way. By P4, most children should be pretty confident in halving most even numbers up to 40.

They will probably also learn to divide by 2, 5 and 10. These are the multiplication tables covered in P3, so it makes sense to transfer this knowledge into division.

For division, use anything practical – lego, cubes, counters, sweets etc to help teach division.

Language: 8 divided by 4 = 2

Ideas to help:

- Put this sum into language that the children can visualise ie, I have 8 hats. I put them onto 4 shelves. How many are on each shelf?
- Drawing out circles will also help. For example, You have 12 sweets which you are going to share out between 3 friends. The child will draw 3 circles on their page and share out 12 counters into the 3 circles. Then write out the sum, 12 divided by 3 = 4
- Use real-life examples ie, give your child 20 pennies and explain that the pennies need to be divided equally between 5 children. Get them to draw five stick men on a piece of paper, then encourage them to share out the pennies, 'giving' one to each stick child, until there are none left.

When teaching division you should always show that division has an opposite. Division is about separating sets, while the opposite (multiplication) is about combining sets. Explore this relationship with your child as it will be important when recalling basic facts to solve division problems.

Discuss fact families (e.g. 5 x 3 =15, 3 x 5 = 15, 15 ÷ 3 = 5, 15 ÷ 5 = 3).

It can still be helpful for children to practise sharing actual objects out, but they should move on to **using the inverse operation** to help them with their mental maths. By learning division facts as they master each multiplication table they'll be able to use their knowledge of inverse operations at speed (so, for example, if someone asks them to divide 42 by 7, they'll remember that 7 x 6 = 42 and know the answer is 6). Children should keep practising their division facts for all of their times tables so that they know these off by heart.

REMAINDERS: In Year 4 children learn about remainders.

Able children will quickly master the idea of equal addition, so the challenge lies with understanding the idea of remainders. This is where the children will come across a sum where division "does not work."

- They have 10 cookies to share with 3 friends. This would allow them to give 3 cookies to each friend, leaving 1 extra cookie. This cookie is the remainder.

- *Becky has 60 rubbers which she needs to share between 28 friends at her party. How many rubbers does each child get? How many remaining?*
  One way of working this out would be to get 60 counters and divide them into 28 equal groups. This is worth doing once, just to make the concept really clear, but it will take a while and children may need to answer a question like this in a test where they will not have access to counters! One way of working out division questions, is by using the inverse operation, so thinking about what you could multiply 28 by to make 60. Demonstrate this logic to your child: they could try 28 x 3 which is 84, which is too high. But 28 x 2 would give 56, which is 4 below 60, so the answer to the story problem would be that each child at the party would get 2 rubbers with 4 left over.

Teach your child the symbol used for division problems. This seems simple, but it's an easy step to overlook. For example, 10 divided by 5 can be written like this: 10÷5.