Want to pass 55 club and move up to 66?

If yes, then this is for you!

Did you know?

If you've passed 44 club (hint: you have!) then you already know your 2,5,10,3, 4 and 6 times tables -

BRAVO!!!

That means you know **52** facts out of a total of only **67** facts!

You can write this as a fraction: $\frac{52}{67}$

Another way of saying the same thing is that you already know about 78%

or **nearly** - 

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

That's WELL OVER THREE QUARTERS AND WAY OVER HALF!

WELL DONE YOU!

In fact, there are only 15 more facts left until you are in the 99 club!!!

YOU CAN DO THIS !

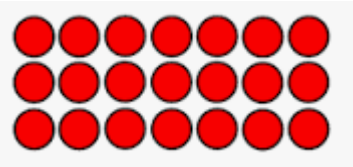
But how can this possibly be when you've still got to learn the 7s, 8s, 9s, 11s and 12s? That's a lot of times tables still to learn surely?

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, 4s** and **6s** (*hint* - you have!) you already know **2x7, 5x7, 10x7, 3x7, 4x7** and **6x7**! That's ***loads*** of the seven times table ***you already know***! It's the same for the 8s,9s,11s and 12s. 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 **3x7** is exactly the **same** as **7x3**!

It's easy to see if you have 21 objects and lay them out…



There are **21** red dots.

We can 'see' this as

3 horizontal *(side to side)* rows **of 7** (**3x7**) or…

7 vertical *(top to bottom)* columns **of 3** (**7x3**).

But we haven't changed how many there are in total. It's always **21**!

OK, so now you know you've already done most of the hard work in reaching the 99 club, let's take the next step.

EVERYTHING YOU NEED TO KNOW TO PASS THE 55 CLUB.

Did you know, the 55 club has only **12**new facts in it, including **3** very easy ones and **4** quite easy ones? That's not too many. They are:

7x7=49
8x7=56
9x7=63
11x7=77
12x7=84
8x8=64
9x8=72
11x8=88
12x8=96
9x9=81
11x9=99
12x9=108

So you *could* just memorise them. But a better way is to investigate the patterns and relationships. Then it doesn't matter too much if you forget them because **you can always work them out**!

Hmm…. they look a bit hard, don't they?

FACTS 1, 2 and 3. Let's learn the **easy** ones first: **11x7, 11x8, 11x9**.

11 times tables are 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 didn't you?!*)

Nice pattern, isn't it?

Linking it to our place value knowledge, we can also see that **11** is **1 ten** and **1 one.** 2 elevens are 22, which is 2 tens and 2 ones and so on:

11x7=77 (7 tens, 7 ones)
11x8=88 (8 tens, 8 ones)
11x9=99 (9 tens, 9 ones)

They're not too bad after all! I think you can learn these pretty quickly!

Once you've mastered those 3, there are only 9 facts left!

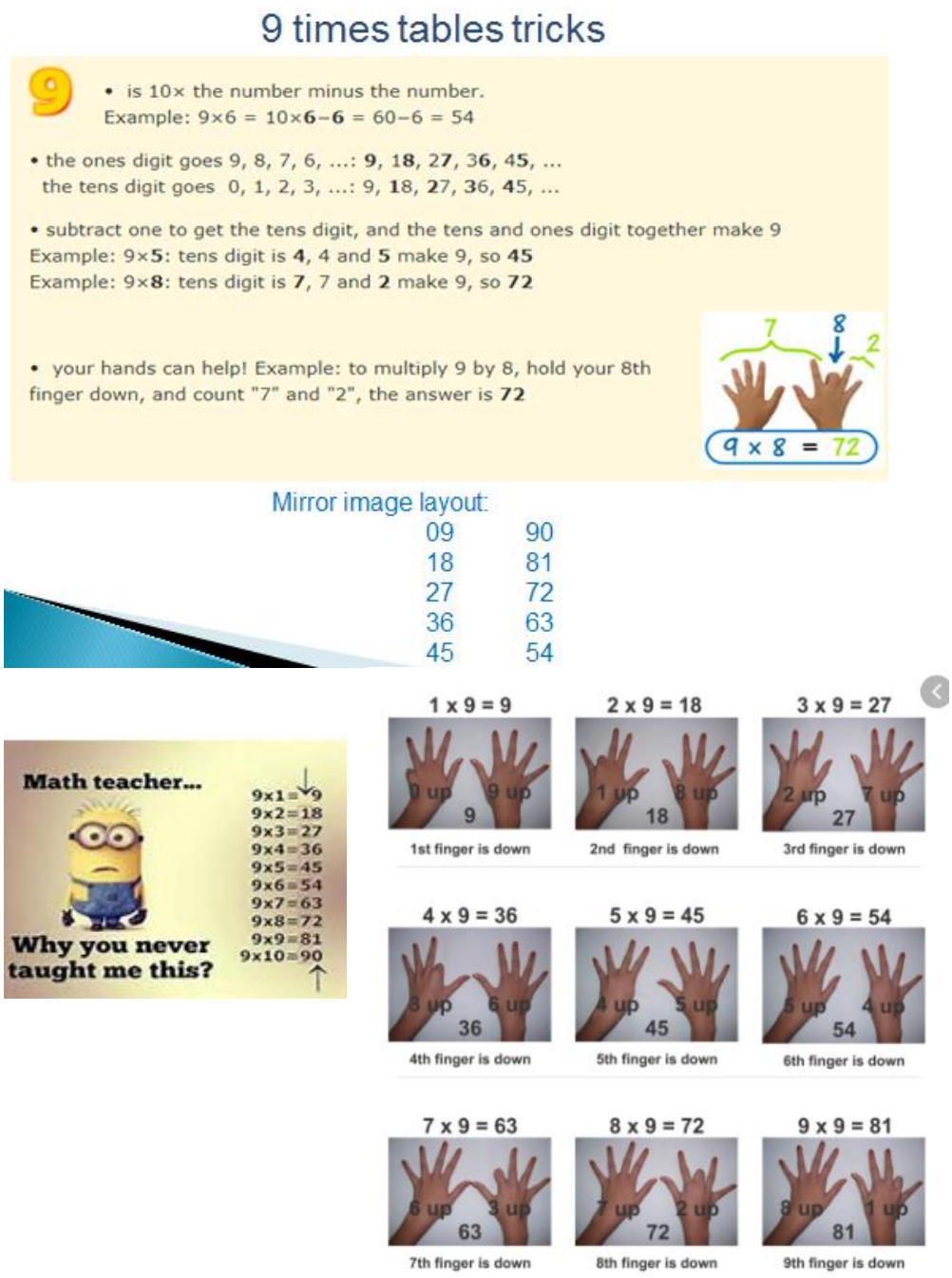
FACTS 4,5,6 and 7

If you haven't looked at the 9 times table, I'd go there next as it's got *so* many cool patterns making it **great fun** and **easy** to remember. So the ones you are meeting for the first time in the 55 club are:

7x9=63
8x9=72
9x9=81
12x9=108

You know all the others because of learning them in the other times tables, thanks to that simple law with the **big** name (can you remember it?!)

Anyway, have a look at all the cool tricks below for the **9 times table**:



Cool, isn't it?

Practice all those learned so far before moving on to the next lot.

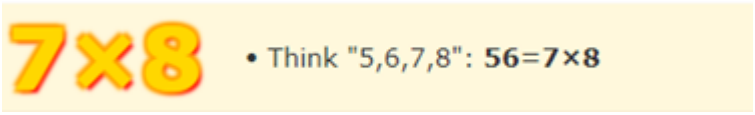
11x7=
11x8=
11x9=
7x9=
8x9=
9x9=
12x9=

If you're ready, let's move on!

The only ones left to learn now are:

7x7=49
8x7=56
12x7=84
8x8=64
12x8=96

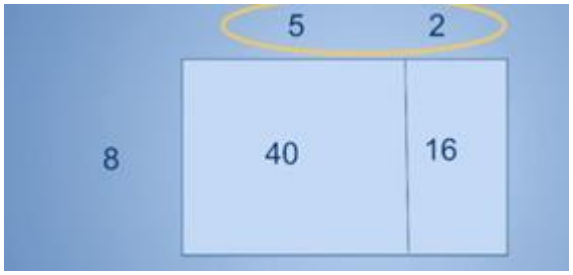
FACT 8: The next **cool** one to learn is **8x7**, which we know is the same as **7x8**. We can write this as: **8x7=56** *or* **7x8=56** *or* **56=8x7** *or* **56=7x8**. It's the last way of writing it which we want : **56=7x8**. Look at the order of the digits. **5,6,7,8**!



It's just a trick, so not very mathematical!

Here is a **more mathematical** way to work out **7x8**.

If you know **5 lots of 8 are 40** *(which you have known since passing the 22 club!)*, and **2 lots of 8 are 16** *(which you have known since 15 club!)*, just add those two products together **40+16=56** **BOOM!**



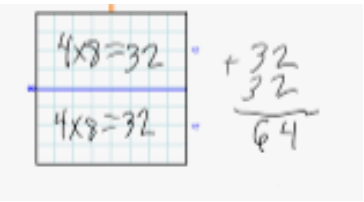
FACT 9. Ok, next. Lots of children learn **8x8=64** as '**I ate and I ate till I was sick on the floor, 8 times 8 is 64**'! Which again, isn't very mathematical but, hey, it might work for you! (*Shhh… don't tell Mrs Barnes!*)

Another, more mathematical way to remember is that you already know that **4 lots of 8 is 32**. So that means that **another 4 lots of 8 is also 32**. And that's **8 lots of 8** altogether. So together, that must mean together they add up to **64**!

4x8 (you know it's 32) And another 4x8 (it's 32!)

32 + 32 = 64

Another picture that shows the same idea is below. This one's called an **area model** – it's basically very similar to the one above but without all those dots!



64 is also a **square number**. More about those later.

Once you've mastered **7x8** and **8x8**, it's time to look at a couple *of twelve times somethings* to learn: **FACTS 10 and 11**

12x7
12x8

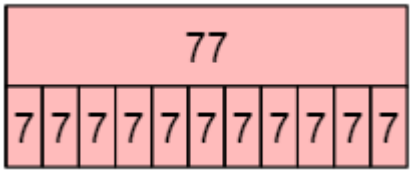
The 12 times table seems a little scary to learn, but it really isn't.

If you've made it this far, you already know what **11x7** and **11x8** equal. Well, that means you can **EASILY** work out **12x7** and **12x8**.

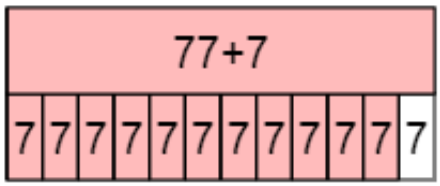
Let's look at **11x7**:

Another way of saying **11x7** is **11 lots of 7** or **11 groups of 7** or even **11 boxes of 7**.

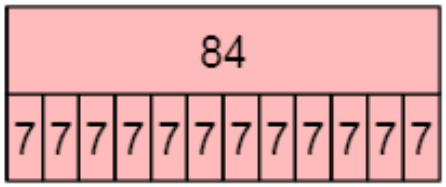
In the bar model below, on the second row, there are **11 boxes**. Count them if you like! Each box has **7** in it. You already know that if you have **11 boxes** and each box has **7** in it, the total will be **77**, because **11x7=77**. So far so good? Excellent!



So **12x7** is just going to be **one more box** with **7** in it. So in the bare model below, second row instead of 11 boxes of 7, we have **12 boxes of 7**. In the top row, we now need **77+7**.



So to calculate **12x7**, we just need to add **7 to 77**: **77+7=84**.



So,
12x2=11x2+2=22+2=24
12x3=33+3=36
12x4=44+4=48
12x5=55+5=60
Try some for yourself:
12x6=

12x7=

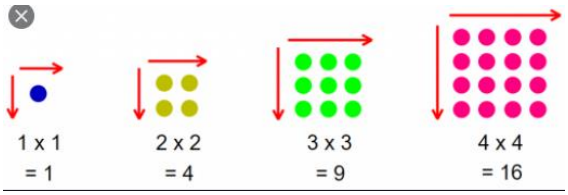
12x8=

Once you've mastered **12x7** and **12x8**, the **only one left** to remember is

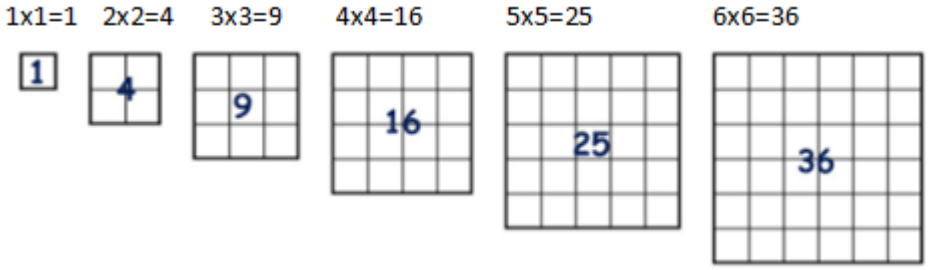
FACT 12 7x7=49!

49 is something called a **square number**. Remember I said that **64** (8x8) was also a square number? They are **really cool** numbers. Have a look at some in

the picture below. If we arrange the dots into arrays, they make **square shapes**:



Here are some more pictures of square numbers made from smaller squares:



You get **square numbers** by **multiplying any number by itself**. So 1x1=**1**, 2x2=**4**, 3x3=**9** etc! You can see all the square numbers on the **multiplication grid** below. They are the ones in the **diagonal** line of **blue numbers**. Which ones do you already know? The ones we meet for the first time in **55 club** are **49,64,81**.

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 **7x7=49**, don't forget you already know what **5x7** is and **2x7**. If you know both of these, you can add them together to get **7x7**:

Interactive Multiplication Chart

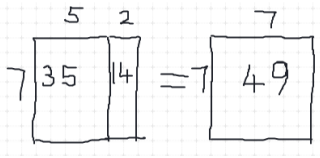
X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	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

The grid shows that **2x7=14** and **5x7=35**, *both of which you already know*.

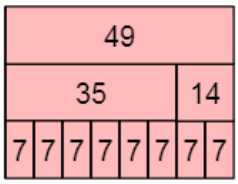
So if you add **2 lots of 7** and **5 lots of 7**, you have **7 lots of 7**!!

Just add both products together: **14+35=49!**

Here's an **area model** which shows the same thing:



And finally our good old friend, the bar model, showing the same thing again!



If you want to see a trick to learning the 7 times tables, google search *oxford owl 7 times tables trick.*

NOW YOU KNOW ALL THE 12 ADDITIONAL FACTS NEEDED TO PASS THE 55 CLUB. KEEP PRACTISING AND GOOD LUCK!!!