

Lympsham CofE Academy- Multiplication Strategy

Progression of Times Tables

- Order of skip counting facts before learning times tables facts for fluency and recall

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

Times Table Challenge Booklets – Ashley Down approach

- Times table challenge booklets are introduced at the beginning of the Spring term in Year 3 and are taught in the order below.
- Prior knowledge in Year 2 will support the recall of Double facts

	Autumn			Spring						Summer			
Year 3				Doubles		2 Times Table		Square Times Table		5 Times Table		Consolidation	
				5 weeks		5 weeks (8 facts)		5 weeks (7 new facts)		5 weeks (6 new facts)		3-5 weeks 21 out of 36 facts learnt by end of Year 3	
Year 4													
	Recap	3 Times Table	4 Times Table	6 Times Table	7 Times Table	8 TT	9 TT	More squares	10&11 TT	12 Times Table	MTC Prep	MTC	Consolidation
	3 weeks	5 weeks (5 new facts)	5 weeks (4 new facts)	3 weeks (3 new facts)	3 weeks (2 new facts)	2 weeks (1 new fact)	2 weeks (0 new facts)	1 wk	1 wk (remaining facts needed for MTC learnt)	4 weeks	3 weeks	1 wk	3-5 weeks
	30 out of 36 facts learnt by end of Autumn Term			All 36 facts learnt by mid Spring 2									

Order of times table facts rehearsed – Key Stage 2

Year 3			Year 4								
X2	Square Times Tables	X5	X3	X4	X6	X7	X8	X9	X10	X 11	X 12
2X2										2x11	2x12
3X2	3X3	3X5								3x11	3x12
4X2	4X4	4X5	4X3							4x11	4x12
5X2	5X5									5x11	5x12
6X2	6X6	6X5	6X3	6X4						6x11	6x12
7X2	7X7	7X5	7X3	7X4	7X6					7x11	7x12
8X2	8X8	8X5	8X3	8X4	8X6	8X7				8x11	8x12
9X2	9X9	9X5	9X3	9X4	9X6	9X7	9X8			9x11	9x12
									10x10		
									11x10	11x11	
									12x10	12x11	12X12

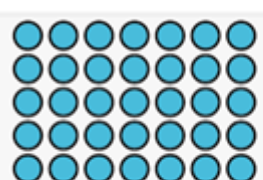
8 new facts	7 new facts	6 new facts	5 new facts	4 new facts	3 new facts	2 new facts	1 new fact	0 new facts			
21 New Times Table facts learnt by end of Year 3			15 New Times Table Facts learnt by end of Year 4								

Times Table Challenge- booklets

1. **1 booklet per child**- For every new times table taught, each child will have a booklet which has the new facts being learnt on the front.
2. **Times table facts clearly displayed**- New times table facts will be clearly displayed in the classroom in a position that is easily accessible for all children.
3. Children to be encouraged to use the displayed facts to answer the questions. They will also have access to multiplication squares to use.
4. **Answer questions in order, working vertically**- The children run through the questions in order, vertically down the page, do not skip any facts as they tend to 'link', e.g. $4 \times 6 = \underline{\quad}$, $6 \times 4 = \underline{\quad}$, $24 \div 6 = \underline{\quad}$, $24 \div 4 = \underline{\quad}$
5. **Whole class marking**- Children mark their own booklets in purple pen, they fill in any gaps when marking.
6. Once marked, the children identify a number fact they need to learn, if necessary.

$7 \times 5 = 35$
 $5 \times 7 = 35$

$35 \div 5 = 7$
 $35 \div 7 = 5$



$5 + 5 + 5 + 5 + 5 + 5 + 5 = 35$
 7 groups of 5 = 35
 '7 fives are 35'

35						
5	5	5	5	5	5	5

Lesson structure (twice daily, 10 minutes at a time)

1. **Recap times table of focus**- display times table, recap using counting stick/ choral response/ skip counting.

2. **Introduce and teach the 'fact of the day'**- Write up the associated division facts alongside the times table facts so that the children can see the clear relationship between multiplication and division. This is also modelled with a range of representations. One fact per day.
3. **Booklets** (Aim for 2 minutes, allow longer for those who need it)
4. **Whole class mark booklets using 'sound bites/ memorised phrases'**

The key principles- teaching

1. **Highlight** what the children already know as known facts. Through the knowledge of **commutative law** they can really see even at this stage how much they already know, e.g. $2 \times 5 = 10$ and $5 \times 2 = 10$.
2. **Sound bites and memorised phrases**- Learn each number sentence as a memorised phrase by repeating the sound bite out loud.
3. **Largest factor first (use this for teaching and marking)**- We always say the largest factor (number) first so that they are learning one sound bite for each fact. For example: $6 \times 5 = \underline{\quad}$ You say: *six fives are thirty*, then children repeat: *six fives are thirty*

 $6 \times 6 = \underline{\quad}$ You say: *six sixes are thirty-six*, then children repeat: *six sixes are thirty six*

 $18 \div 3 = \underline{\quad}$ You say: *_____ threes are eighteen*, then children repeat: *six threes are eighteen*

 $4 \times 6 = \underline{\quad}$ You say: *six fours are twenty-four*, then children repeat: *six fours are twenty four*

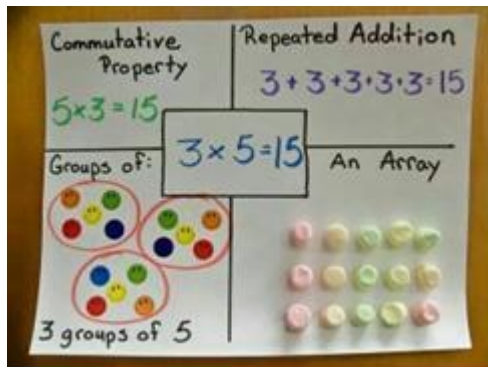
 $6 \times 2 = \underline{\quad}$ You say: *six twos are twelve*, then children repeat: *six twos are twelve*
4. We want them to become **known** facts. Leave the answers on display.

Additional Support:

It is really important to:

- Identify those children who are 'stuck' and unpick the barrier. What is the one fact they will learn that day?
- For some children, the timed element can cause anxiety, allow them additional time to complete their times tables (5 minutes) and gradually reduce this as they become more secure.
- Give individual 1-1 intervention for those children who are struggling to remember the number facts.

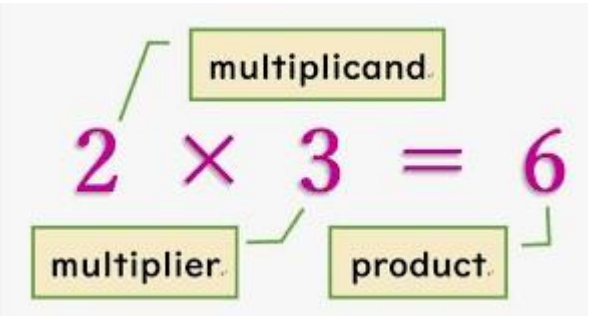
- Start by conferencing the child to identify the number facts they can recall (known facts – green) and unknown facts (red). They then pick two **different** unknown facts and use them as a bookmark to self-test before reading.

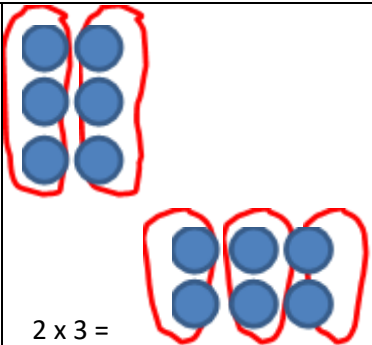


Step to success- additional

Even before learning the times tables facts, it is really important that children are comfortable experimenting with numbers. There are a range of different strategies that can be used to teach times tables which are detailed below.

1. Linguistics	When teaching times tables the language is incredibly important. It needs to be consistent across the whole school. ___ groups of ___ = ___ When saying the times tables, always say the multiplicand (the number being multiplied) first, then the multiplier (the number you are multiplying by) and finally the product. e.g.
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	This is how you would record the three times table 2  groups of 3 are 6
2. Counting	Always display the multiplication square or 100 square to support the children. Count in the multiples of the chosen times table. Loudly say the multiple and whisper the numbers in between. E.g. 0 1 2 3 4. Move on to just say the multiples in order forwards and backwards. https://www.youtube.com/watch?v=yXdHGBfoqfw
3. Step Counting	Teacher says the multiple (2) the children say the next multiple (4).
4. Chanting	Chant the times tables in order using the short sound bite of: 10 fours are 40 8 fives are 40 This ensures the correct vocabulary is used and the children can see the relationship between different times tables.
5. Arrays	Introduce the concept of arrays. Show the link between an array and a multiplication link. Show how the orientation of the array can be manipulated.

	 $2 \times 3 =$ $3 \times 2 = 6$ (2 groups of 3) (3 groups of 2) Make links to square numbers. If the array makes a square, it is a square number.
6. Key Facts	The quick facts that children should know: Factor x Factor = Product Doubles (knowing it is times by 2) Double the factor is double the product. ($1 \times 8 = 8$ double is $2 \times 8 = 16$) Knowing $0 \times ? = 0$ 5 x (facts) 10 x (facts) Square numbers (link to arrays) Cubed numbers (KS2)
7. Commutativity	Knowing the factors can be multiplied in any order and still make the same product.
8. Missing Number	Give children missing number questions. E.g. 2, 4, __, 8 __, 10 Additionally give the children missing number questions E.g $1 \times 2 = 2$ then move onto $1 \times _ = 2$ $2 \times 2 = _$ $_ \times 2 = 4$
9. Inverse	Link back to arrays. If you know $4 \times 5 = 20$ you know $20 \div 5 = 4$ and $20 \div 4 = 5$