

The Importance of Times Tables

Knowing times tables facts is crucially important to your child's progression in their mathematics education. Without a thorough understanding of multiplication and division facts, children frequently get 'lost' when it comes to do anything with fractions and any multiplication or division with larger numbers. Many mental maths activities and tests require a quick recall of multiplication and division facts. Children who are secure in their times tables knowledge are able to get to grips with trickier tasks straight away and are far more successful.

However it is worth noting that it is not simply learning by rote but being fluent with times tables. A child who knows their times tables will be able to recall any of the multiples of a times table out of order within approximately 3 seconds, as well as know the corresponding division facts i.e. $4 \times 6 = 24$ as well as $24 \div 6 = 4$.

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

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 12×12 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 Tables Vocabulary

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

multiply divide prime
product once, twice, three times
lots of repeated addition times
factors array, row, column double
repeated subtraction multiple
sets of remainder halve

Here are some of the trickier words defined:

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.

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.

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.

Array – As shown, an array is a visual representation of multiplication. Shown are 3 rows of 5 with 15 in total.



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.

1. Chanting: When beginning to learn a times table this is key. Repeatedly reading a times table out aloud will help your 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.

2. Flash Cards: Make a set of cards for the times table being learnt by putting a question on one side of the card ($6 \times 5 =$) and the answer on the reverse (30). Go through the cards reading the question and then turning over to see the answer.

3. Testing and Timing: Make this fun. When your 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?

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.

5. Times Tables Games : Bingo is a great way of learning times tables as a family. Write 6 multiples from a particular times table down in a grid and the caller reads out questions from the same multiplication table.

Rolling dice or using playing cards and multiplying the numbers together is a good way to compete with each other to see who can get the correct answer first.

Here are just a few ideas. If you create any of your own or find some really good ones, please let us know!

Top Times Table Hints

It may seem a daunting task to learn so many multiplication facts, but because of the commutative property of multiplication, there are fewer facts than you may think. For example, 3×4 and 4×3 give the same answer so you need to only learn this once.

Zero Times Table

Anything multiplied by zero will always equal zero. Multiplication is repeated addition so 3×0 is $0 + 0 + 0$, which equals 0.

One Times table

Any number multiplied by one is itself.

Two Times Table

Any number multiplied by two is double the number

$7 \times 2 = 14$ $7 + 7 = 14$ double 7 is 14

Three Times Table

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).

Four Times Table

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 double. So double 3 (6) and double again (12) is the same as $3 \times 4 = 12$.

Five Times Table

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.

Six Times Table

The six times table is double the three times table.

So $5 \times 3 = 15$, $5 \times 6 = 30$, 30 is double 15.

Seven Times Table

Combine the 5 and the 2 times table: $7 \times 4 = 28$ or $(5 \times 4) + (2 \times 4) = 28$

Eight Times Table

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).

Nine Times Tables

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.

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.

Ten Times Table

All the digits in the ten times table end in zero.

Eleven Times Table

Most of the multiples in the eleven times table are recalled by putting two of the number side by side.

$7 \times 11 = 77$, $8 \times 11 = 88$.

Twelve Times Table

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.