Want to pass 44 club and move up to 55?

If yes, then this is for you!

Did you know?

If you've passed 33 club (hint: you have!) then you already know your 2,5,10,3 and 4 times tables -

BRAVO!!!

That means you know **46** facts out of a total of only **67** facts in the 99 club!

You can write this as a fraction: $\frac{46}{67}$

Another way of saying the same thing is that you already know nearly 70% of all 99 club facts!

Yet another way of saying the same thing is that you already know **more than** 

-of all times tables facts needed to get to 99 club!

That's WELL OVER HALF!

WELL DONE YOU!

In fact, there are only 21 more facts left until you are in the 99 club!!!

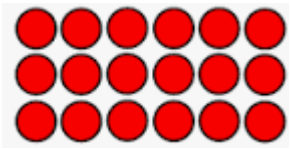
YOU CAN DO THIS !

But how can this possibly be when you've still got to learn the 6s, 7s, 8s, 9s, 11s and 12s? That's a lot of times tables still to learn surely?

Yes it is. But did you know that every time you learn a new times table, you are ALSO learning bits of the other times tables without even knowing it? For example, if you've learned **your 2s, 5s, 10s, 3s** and **4s** (hint - you have!) you

already know **2x6, 5x6, 10x6, 3x6** and **4x6**! That's ***loads*** of the 6 times table ***you already know*****!** We can thank something with a **big** name but a simple idea for this. It's called the (ready for the big name?) ***commutative law***. And now for the simple idea…

It just means that **3x6** is exactly the same as **6x3**. It's easy to see if you have 18 objects and lay them out like this:



There are **18** red dots.

We can 'see' this as

3 horizontal *(side to side)* rows of **6** (**3x6**) or…

6 vertical *(top to bottom)* columns of **3** (**6x3**).

But we haven't changed how many there are in total. It's always **18**!

OK, so now you know you've already done a lot of the hard work in reaching the 99 club, let's take the next step towards the ultimate goal of getting a 99 club medal!

EVERYTHING YOU NEED TO KNOW TO PASS THE 44 CLUB.

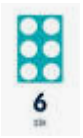
The 44 club now includes the 6 times table. But here's the great thing - ***you ALREADY know half of it!*** Here it is, with the ones you already know shown in red:

1x6=6
2x6=12
3x6=18
4x6=24
5x6=30
6x6=36
7x6=42
8x6=48
9x6=54
10x6=60
11x6=66
12x6=72

So, the 44 club has only **6**, yes **6** new facts in it! That's not too many at all is it? So you *can* just memorise the new black ones. Or better still, you can **investigate ways of working them out** – much better if you forget! Read on if you want to investigate ways of working them out….

Hmm…. Some of them look a bit tricky, don't they?

The first thing to notice is that **6 is an even number**, so no matter how many 6s you have, you will always end up with an **even number**. There are no odd multiples of 6! **All multiples of 6** (answers in the 6 times table) **are even** and end with 0,2,4,6 or 8. In fact the ones have a repeating pattern of 6,2,8,4,0. Check it out on the previous page!



This image shows **3 lots of 6**. The total number will be **even** (18).

FACT 1. Ok, so let's learn the **easiest** one first: **11x6=66**

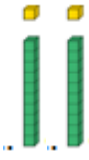
The 11 times table is pretty easy to learn *(up to 11 times 9)*.

That's because **11 lots of something** is **ten lots of that number** and **1 more of that number**. So 11x3, is ten 3s (**30**) and one more 3 (**3**). In other words, **33**! (You already knew that!)

Nice pattern, isn't it?

Linking it to our place value knowledge, we can also see that **11** is **1 ten** (green) and **1 one** (yellow).

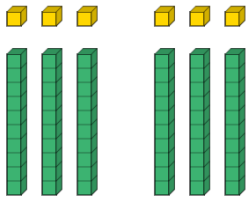
2 elevens are **22**, which is **2 tens** and **2 ones** and so on:



11x3=33 (3 tens, 3 ones)
11x4=44 (4 tens, 4 ones)
11x5=55 (5 tens, 5 ones)

So, **11x6=66** (6 tens, 6 ones)

Shown with the **green tens** and **yellow ones** below:



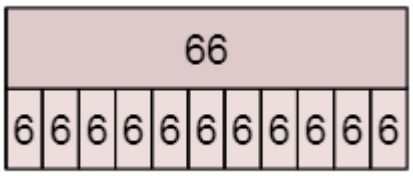
FACT 2 Once you know **11x6=66**, it's quite easy to work out fact 2: **12x6=36 (or 6x12=36)**

The 12 times table seems a little scary to learn, but it really isn't.

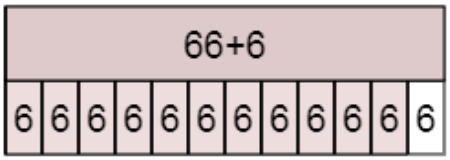
Let's look at 11x6 again: other ways of saying **11x6** are:

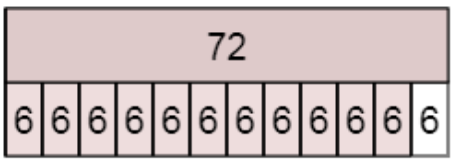
11 lots of 6 *or* ***11 groups of 6*** *or even* ***11 boxes of 6.***

In the bar model below, on the second row, there are **11 boxes**. Count them if you like! **Each box has 6** in it. You already know that if you have **11 boxes** and each box has **6** in it, the total will be **66**, because **6x11=66** which also means **11x6=66**. The top bar shows the number **66** which is the same as **11 boxes of 6**. So far so good? Excellent work!



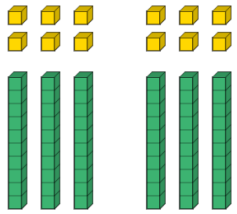
Well**, 12x6** is just going to be **one more box** with **6** in it.
In the second row instead of 11 boxes of 6, we now have **12 boxes of 6**.
The top row now says **66+6**. We now just need to work out **66+6**





So **12x6=72**.

Another way to look at 12x6 using our green tens and yellow ones. There are **6 tens**, **6 ones** and **another 6 ones (60+6+6=60+12=72)**.:

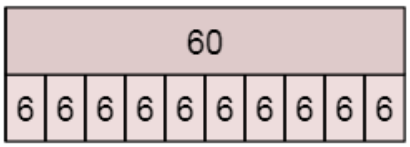


Since we're looking at 12 times tables, let's try some others:
12x2=11x2+2=22+2=24
12x3=33+3=36
12x4=44+4=48
12x5=55+5=60
Your turn…
12x6=

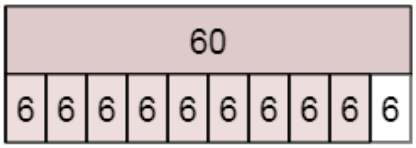
FACT 3 **6x9=54** (or **9x6=54).**

9 lots of 6 is only **1 lot of 6 less than 10 lots of 6**. The bar model can help us picture this again.

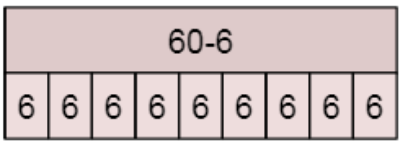
The bar model below shows that **10 boxes of 6** has the same value as **60**. **10x6=60**.



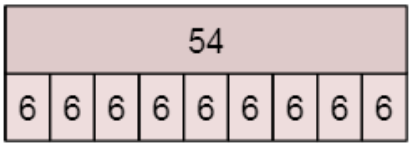
This time we just have to **remove** one of the boxes of 6 to make it **9 boxes of 6.**



As we've removed, or **taken** a **6 away**, the total value will be **60-6**.



Taking a number away from a multiple of 10 is easy if we know our number bonds to 10.
If we know **10-6=4**, then **60-6** must be **54**!

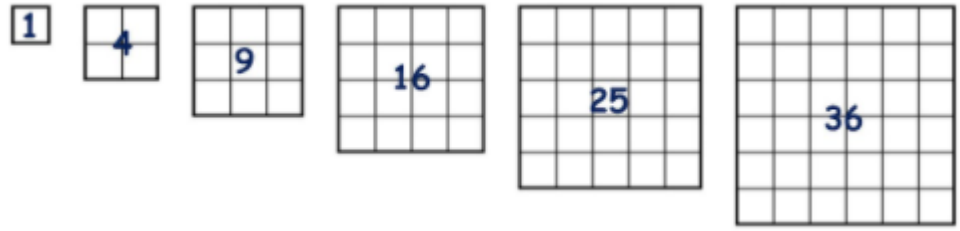


There are lots of other ways of working out **6x9**. If you haven't looked at the 9 times table before, it's **super cool** and has *lots* of wonderful patterns and tricks, making it **great fun** and **easy** to remember. Check out the '*how to pass the 55 club*' sheets if you want to know more and learn it ***fast!***

Fact 4 **6x6=36.**

36 is an example of a **square number** and they are **really cool** numbers. Have a look at some in the picture below. If we arrange the small squares into arrays, they make **square shapes**:

1x1=**1** 2x2=**4** 3x3=**9** 4x4=**16** 5x5=**25** 6x6=**36**



You can see **all** the square numbers in the 99 club on the **multiplication grid** below. They are the ones in the **diagonal line of blue numbers**. We get a square number by multiplying a number by itself. In the 44 club, the new square number is **36**. Which other square numbers do you already know?

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	11	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	42	48	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	11	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

If you find it hard to remember 6x6=36, don't worry - you already know what **5** lots **of 6** are (**30**). Now just add one more 6 = **36**!

Interactive Multiplication Chart

X	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

Look at the dark grey boxes in the grid.

The first shows that **1x6=6**.

The second shows that **5x6=30**.

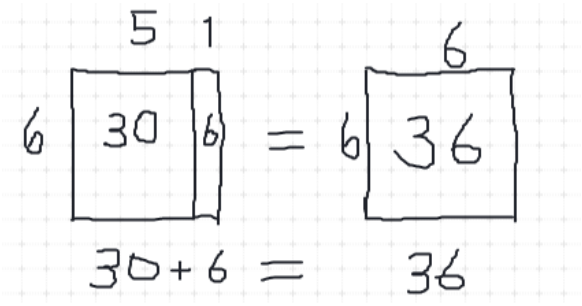
*Both of these facts are **easy** and you already know them!*.

If you add **1 lot of 6** and **5 lots of 6**, you have **6 lots of 6**!!

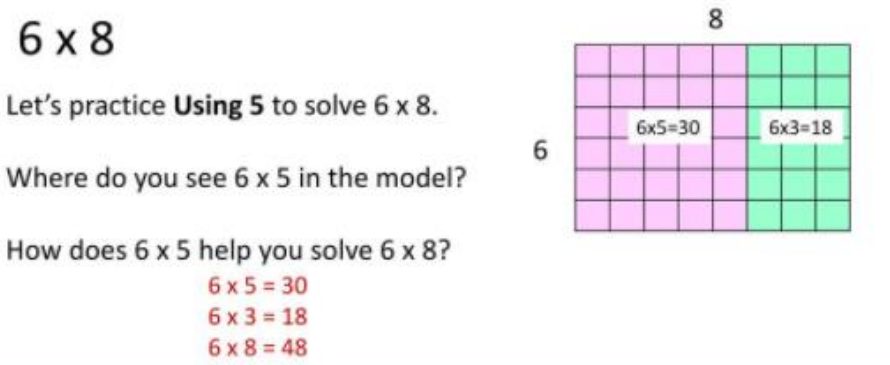
So now just add both products together:

6+30=36! (shown in the third dark grey box)

Here is the **same idea** shown as an area model:



FACT 5 6x8=48 There are lots of different ways of working out 6x8. Here are a few:



Interactive Multiplication Chart

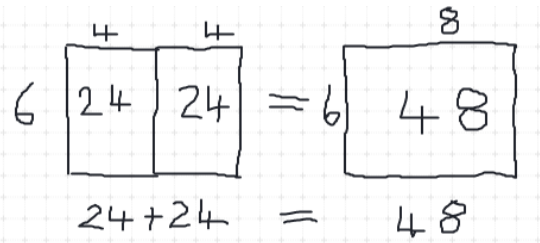
X	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

The two diagrams above show splitting up **8 lots of 6** into **3 lots of 6 (18**) and **5 lots of 6 (30)**. Now just **add** the products **18** and **30** together to get **48**.

You could also split it up into **4 lots of 6** and another **4 lots of 6**.

4x6=24 and another **4x6=24.**

Now just add **24** and **24** to get **48**.



FACT 6 **7x6=42 or 6x7=42**

Again, we can make this easier for ourselves by thinking about what we already know.

You already know 7 lots of 3 are 21 (7x3=21) *which is the same as* 3 lots of 7 are 21 (3x7=21).

So you could split **6 lots of 7** up into **3 lots of 7** and another **3 lots of 7**..

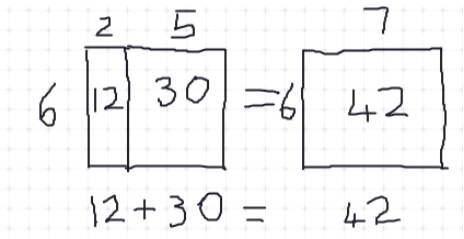
3x7=21 and another **3x7=21.**

Now just add **21** and another **21** to get **42.**

Or, use **2 lots of 6** and **5 lots of 6** to make a total of **7 lots of 6**

2x6=12 and **5x6=30**

Now just add **12** and **30** to get **42**.



Interactive Multiplication Chart

X	0	1	2	3	4	5	6	7	8	9
0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9
2	0	2	4	6	8	10	12	14	16	18
3	0	3	6	9	12	15	18	21	24	27
4	0	4	8	12	16	20	24	28	32	36
5	0	5	10	15	20	25	30	35	40	45
6	0	6	12	18	24	30	36	42	48	54
7	0	7	14	21	28	35	42	49	56	63
8	0	8	16	24	32	40	48	56	64	72
9	0	9	18	27	36	45	54	63	72	81

You have now looked at ALL 6 new facts for the 44 club. Good luck and keep practising!