



Times Table Guidance

Intent:

- We want children to be confident and efficient with their times table facts.
- We want children to see the connection between times tables and division (using the inverse).
- We want children to be able to show fluency and see/know/show the different fact families for times tables and division.
- We want children to see the connection between different times tables e.g. that $\times 4$ is like doubling the $\times 2$ tables etc.

Implementation:

- We plan meaningful lessons (starters or whole lessons) that teach, recap and consolidate times table facts.
- We use a wide range of resources to support the teaching of times tables.
- We make connections with the times tables and related division facts to other areas of maths such as fractions.
- We will teach meaningful links with different times tables e.g. If you know that $2 \times 7 = 14$, then you will know that 4×7 is double and 28.

Impact:

- Our children will enjoy maths with a secure level of confidence and efficiency with their times table facts.
- Our children can see connections with times tables and related division facts.
 - Our children can see the connection between times tables and the wider curriculum such as: fractions, area etc.
- Our children will be able to use a wide range of resources to learn, recap and consolidate times table facts.
- Our children will be able to apply times tables to solve problems, reason about maths and show fluency.

Times Table Expectations

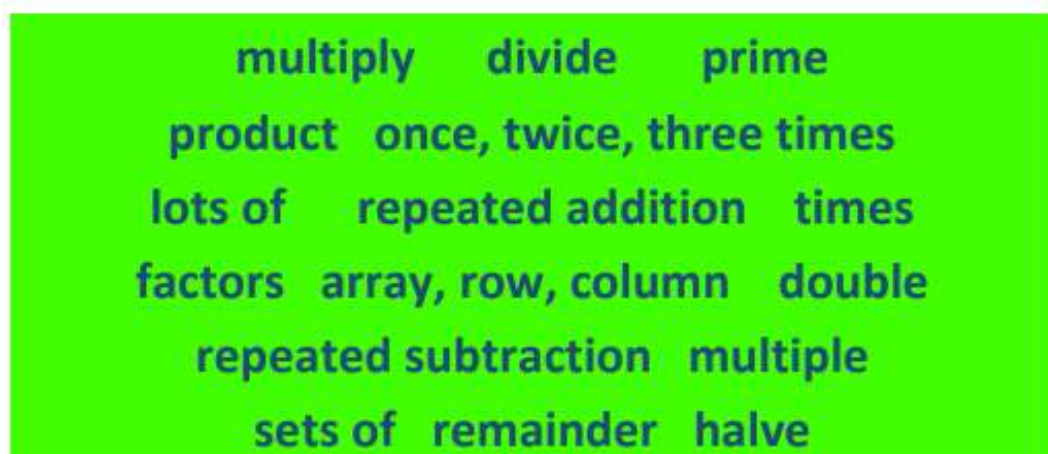
Below are the times tables that children should know as a minimum by the end of each academic year. This is in line with national expectations.

- Reception: When counting objects, children should be able to group in twos, fives and tens and record the total.
- Year 1: Record sequences of twos, fives and tens (e.g. 2, 4 6, 8 etc.) and identify any missing multiples. Know off by heart the doubles and halves of numbers to 12. Draw and use arrays to solve multiplication problems.

By the end of Year 2	By the end of Year 3	By the end of Year 4	By the end of Year 5	By the end of Year 6
2, 5, 10 including division facts.	2, 3, 4, 5, 8, 10 including division facts.	All times tables up to 12 x 12 with division facts.	As Year 4 and related questions e.g. 1/9 of 63 is 7. Knowledge of prime numbers to 19.	As Year 5 and a knowledge of prime numbers below 100. Identify common factors and multiples.

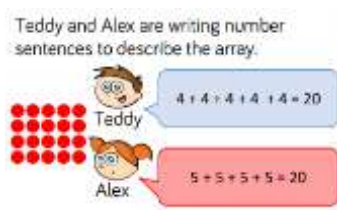
Times Table Vocabulary

Here are some words that may be used whilst learning and applying multiplication and division.



Here are some other words defined:

Array – As shown, an array is a visual representation of multiplication. Shown are 4 rows of 5 with 20 in total.



Groups of/ lots of/ sets of – 3 groups of 5 are 15, 3 lots of 5 are 15, 3 sets of 5 are 15 ($3 \times 5 = 15$).

Multiple - These are the numbers that you find in a times table. E.g. 20 is a multiple of 5, 4, 2 and 10 because it is found in all of those times tables. The multiples of 5 are 5, 10, 15, 20 etc.

Factor – One number is a factor of another if it divides or ‘goes into’ it exactly (without any left over, a remainder). E.g. 6 is a factor of 30 because it goes into it 5 times, but is not a factor of 33 because after dividing there is a remainder of 3.

Product - A product is the answer you get when you multiply two or more numbers together. E.g. the product of 3 and 4 is 12 ($3 \times 4 = 12$).

Prime – A prime number will only divide equally between 1 and itself e.g. 7, 11. The first ten prime numbers are: 2,3,5,7,11,13,17,19,23,29.

Times Tables Top Tips

<u>Zero Times Table</u>	Anything multiplied by zero will always equal zero. Multiplication is repeated addition so 3×0 is $0 + 0 + 0$, which equals 0.
<u>One Times Table</u>	Any number multiplied by one is itself.
<u>Two Times Table</u>	Any number multiplied by two is double the number. $7 \times 2 = 14$ $7 + 7 = 14$ double 7 is 14
<u>Three Times Table</u>	Digits within this times table add up to multiples of 3. For example: 3, 6, 9, 12 ($1+2=3$), 15 ($1+5=6$), 18 ($1+8=9$) 21 ($2+1=3$), 24 ($2+4=6$) etc. The numbers also follow the pattern of: odd, even, odd, even (3,6,9,12).
<u>Four Times Table</u>	The four times table is double the two times table. $4 \times 2 = 8$, $4 \times 4 = 16$, 16 is double 8. Alternatively, the fours can be thought of as double then double again. So double 3 (6) and double 6 (12) is the same as $3 \times 4 = 12$.
<u>Five Times Table</u>	All multiples of 5 end in five or zero. For even numbers (e.g. 8×5) you can halve the number (4) and then put a zero after it (40). For odd numbers (e.g. 7×5) you can subtract one from the number (6), halve it (3) and then put a 5 after it (35). Any odd number times 5 ends in a 5. Any even number times 5 ends in 0.
<u>Six Times Table</u>	The six times table is double the three times table. So, $5 \times 3 = 15$, $5 \times 6 = 30$, 30 is double 15.
<u>Seven Times Table</u>	Combine the 5 and the 2 times table: $7 \times 4 = 28$ or $(5 \times 4) + (2 \times 4) = 28$
<u>Eight Times Table</u>	The eight times table is double the four times table. So, $7 \times 4 = 28$, $7 \times 8 = 56$, 56 is double 28. The units in the multiples of eight also go down in twos: 8, 16, 24, 32, 40, 48, 56, 64, 72, 80 (8, 6, 4, 2, 0, 8, 6, 4, 2, 0).
<u>Nine Times Tables</u>	Fingers can be used to work out the nine times table up to 10×9 . The first finger is put down for 1×9 and the remaining fingers show 9 units ($1 \times 9 = 9$). Then the second finger is put down for 2×9 and the remaining

	fingers show 1 ten (to the left) and 8 units (to the right) which equals 18, and so on. For example: $2 \times 9 = 18$ $3 \times 9 = 27$ $4 \times 9 = 36$ $5 \times 9 = 45$  The digits found in the multiples of nine when added together also equal nine. For example: $9 = 9$, $18 (1 + 8) = 9$, $27 (2 + 7) = 9$, $36 (3 + 6) = 9$, $45 (4 + 5) = 9$ etc. https://www.youtube.com/watch?v=xBTGKiVqWcA
<u>Ten Times Table</u>	All the digits in the ten times table end in zero.
<u>Eleven Times Table</u>	Most of the multiples in the eleven times table are recalled by putting two of the number side by side. $7 \times 11 = 77$, $8 \times 11 = 88$.
<u>Twelve Times Table</u>	The units in the twelve times table go up in twos. 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144 (2, 4, 6, 8, 0, 2, 4, 6, 8, 0). The multiples of 12 are also the multiples of 10 and the multiples of 2 combined.

Learning Times Tables

The key to learning times tables is frequent repetition, regular revision. 5 to 10 minutes every day is better than an hour a week. Here are some examples that we may use in school and parents can also use to help their child memorise their multiplication and division facts:

1. Chanting - When beginning to learn a times table this is key. Repeatedly reading a times table out aloud will help a child become familiar with the multiples for that times table. Try and keep a rhythm, changing vocabulary regularly (two times three is six, two threes are six, two lots of three are six etc.) Clapping or marching may help with keeping the rhythm going. Also counting both forwards and backwards can help with confidence and fluency. Chanting can also be done with a counting stick or numberline to support and also further challenge (with missing numbers) children.



2. Flash Cards - Make a set of cards for the times table being learnt by putting a question on one side of the card ($6 \times 2 =$) and the answer on the reverse (12). Go through the cards reading the question and then turning over to see the answer. Try and say the answer before you turn over. When familiar with the multiplication table, the cards can then be shuffled and used in a random order. Alternatively, children can include the inverse too.

1×2	2
2×2	4
3×2	6
4×2	8
5×2	10
6×2	12
7×2	14
8×2	16
9×2	18
10×2	20

3. Testing and Timing - Make this fun. When a child has become more confident at learning a particular times table, ask them questions on it and see how many they can get correct in a particular time. Alternatively write some questions out of order and get them to time how long it takes to complete the questions. Can they beat their time and score? Making links to the related division facts and fact family is beneficial too.

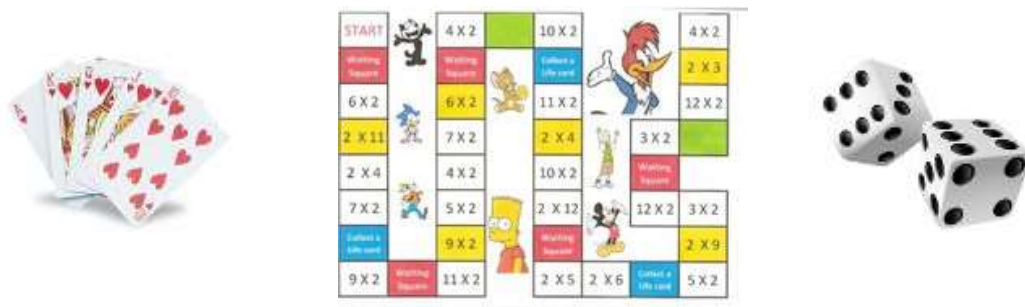
	times 2	times 3	times 4	times 5
2x2=	4x2=	6x2=	8x2=	10x2=
3x2=	4x3=	6x3=	8x3=	10x3=
4x2=	4x4=	6x4=	8x4=	10x4=
5x2=	4x5=	6x5=	8x5=	10x5=
6x2=	6x6=	6x7=	6x8=	6x9=
7x2=	7x6=	7x7=	7x8=	7x9=
8x2=	8x6=	8x7=	8x8=	8x9=
9x2=	9x6=	9x7=	9x8=	9x9=
10x2=	10x6=	10x7=	10x8=	10x9=
11x2=	11x6=	11x7=	11x8=	11x9=
12x2=	12x6=	12x7=	12x8=	12x9=

4. Using a multiplication Square - A multiplication square is particularly useful for establishing the link between multiplication and division facts but can also be used instead of a times table list. When children are more confident with their times table knowledge, a blank multiplication square can be filled in. Time your child to complete their square, or see how many multiples they can complete in a set time. Can they beat their score and time?

Multiplication Square												
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

5. Times Tables Games - Rolling dice and multiplying the numbers together is a good way to compete with each other to get the correct answer first. Two dice can be

rolled at once to create all questions up to 12×12 . Or it can be fun to create your own times table board game!



A similar game can be created with playing cards where two cards are chosen and their values multiplied together. The Jack, Queen and King need to be 11, 12 and 0.

To help with division, each player chooses and writes down five of the following numbers: 5, 6, 8, 9, 12, 15, 20, 30, 40 and 50. Take it in turns to roll a dice and if the number you roll is a factor of one of your numbers, cross it out. E.g. if a 4 is rolled it goes into 8 so cross out 8. If 1 is rolled, you miss a go; if 6 is rolled you get an extra turn. The winner crosses all of their numbers out first.

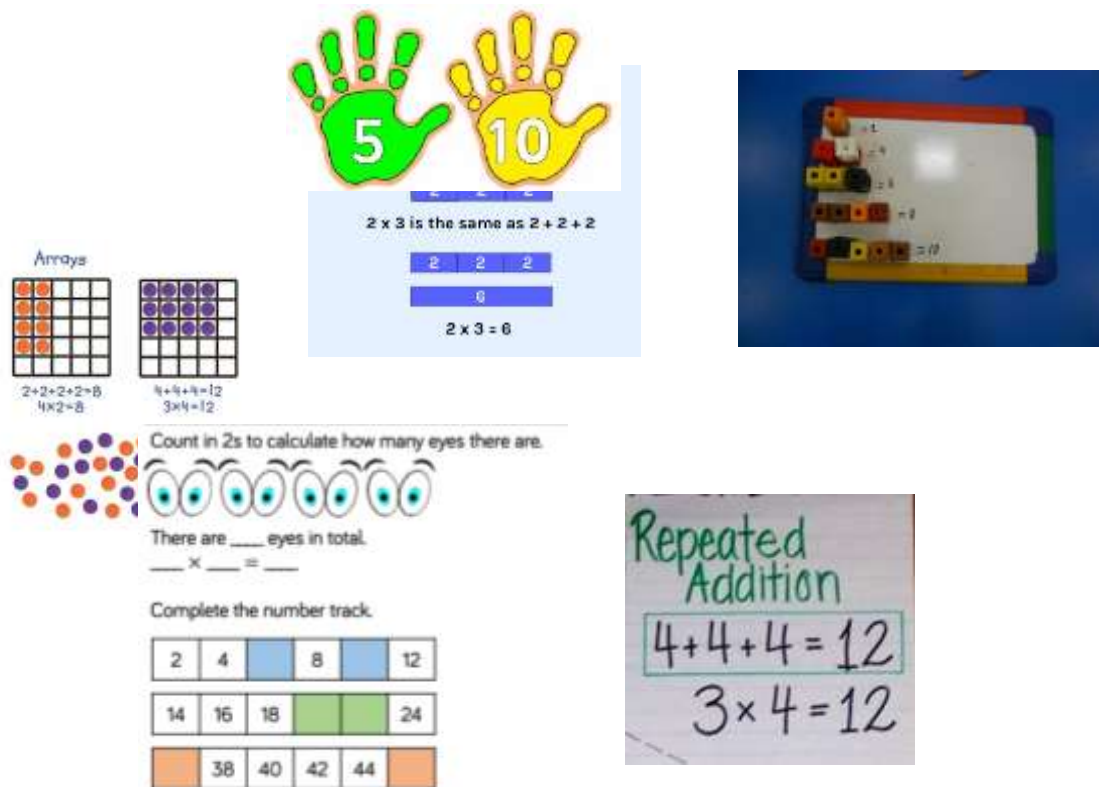
6. Quick Questions Anywhere! - A few questions here and there are much better than hundreds in one go. Try practising: • on the way to school • during an advert break • when getting dressed • before bed.

7. Using models and images – everyday items (fingers, socks, hands etc), arrays, bar models, cubes etc are really useful for ‘seeing’ the times tables before being able to recall and become confident (this links with our calculation policy and how we teach multiplication throughout the school).



How many flowers are there altogether?





8. Times Table Rock Stars - Times Tables Rock Stars is a programme purchased by the school that carefully sequences daily times tables practice. Each week concentrates on a different times table, with a recommended consolidation week for rehearsing the tables that have recently been practised every third week or so. Times tables facts that each pupil is consistently taking longer to answer with get flagged up and then it gradually starts to present these facts more frequently until pupils have mastered them. It will also ask related division questions 20% of the time in order to reinforce division facts.



9. Online Resources - There are many free multiplication and division games available online. Just use the search engine to uncover them all. Here are a few places to get you started:

www.multiplication.com

www.coolmath-games.com

<http://www.oswego.org/ocsd-web/games/Mathmagician/mathsmulti.html>

http://www.transum.org/Tables/Times_Tables.asp

www.tablestest.com

www.mathletics.co.uk