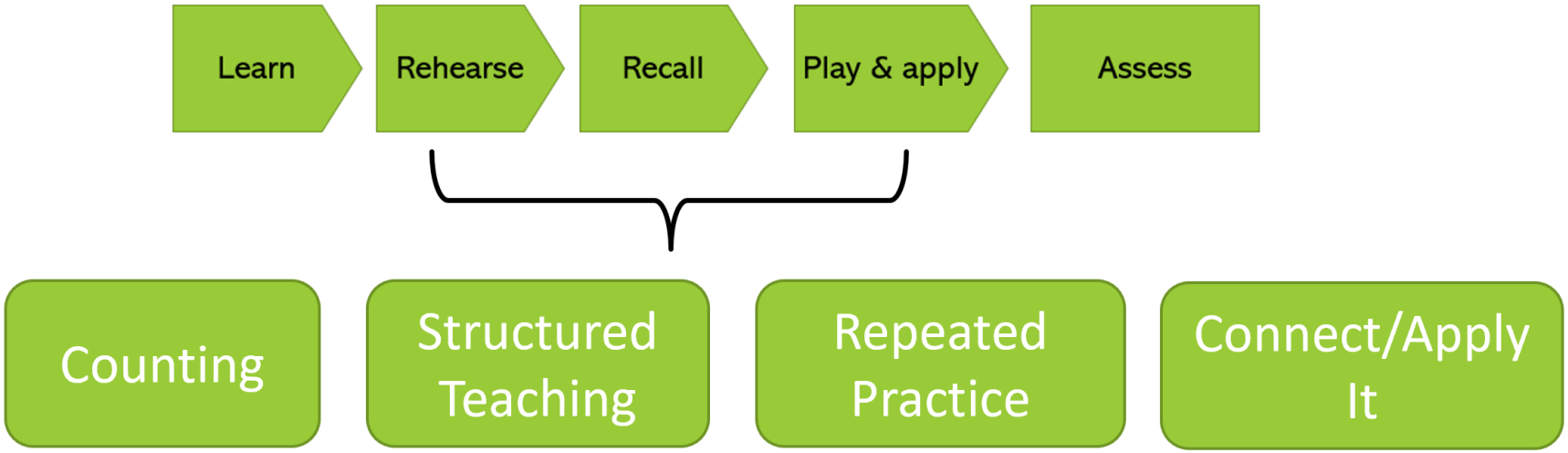
Teaching structure for Times tables – Deliberate practice



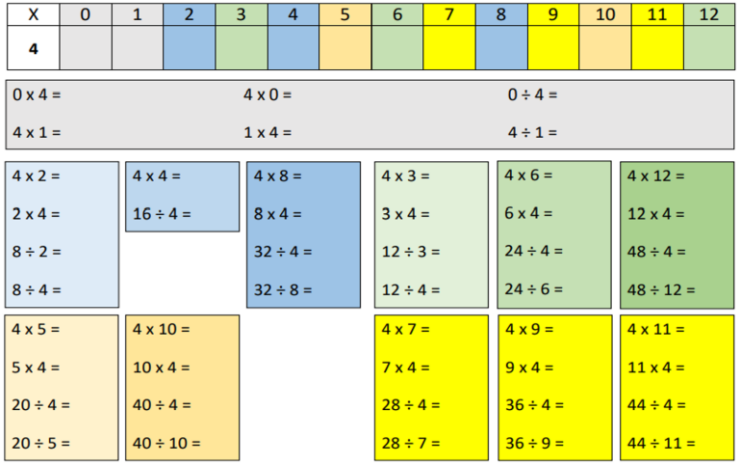
Rationale to chosen structured approach

Each session needs to:

- Follow the same approach, consistency is key
- Whole school to use the same songs to ensure consistency
- Same structure of recall and practice approaches used
- Be kept simple but effective
- Purposeful – the children need to get something out of it
- Short – stick to the timed approach set out
- Build stability and routine

The chosen approach will provide the children with a consistency year upon year. They will know what to expect from the teachers and what is expected of them during each session. They will be able to build upon prior knowledge and make links in their learning, ultimately applying this to other areas of the maths curriculum. They will be provided with the opportunity to use a variety of learning styles, kinaesthetic, visual, aural and written and be able to find patterns.

Sequence of session

	TEACHING SEQUENCE	TIME ALLOCATION	SUGGESTED ACTIVITY
1	**Counting** Learn element to the session by: Mapping facts, Order in which they are taught, Frequency of Teaching and structure to the lesson	3 – 5 minutes	• Times table songs – see attached list for each timetable • Skip counting using fingers • Chanting •
2	**Structured Teaching** Includes rehearsal and recall of facts through: Skip counting, Rote recall – chanting, Spot patterns/make Links, ox & 1x and order in which they are taught	5 minutes	• Use of laminated numberline (number stick)  • Making links in the order in which they are taught  • ensuring taught in the suggested border • Chanting

3	Repeated Practice Play and apply through 'do now' independently: Tasks – progression, Weekly quizzes, Apps and games and flashcards	5 minutes	• Flashcards • Times table square (out of order) • Recall in order , out of order and apply division facts when long term plan indicates this • Post it note activity (circular with times table in the middle) • Maths bot – beat the clock • Thinking framework
4	Connect/Apply It Assess element of teaching to be completed every 2/3 weeks: Arithmetic tests, Sats style questions and MTC practice		• Use of sats style question (use maths.co.uk to support this) • Links made in maths lessons • Use of TTR/UR Brainy and MTC • Use of If I know….. then I also know…….. grids

Links to time table songs

TIMES TABLE	CHOSEN SONG
2	https://www.youtube.com/watch?v=9C4EN7mFHCk 
3	https://www.youtube.com/watch?v=r7eGyNUwP6o 
4	https://www.youtube.com/watch?v=TL-vLcjVj5o 

5	https://www.youtube.com/watch?v=6lti2YOzplw 
6	https://www.youtube.com/watch?v=I_xKoOeBFWs 
7	https://www.youtube.com/watch?v=eIH0LZWt_zw 
8	https://www.youtube.com/watch?v=kWZU6jLdL0M 

9	https://www.youtube.com/watch?v=l7LG16y6GHY 
10	https://www.youtube.com/watch?v=8yxMJUHBslY 
11	https://www.youtube.com/watch?v=hy91bdIEeAY 
12	https://www.youtube.com/watch?v=pX98JMedmT4 

Connections in order of teaching the times tables:

X	0	1	2	3	4	5	6	7	8	9	10	11	12
4													

0 x 4 =	4 x 0 =	0 ÷ 4 =
4 x 1 =	1 x 4 =	4 ÷ 1 =

4 x 2 =	4 x 4 =	4 x 8 =	4 x 3 =	4 x 6 =	4 x 12 =
2 x 4 =	16 ÷ 4 =	8 x 4 =	3 x 4 =	6 x 4 =	12 x 4 =
8 ÷ 2 =		32 ÷ 4 =	12 ÷ 3 =	24 ÷ 4 =	48 ÷ 4 =
8 ÷ 4 =		32 ÷ 8 =	12 ÷ 4 =	24 ÷ 6 =	48 ÷ 12 =

4 x 5 =	4 x 10 =	4 x 7 =	4 x 9 =	4 x 11 =
5 x 4 =	10 x 4 =	7 x 4 =	9 x 4 =	11 x 4 =
20 ÷ 4 =	40 ÷ 4 =	28 ÷ 4 =	36 ÷ 4 =	44 ÷ 4 =
20 ÷ 5 =	40 ÷ 10 =	28 ÷ 7 =	36 ÷ 9 =	44 ÷ 11 =

Times Tables Recall Rhyme

What is it?

In order to raise the profile of times tables, we will be introducing 'Times Tables Recall Rhymes'. These are sets of rhymes to learn the tricky times tables that are often hard to remember. A selection of 18 have be selected along with the reverse fact in order to embed the commutative nature of the multiplication calculations. These 18 have been picked from extensive research carried out and were found to be the ones that the highest percentage of children would get incorrect. Please see the link below to access the data from this research –

https://docs.google.com/spreadsheets/d/18QfP_gCptfo6Gf1Y5HAaiNBwrDMhGutyNk2qYl8zYmo/edit#gid=0

Why is it needed?

The need for pupils to know their times tables is obvious in how much it feeds into other areas of the curriculum. Some pupils have varied learning styles and rhyming is often an effective method. Times tables knowledge across the school is not always secure and with the Y4 times table check, it is vital we do all we can to embed this knowledge. Of course, we don't do this just for a test… this knowledge is vital for UKS2 as well as our pupils' secondary career.

How will this be implemented?

This will a school wide initiative where all pupils from Y3 to Y6 will have the same three rhymes to learn on a weekly basis on a half termly rotation. Research suggests that in order for something to be committed to long term memory, it must be repeated and revisited regularly with gaps in between. This is the rationale behind the half termly rotation.

- The three rhymes for the week can be found on the table below
- The rhymes for the following week will be shared with parents on the school website
- The rhymes of the week should be chanted in class multiple times a day. Find any opportunity to do so… after morning register, the start of main maths, the start of skills, after afternoon register, just before the children go home etc.
- Where possible, staff should stop pupils/classes in the corridor to ask them the rhymes of the week
- Pupils can call out rhymes when answering the register
- The rhymes of the week should be displayed on the maths working wall and should be written in a size that all children can see and read.

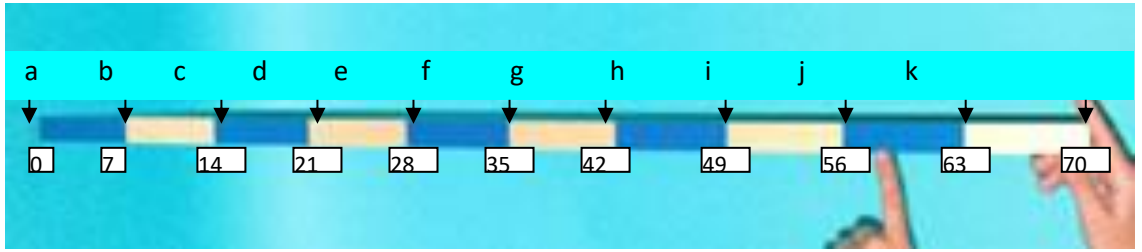
This is something that will work in conjunction with our weekly times tables sessions and TTRS to raise the profile of times tables and build confidence in children in recalling them rapidly.

When	Times table with fact family reversal	Rhyme
Week 1 of each half term	4 x 12 and 12 x 4	• At the park with my mate… 4 times 12 is 48 • I left the park a little late… 12 times 4 is 48
	11 x 11	• Fancy going for a run… 11 times 11 is 121
	7 x 8 and 8 x 7	• My house is made of bricks… 7 times 8 is 56 • This old house needs a fix… 8 times 7 is 56
Week 2 of each half term	4 x 6 and 6 x 4	• Please sir, can I have some more?… 4 times 6 is 24 • More made my belly sore… 6 times 4 is 24
	7 x 7	• This one's my favourite rhyme… 7 times 7 is 49
	8 x 9 and 9 x 8	• Get in line, there's a queue… 8 times 9 is 72 • This long line will not do… 9 times 8 is 72
Week 3 of each half term	8 x 8	• I ate and ate 'til I was sick on the floor… 8 times 8 is 64
	9 x 12 and 12 x 9	• Saving the world is our fate… 9 times 12 is 108 • A beautiful world we'll create… 12 times 9 is 108
	6 x 7 and 7 x 6	• Fancy a trip to the zoo? 6 times 7 is 42 • At the zoo, I saw elephant poo… 7 times 6 is 42
Week 4 of each half term	6 x 8 and 8 x 6	• At the doctor's, I had a long wait… 6 times 8 is 48 • The doctor said her name was Kate… 8 times 6 is 48
	6 x 12 and 12 x 6	• Above the clouds, the bird flew… 6 x 12 is 72 • The bird had an amazing view… 12 times 6 is 72
	4 x 7 and 7 x 4	• Zooming down, I roller-skate… 4 times 7 is 28 • Hurtling down towards the gate… 7 times 4 is 28
Week 5 of each half term	12 x 12	• What's that running past the door? 12 times 12 is 144
	8 x 12 and 12 x 8	• I saw a magician doing tricks… 8 times 12 is 96 • This magician had walking sticks… 12 times 8 is 96
	6 x 9 and 9 x 6	• Digging down to the core… 6 times 9 is 54 • I had to dig more and more… 9 times 6 is 54
Week 6 of each half term	4 x 8 and 8 x 4	• Where's my car? It's brand new… 4 x 8 is 32 • This car is shiny blue… 8 times 4 is 32
	7 x 12 and 12 x 7	• Chicken tastes great, that's for sure… 7 times 12 is 84 • Scrumptious chicken, I want more! … 12 times 7 is 84
	11 x 12 and 12 x 11	• Is that the train leaving for Crewe? … 11 x 12 is 132 • Before the train, let's grab a brew… 12 x 11 is 132

Learning times tables using the counting stick/laminated line method!

The teacher begins by holding a counting stick. You may already have one in the school, if not you should get it from most educational supplies companies. You will also need small cards with the answers to the times tables written on.

The teacher tells the children they will be magically learning their seven times tables. This gives the children a sense of anticipation about using the method. The teacher asks children a number of questions whose answers relate to the seven times tables. All children answer the teacher together.



1. **What number do we always start with? (while pointing to the start of the counting stick- a)**
   The teacher tells the children that we always start with 0. The teacher places a small card with 0 at the start of the counting stick (using blu tack).

2. **What times table are we learning? (while pointing at interval b on the counting stick)**
   The children should be aware of the times table they are learning. They answer seven. The teacher sticks a seven card at the next interval on the counting stick.

At this point the teacher will repeat step 1 and 2.

3. **Can you multiply it by 10? (pointing to interval k)**
   The children should answer 70. The 70 card is placed at the end of the counting stick.

The teacher repeats step 1 and 2.

4. **Can you double it? (pointing to interval c)**
   The children answer 14. The teacher sticks the 14 card at c.

5. **Can you double that? (pointing to interval e)**
   The children answer 28. The teacher sticks the 28 card at e.

The teacher then revisits steps 1-5 in the same order offering lots of praise for the children as they remember each part.

6. **I have a very special number to tell you and it is called the key. Our key in this times table is 21. (while pointing to d) What is our key?**
The children answer 21. The teacher sticks the 21 card at d.

7. **Can anybody double the key? (while pointing to g)**
A child/ some children may answer with 42. The teacher sticks the 42 card at g.

8. **This is really hard now, can anybody triple the key? (pointing to interval j)**
Again a child/ some children may answer with 63. Show the children that the area along the counting stick has doubled for 42 and tripled for 63.

The teacher then repeats all steps 1-8. Again praising as they go.

9. **Who remembers our key?** Allow children to answer. **Double it.** Children answer. **Now add seven. (pointing to h)**
The teacher sticks the 49 card at h.

At this stage it is important to repeat all steps after each new number is added to the stick, starting from step 1. Especially when the children are first getting used to the method.

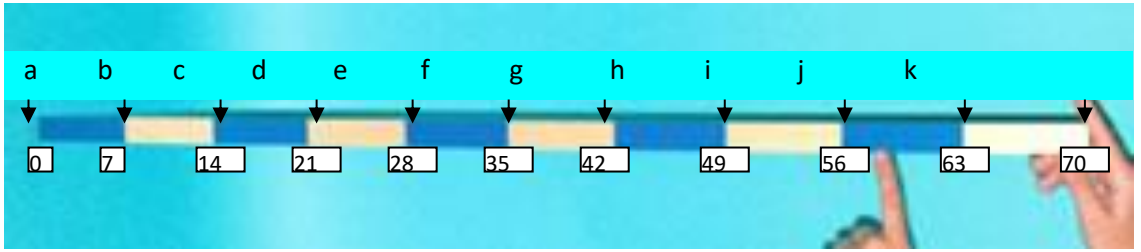
10. **Everybody touch your nose. That's 35. Touch your nose.** Children answer 35. **(point to f- the middle of the counting stick)** The teacher sticks the 35 card at f.
11. **Now everybody needs to help me. There is one number I always forget. Its 56 (pointing to i) What number do I always forget?**
The children answer 56. The teacher sticks the 56 card at i.

Repeat all questions again pointing to the appropriate answer each time. Although this seems lengthy in words it should only take about seven or eight minutes to complete this far.

The teacher then completes the method again (starting at step 1) however each time the children answer a question, the answer card is removed from the stick! It sounds difficult but it is amazing to see the children can still answer this question. It is important the teacher still points to the correct interval on the stick as it acts as a visual reminder for many children. It is also important the teacher frequently begins at step 1 and works all the way through as many answers lead to the next in this method. When all answers have been removed, work through the method from step 1 to step 11 again, with no numbers on the stick, just pointing to the correct interval.

Things to remember and try:

- This method works so well due to its repetitive nature. Repeat from step 1 after every couple of new answers have been added to the stick. Children rely on the information in the previous step.
- This method and the questions work for all times tables, not just the sevens. Each times table will have a key that can be doubled and tripled.
- Practice the method yourself before using it with the children, try it on a friend or colleague. It is important you are pointing to the correct places on the counting stick when you ask the questions. If it helps, use small stickers showing the answers on the back of the stick.
- Working through the method, putting on the answers and then removing them should only take about 5 mins in total. It is a great mental oral starter to any maths lesson. I would suggest revisiting it with the children, without the answers displayed! I would also suggest using it about three times in one week before moving onto the next times table.
- Children can be challenged in different ways such as to try it with their eyes closed, or turned away from the teacher if really confident. I have also challenged boys against girls etc.



KQ: *What number do we always start with?*

KQ: *What times tables are we doing?*

KQ: *Can you multiply it by 10?*

KQ: *What times table are we doing?*

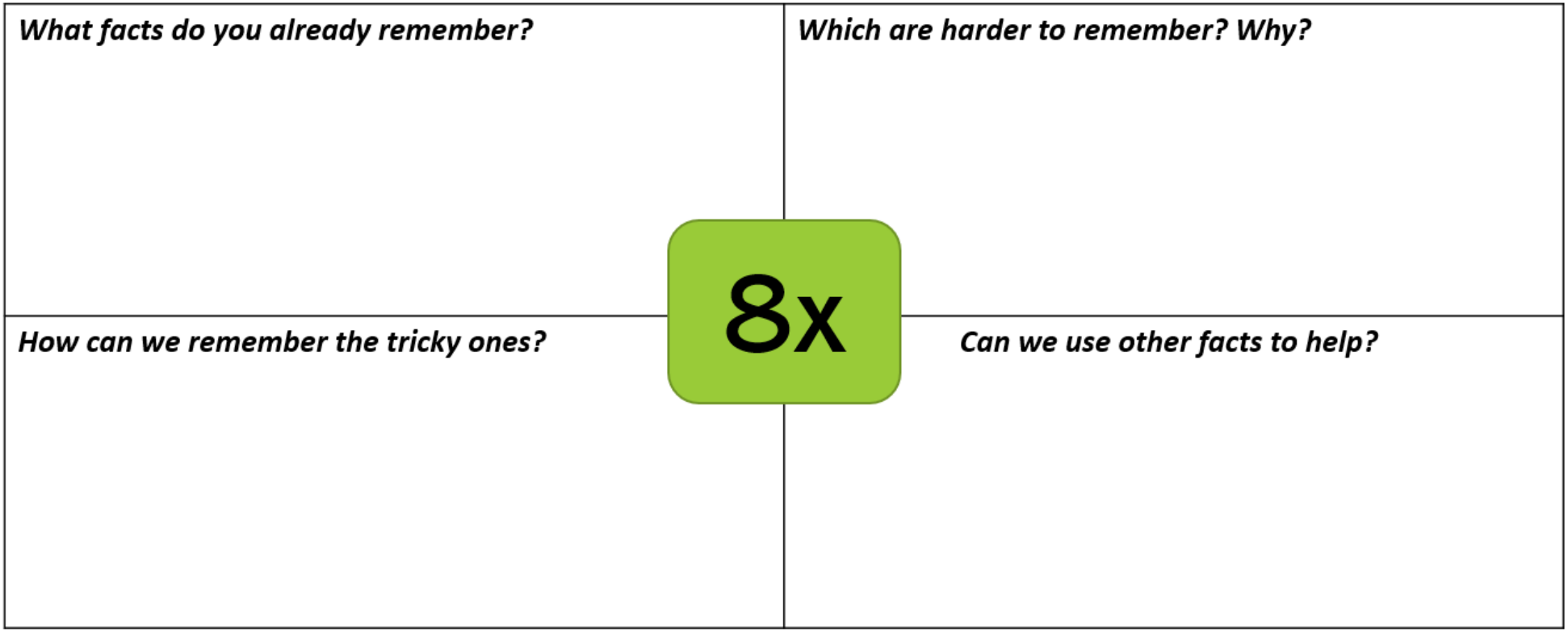
KQ: *Can you double it?*

KQ: *Can you double that?*

KQ: *What is our key?*

KQ: *Can you double our key?*

A thinking framework …



Make it manageable

x	2	3	4	5	6	7	8	9	11	12
2	4	6	8	10	12	14	16	18	22	24
3		9	12	15	18	21	24	27	33	36
4			16	20	24	28	32	36	44	48
5				25	30	35	40	45	55	60
6					36	42	48	54	66	72
7						49	56	63	77	84
8							64	72	88	96
9								81	99	108
11									121	132
12										144

19 facts to learn in Y2

21 facts to learn in Year 3

15 Facts to learn in Year 4