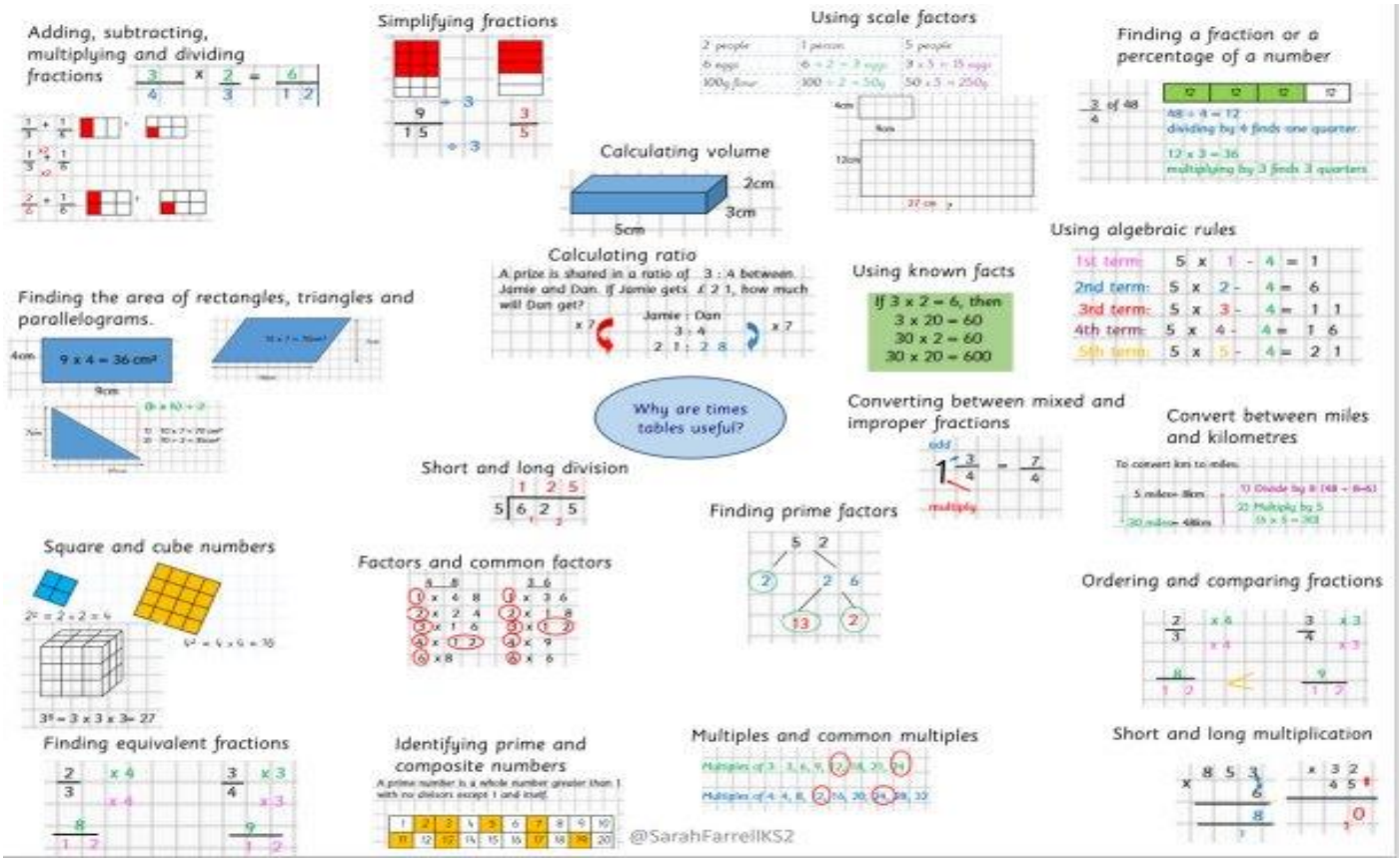
LEARNING TIMES TABLES

Why do children need to learn times table facts?

Knowing times tables facts is crucially important to your child's progression in their mathematics education. Many areas of the Maths curriculum, particularly in Upper Key Stage 2, are built upon a sound understanding of multiplication and division (fractions, ratio, even shape and measurement). Without a thorough understanding of their times tables, children frequently get 'lost' when it comes to learning new concepts and strategies. Children who are secure and fluent within their times tables can get to grips more quickly with trickier tasks and are far more successful. If children can achieve 'automaticity' when it comes to recalling times table facts by the end of Year 4, this frees up their working memory to focus on reasoning and problem-solving within mathematics.



What do we mean by 'knowing' times tables?

A child who knows their times tables will be able to recall any of the multiples of a times table in a random order within 3 seconds. They will also be able to recall the corresponding division facts:

4 x 6 = 24

6 x 4 = 24

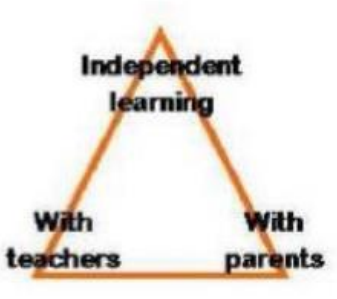
24 ÷ 4 = 6

24 ÷ 6 = 4

This leaves no time for 'counting up' to find the answer. This may sound tricky, but this level of number fluency is essential if children are to cope with the demands of the mathematics curriculum when they reach Upper Key Stage 2.

Why does my child need to practise at home?

Learning times tables are most effective when there is a collaboration with school, parents and children. In school, we regularly spend time learning times tables, but children will be much more successful if they practise outside of school independently and alongside parents.



What times tables should I be practicing at home and when?

Year 3

Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Counting in 2, 5 and 10	X and ÷ facts for 0 & 1		X and ÷ facts for 2, 5 and 10			X and ÷ facts for 3		X and ÷ facts for 4		X and ÷ facts for 8

Year 4

Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Secure on 2, 5, 10, 3, 4, 8	X and ÷ facts for 6 & 12		X and ÷ facts for 7 & 9		X and ÷ facts for 11					

However, without regular practise, the children can easily forget their times tables facts so even after they know them all by the end of Year 4 they will need to keep practicing.

How can I help my child at home?

The key to learning times tables is frequent, regular repetition. 5-10 minutes per day is ideal, rather than one long session per week. Stick to one times table at a time to minimise confusion and have this on display in your home as a visual aid. Here are some ideas to help your child learn their times tables at home:

Times Tables Rock Stars

Don't forget that each child has a TTRS account. Encourage them to log on **at least three times per week for a quick-fire round of questions**. Guidance specifically about how TT Rockstars works is at the end of this booklet.

Chanting

When beginning to learn a times table, this is the key. Repeatedly reading a times table aloud will help your child become familiar with the multiples and help commit them to memory. Try and keep a rhythm (clapping and marching can help with this) and change vocabulary regularly:

*Two times three is six

*Two threes are six

*Two lots of three are six

Flash Cards

Help your child to make a set of flashcards for the times table being learned by putting a question on one side of the card (6 x 5 =) and the answer on the reverse (30). They can use colours and images on the cards. Go through the cards, read the question, and then turn over to see the answer. Try and say the answer before you turn the card over. When familiar with the multiplication table, the cards can then be shuffled and used in a random order. See our school website for ready-made flashcards.

Testing and Timing

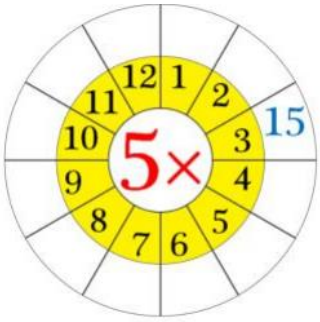
When your child has achieved a level of confidence with a certain times table, ask them questions and see how many they can get right within a certain time limit. Alternatively, write times table questions out in random order and time how long it takes them to complete the questions. Can they improve upon their time and score? See the following website for a range of fun, interactive timers https://www.online-stopwatch.com/classroom-timers/

Using a multiplication square

A multiplication square is particularly useful for establishing the link between multiplication and division facts. When children are more confident with their times table knowledge, a blank multiplication square can be filled in. Time your child to see how long they take to complete their square or see how many multiples they can complete in a set time. Can they beat their score and time? See our school website for complete and blank multiplication squares.

Number wheel

Create a number wheel like the one below and see how quickly they can fill it in. To make it a fun challenge, mix up the numbers 1-12 in yellow.



How can I make learning times tables fun?

Try playing some of these games to help your child learn at home. If you think of any other fun games, please let us know so we can add them to the list!

Bingo

Write four multiples from a particular times table in a grid and the caller reads out questions from the table. The winner is the first person to have all four of their numbers called out.

Splat

Two players stand back-to-back, holding a pretend water gun . . . or a real one if you are feeling adventurous! A caller reads out a times table question. Players spin around and 'splat' their opponent with the answer. Who can be the first to get five questions correct?

The Dice Game

Roll two dice and multiply the numbers together. Shout out the answer as quickly as you can. Who can be the first player to get five questions correct?

Rock, Paper, Times Table!

Just like 'Rock, paper scissors', except you say 'Times Table Challenge'. On the word 'challenge', each child reveals a number with their fingers. For example, player one might hold up seven fingers and player two might hold up two fingers. The calculation that needs to be solved is 7 x 2. The first player to shout out the answer wins the round.

Crazy Card Calculations

Remove the picture cards from a deck of playing cards and deal the remaining cards equally between two children. Each player turns over a card simultaneously and places it facing upwards so both players can see. Mentally multiply the two numbers together and shout out the answer as quickly as possible. The child who gets the answer correct first takes the two cards and adds them to the bottom of their pile.

Number Run

Pick a times table. Display the answers to the times table questions around the room or garden. Call out a question and children have to run to the answer. The first child to reach the answer wins.

Keep Fit Challenge

Getting children active is proven to help learning, so instead of just asking your child to recite their tables, encourage them to jog on the spot and do different aerobic moves in time to saying them out loud. As exercise helps mood and concentration, it should make the sessions more fun and effective.

Dominoes

One player turns over a domino. All players multiply the two numbers together and shout out the answer as quickly as they can.

Hopscotch

Make a hopscotch and write in the numbers of the times table you are learning.

Quick question anywhere

Fire questions at your children anywhere and everywhere! Take them by surprise and see how quickly they can respond

Are there any 'handy hints' I should be sharing with my child?

Here are some tricks, visuals and rhymes to help act as memory aid for each times table

Zero Times Table: the answer is always zero

- Anything multiplied by zero will always equal zero e.g. 3 x 0 = 0, 6 x 0 = 0

One Times Table: the one you already know

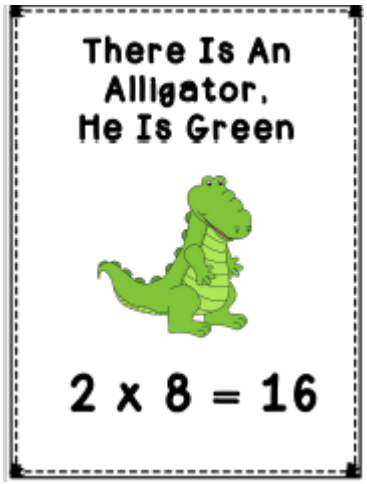
- Any number multiplied by one is itself e.g.

Think about: 1 times 5 =5, 1 times 7 = 7, 1 times 3 million = 3 million! SO anything multiplied by one is itself; how easy is that?

Two Times Table

- All numbers in the 2 times table are even.

- Any number multiplied by two is **double** the number e.g. 7 x 2 =14 and double 7 is 14.



(0	×	2	=	0)
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
11	×	2	=	22
12	×	2	=	24

Pattern = 0 2 4 6 8 repeated

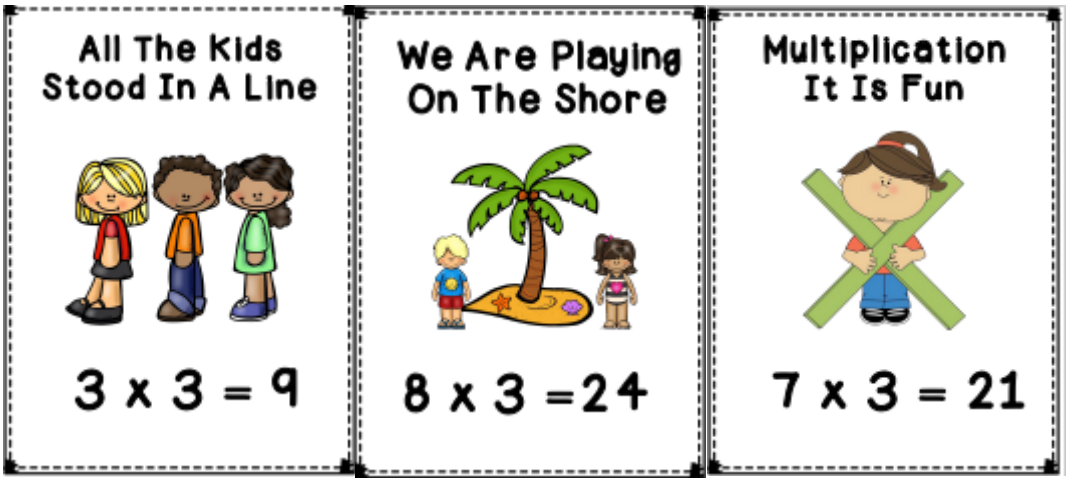
Including 0 × 2, the digits 0 2 4 6 8 repeat over and over again in the units column: 0 2 4 6 8, 0 2 4 6 8. The digit in the tens column goes up 1 each time this string starts again.

Another pattern for the 2 times table is **counting in steps of 2**: count a number, miss a number, count a number, miss a number and so on.

Three Times Table

- The answers follow a pattern of odd, even, odd, even etc

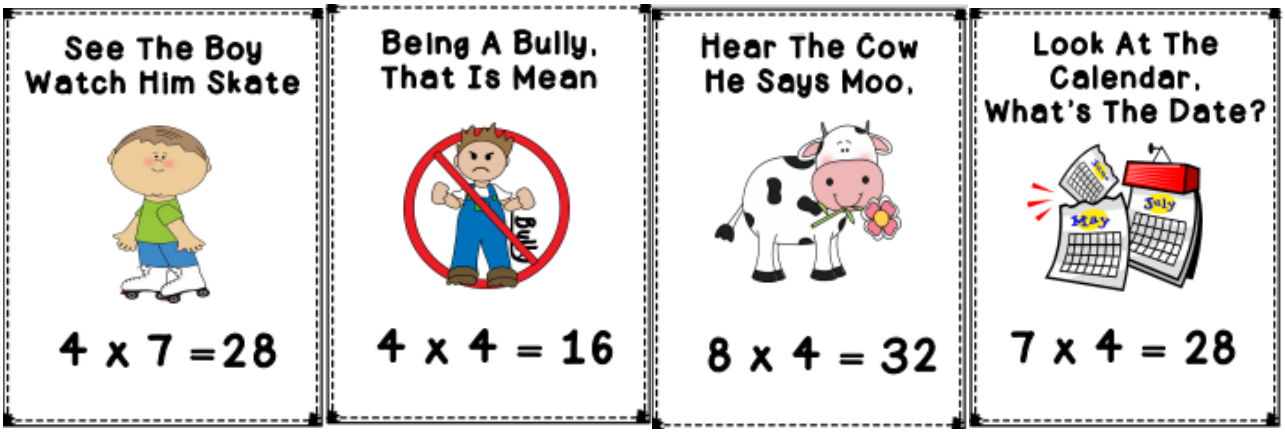
- Digits within this table add up to multiples of 3. For example: 3, 6, 9, 12 (1+2=3), 15 (1+5=6), 18 (1+8=9) 21 (2+1=3), 24 (2+4=6) etc.



Four Times Table

- All numbers in the 4 times table are even.

- All the numbers are double the answer in the two times table.



Five Times Table

- Half the tens

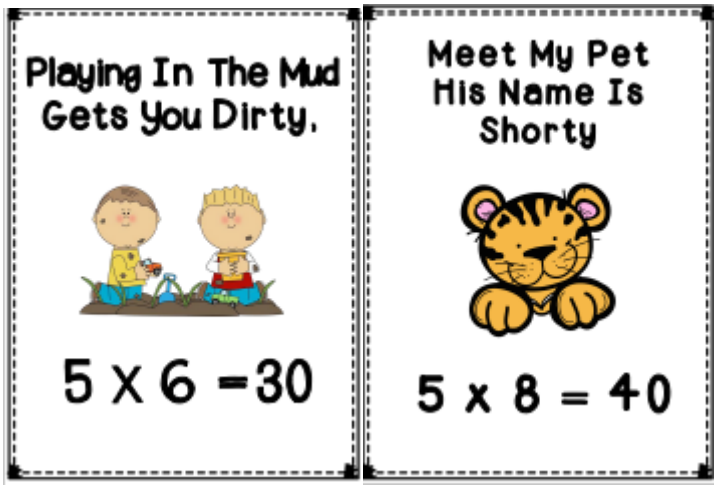
Trick: Five is Half of Ten ! Think about this: Because 5 is half of 10, we can work out our 5s by halving our 10s.

So – if 6 x 10 = 60 , then 6 x 5 is half of 60 (30).

Look at this pattern:

To sum up: "to find 5 times any whole number, add a zero and halve". So, work on this pattern until you know your 5 times table, without counting.

Ten times table	Halved
1 x 10 = 10	1 x 5 = 5
2 x 10 = 20	2 x 5 = 10
3 x 10 = 30	3 x 5 = 15
4 x 10 = 40	4 x 5 = 20
5 x 10 = 50	5 x 5 = 25
6 x 10 = 60	6 x 5 = 30
7 x 10 = 70	7 x 5 = 35
8 x 10 = 80	8 x 5 = 40
9 x 10 = 90	9 x 5 = 45
10 x10 = 100	10 x 5 = 50

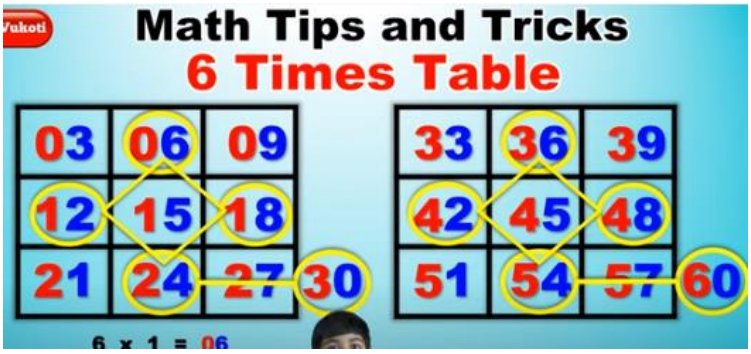


*All numbers in the 5 times table end in a five or a zero.

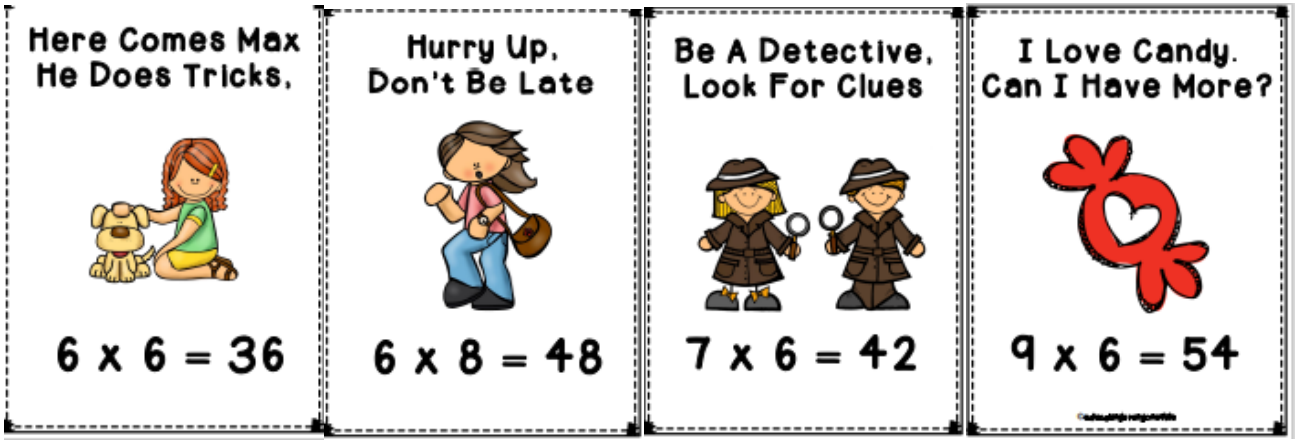
• Any odd number multiplied by five ends in a 5; any even number multiplied by 5 ends in a 0.

Six Times Table

• All numbers in the 6 times table are even.

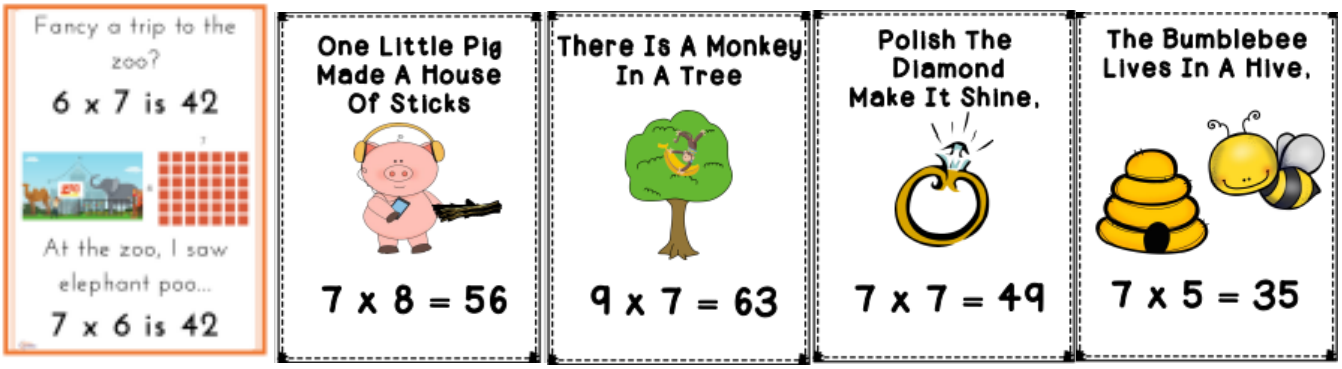


- The Secret of Six-cess: the trick: https://www.youtube.com/watch?v=s8j11wwIds8
- 6 times any even digit will always end in that digit: 6 x 2 = 12 6 x 4 = 24 6 x 6 = 36 6 x 8 = 48



Seven Times Table

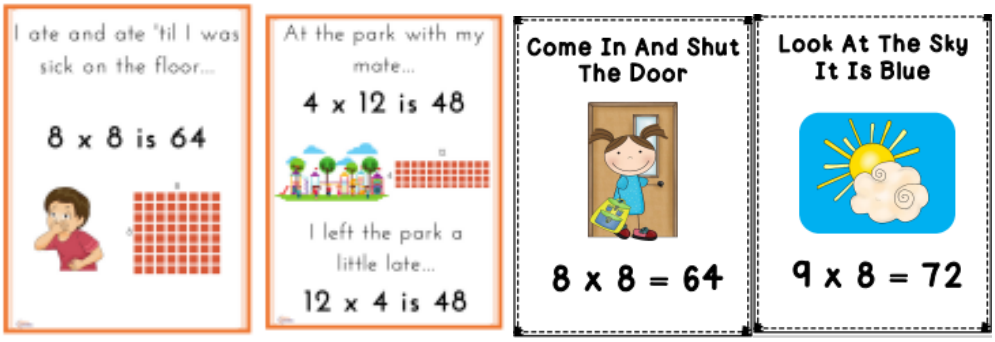
• The answers follow a pattern of odd, even, odd, even etc …



Eight Times Table

- Double the Four times tables
- All numbers in the 8 times table are even

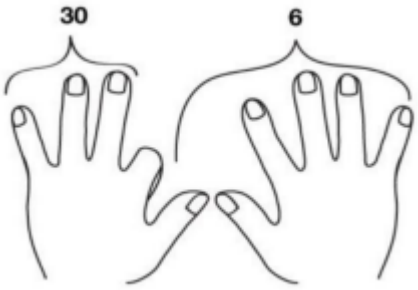
• The digits in the unit column go down in twos. 8, 16, 24, 32, 40, 48, 56, 64, 72, 80 (8, 6, 4, 2, 0, 8, 6, 4, 2, 0).



Nine Times Table

• The digits found in the multiples of 9 can be added together to make 9: 9 (9 + 0 = 9) 18 (1 + 8 = 9) 27 (2 + 7 = 9) 36 (3 + 6 = 9) 45 (4 + 5 = 9) 54 (5 + 5 = 9) 63 (6 + 3 = 9) 72 (7 + 2 = 9) 81 (8 + 1 = 9) 90 (9 + 0 = 9) 99 (9 + 9 = 18; 1 + 8 = 9) 108 (1 + 0 + 8 = 9)

• You can use your fingers to help you work out the 9 times table



1. Hold both of your hands out with palms facing away from you

2. Number the fingers from left to right as 1 to 10

3. Hold down the finger of the number you want to multiply by 9. Here is this example, we are multiplying 9 by 4, so the fourth finger is held down:

4. The fingers to the left are the tens and the fingers to the right are the units: 4 x 9 = 36

- Work out the 10 times table and take away the number you are multiplying by e.g. 4 x 9 = 4 x 10 = 40 and then takeaway 4 = 36

Ten Times Table

- All the digits in the ten times table end in a zero

Trick: Adding a Zero Gives us the 10 times table!

Think about: 10 times 5 =50, 10 times 6 = 60, 10 times 3 = 30 SO any whole number multiplied by ten stays the same, but adds a ZERO at the end; this is to do with 'Place Value': the columns in which digits are placed in to create longer numbers.

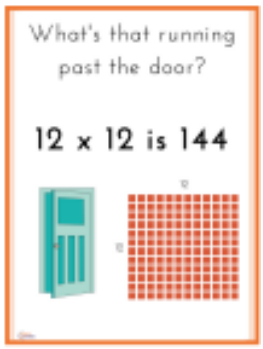
Eleven Times Table

- Most of the multiples in the eleven times table are recalled by putting two of the number side by side: 2 x 11 = 22 7 x 11 = 77 8 x 11 =88

Twelve Times Table

- All numbers in the 12 times table are even

- The digits in the unit column go up in twos: 12, 24, 36, 48, 60, 72, 84, 96, 108, 120, 132, 144



Times Tables Vocabulary

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

multiply divide prime
product 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 x 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 x 4 = 12).

Square number- A whole number multiplied by itself for example: 4 × 4 = 16, so 16 is a square number

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.

We use TT Rockstar for our maths homework. This has been proven to make an effective impact on children's understanding of their times table and ability to apply them. The recommendation is the 'little and often' approach of a few minutes each day 4/5 times a week is a great target to aim for.

Why and how TT Rockstars work?

https://www.youtube.com/watch?v=-ZxZbRVvbYM

What are the different Game Modes?

Single Player	
Jamming 4 or 8 coins/correct answer	The only game mode without a timer, players chose the table and operation (× or ÷ or both) they want to practise. Answer 10, 20 or 30 questions.
Gig 10 coins per correct answer	Gig games last 5 minutes and contain up to 100 questions, which come in 'waves', starting with the 10s, then the 2s, 5s, 3s, 4s, 8s, 6s, 7s, 9s, 11s and 12s. Novices are not expected to get past the 5s. Gigs provide the child (and their teacher) with a simple measure of their current skills, which is why learners should concentrate fully for the whole Gig as they won't get another try until next month.
Garage 10 coins per correct answer	Players are given a personalised set of 6 multiplication questions (and their matching division questions) in each round. The questions they get keep adjusting to provide the best fit for every learner's needs. This is probably the best game made for improving their recall while they're still learning.
Studio 1 coin per correct answer	Here your child earns their Rock Status, which is based on their Studio Speed. The faster they are the better their status. Studio Speed is the average of their most recent 10 Studio games. Suitable for confident players.
Soundcheck 5 coins per correct answer	Soundcheck games ask 25 multiplication questions (up to 12×12), allowing 6 seconds for each question. Suitable for confident players.
Multi Player	
Festival 1 coin per correct answer	Children compete against others from around the world, with their identities protected behind their rock names. Suitable for confident players.

Arena 1 coin per correct answer	Children race against other members of their class who are logged in and choose the same arena name at the same time. Arena games use the same smart question algorithm as Garage games.
Rock Slam 1 coin per correct answer	Players challenge their classmates or teachers to answer as many questions as they can in 60 seconds, setting a score for the challengee to beat. Pupils don't need to be online at the same time.
Tournaments	**Battle of the Bands** – groups of children within the same school (usually classes, year groups or teams) compete to have the highest *average* score per player. **Top of the Rocks** – like a Battle of the Bands *between* schools. The winning class or school is the one with the most correct answers per person. **Important**: Each correct answer (in any game mode) earns 1 point towards the team's total in addition to the coins earned. For example, in Garage games each correct answer is worth 1 point for the team and 10 coins for the player.

This video showing what each of the game types above with images of what they looks like and how they work:
https://www.youtube.com/watch?v=jWAn_JxMrWo

Learners with different needs

How can I hide the timer?	Start a game and press ⚙ > Hide Practise Clock. You could also play a game in Jamming.
How can I increase the length of Garage games?	Single player > Garage > press the little arrow below "play solo" > choose 1, 2 or 3 minutes.
The tables are too hard	Make sure your child is playing in Garage or Arena game modes. If this does not resolve the issue, please speak to your child's teacher. Remember that Jamming mode allows the child to choose the tables themselves.
My child gets anxious	Try the three above plus: setting mini goals (e.g. complete 2 minutes today, get 1 more point in the next game, pass 1 level); having a break from online play (come back in a couple of days); and reminding them of Baz's words: "A good rock star stays chillaxed by accepting they make mistakes."
My child has visual impairments; what settings are available?	Head to the Profile page where you can: change the colour scheme; reduce the visual stimuli with Declutter mode; increase the font size or switch to a dyslexia-friendly font called Lexie. play.ttrockstars.com is also screen reader compatible.
Can I turn off division?	Yes in Jamming mode but not in the other games. The reason for that is that practising multiplication and division at the same time supports the recall of both and is the most successful approach. If your child is finding division confusing, please speak to their teacher about starting with the 10s only and for advice on how to help at home.

Troubleshooting

My child's coins and/or Studio speed have suddenly dropped	Another child may have logged in as your child. Please reassure your child that this can be rectified. Contact their teacher.
What does the 🎧 mean?	If this symbol appears over a game tile (e.g. over Garage) it means the teacher has set your child a certain number of minutes to practise in that game mode for homework. Once they complete those minutes the other games unlock.

Any other problems, please let the class teacher know and we can try and resolve them or contact the company if needed.

Other online resources you might want to use for a change:

https://www.topmarks.co.uk/maths-games/hit-the-button

https://tablestest.com/

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

https://www.coolmathgames.com/1-number-games

Times Tables

1 x 1 = 1 2 x 1 = 2 3 x 1 = 3 4 x 1 = 4 5 x 1 = 5 6 x 1 = 6 7 x 1 = 7 8 x 1 = 8 9 x 1 = 9 10 x 1 = 10 11 x 1 = 11 12 x 1 = 12	1 x 2 = 2 2 x 2 = 4 3 x 2 = 6 4 x 2 = 8 5 x 2 = 10 6 x 2 = 12 7 x 2 = 14 8 x 2 = 16 9 x 2 = 18 10 x 2 = 20 11 x 2 = 22 12 x 2 = 24	1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 4 x 3 = 12 5 x 3 = 15 6 x 3 = 18 7 x 3 = 21 8 x 3 = 24 9 x 3 = 27 10 x 3 = 30 11 x 3 = 33 12 x 3 = 36	1 x 4 = 4 2 x 4 = 8 3 x 4 = 12 4 x 4 = 16 5 x 4 = 20 6 x 4 = 24 7 x 4 = 28 8 x 4 = 32 9 x 4 = 36 10 x 4 = 40 11 x 4 = 44 12 x 4 = 48
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