

Advice for parents on teaching times tables

Times tables require a lot of memory work. Repetition is one key to memory.

Another key to memory is recognising patterns.

Rules and patterns

The 2 Times table: All the numbers in the 2 times table are even and so have to end in 0, 2, 4, 6 or 8.

The 3 Times table: When you add up the digits of multiples of 3, you get a 3-6-9 pattern.

Eg. $4 \times 3 = 12$ and $1 + 2 = 3$. $5 \times 3 = 15$ and $1 + 5 = 6$. $6 \times 3 = 18$ and $1 + 8 = 9$.

The 4 Times table:

1. If you know how to double a number, this one is easy.
2. Simply, double a number and then double it again!

The 5 Times table: The answers can only end in 5 or 0. Five times an odd number ends with 5, and five times an even number ends with 0.

The 6 Times table: Since the answers are always even, the last digit must always be 0, 2, 4, 6 or 8.

If you add the digits together, and do that again and again, you'll eventually get 3, 6 or 9. For example:

- $6 \times 1 = 6$...
- $6 \times 2 = 12$, and $1 + 2 = 3$...
- $6 \times 3 = 18$, and $1 + 8 = 9$...
- $6 \times 4 = 24$, and $2 + 4 = 6$...
- $6 \times 5 = 30$, and $3 + 0 = 3$...
- $6 \times 6 = 36$, and $3 + 6 = 9$...
- $6 \times 7 = 42$, and $4 + 2 = 6$...
- $6 \times 8 = 48$, and $4 + 8 = 12$, and $1 + 2 = 3$...
- $6 \times 9 = 54$, and $5 + 4 = 9$...
- $6 \times 10 = 60$, and $6 + 0 = 6$...
- $6 \times 11 = 66$, and $6 + 6 = 12$, and $1 + 2 = 3$...
- $6 \times 12 = 72$, and $7 + 2 = 9$...

The 7 Times table: Encourage children to learn $7 \times 7 = 49$ and use this mid-point to work forwards and backwards.

The 8 Times table: The last digit will be 8, 6, 4, 2 or 0 and this pattern will continue in this order.

The 9 Times table:

1. Hold your hands in front of you with your fingers spread out
2. For 9×3 bend your third finger down. (9×4 would be the fourth finger etc.)
3. You have 2 fingers in front of the bent finger and 7 after the bent finger.
4. Thus the answer must be 27.
5. This technique works for the 9 times tables up to 10.

Also, if you add the digits together, they will always add up to 9.

- $9 \times 1 = 9,$
- $9 \times 2 = 18, 1+8=9$
- $9 \times 3 = 27, 2+7=9$
- $9 \times 4 = 36, 3+6=9$
- $9 \times 5 = 45, 4+5=9$
- $9 \times 6 = 54, 5+4=9$
- $9 \times 7 = 63, 6+3=9$
- $9 \times 8 = 72, 7+2=9$
- $9 \times 9 = 81, 8+1=9$
- $9 \times 10 = 90, 9+0=9$
- $9 \times 11 = 99, 9+9=18,$
 $1+8=9$
- $9 \times 12 = 108, 1+0+8=9$

The 10 Times table: The answer always ends in 0. You can tell children to 'add a zero' to get the answer, as long as they understand this means the number is getting 10 times bigger.

| X | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|----|---|----|----|----|----|----|----|----|----|-----|-----|-----|-----|
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3 | 0 | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4 | 0 | 4 | 8 | 12 | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6 | 0 | 6 | 12 | 18 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7 | 0 | 7 | 14 | 21 | 28 | 35 | 42 | 49 | 56 | 63 | 70 | 77 | 84 |
| 8 | 0 | 8 | 16 | 24 | 32 | 40 | 48 | 56 | 64 | 72 | 80 | 88 | 96 |
| 9 | 0 | 9 | 18 | 27 | 36 | 45 | 54 | 63 | 72 | 81 | 90 | 99 | 108 |
| 10 | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 |
| 11 | 0 | 11 | 22 | 33 | 44 | 55 | 66 | 77 | 88 | 99 | 110 | 121 | 132 |
| 12 | 0 | 12 | 24 | 36 | 48 | 60 | 72 | 84 | 96 | 108 | 120 | 132 | 144 |

The 11 Times table:

Multiply 11 by 3 to get 33, multiply 11 by 4 to get 44 etc. Each number to 10 is just duplicated.

You may want to teach children the patterns described above or you may feel they may gain more out of searching for the patterns themselves using the multiplication grid provided.

Seeing the Patterns

Use a multiplication grid or let your children create one.

Look carefully at all of the patterns, especially when the numbers correspond with the facts e.g., 7×8 and $8 \times 7 = 56$.

Let children practice the 'fast adding' (which is what multiplication is).

When students can count by 3s, 4s, 5s 6s, etc. they will automatically know their multiplication tables.

Games and websites

Deck 'Em!

1. Use a deck of playing cards for a game of Multiplication War.
2. Flip over the cards as though you are playing Snap.
3. The first one to say the fact based on the cards turned over (a four and a five = Say "20") gets the cards.
4. The person to get all of the cards wins!
5. Children learn their facts much more quickly when playing this game on a regular basis.

Multiplication bingo

1. Children draw a 6x6 grid on a piece of paper and write numbers from a times table that they are learning.
2. Adult to call out times table questions.
3. Children to work out the answer and cross it off their grid if it is there.
4. The aim is to have all numbers crossed out to achieve bingo.

Who Wants to be a Millionaire?

1. Ask children multiplication questions
2. Give them multiple choice answers
3. Allow them to use phone a friend/ 50/50 and ask the audience so that children feel they are playing a game.

Keep Rolling

1. Give children two dice
2. Give children a 2 minute timer
3. Children to roll the dice and multiply the numbers the die land on
4. How many questions can the children answer in 2 minutes?

- **Multiplication Worksheet Gallery** - <http://math.about.com/od/multiplication/ig/Times-Tables-Worksheets/>
- **More practise sheets** - <http://www.homeeducationresources.com/FREEmath.htm>

- **1 Minute Timestables Tests** - <http://math.about.com/cs/multiplication/a/multws.htm>
- **Online games** - <http://www.free-training-tutorial.com/times-tables-games.html>
- **Games and tricks** - http://www.transum.org/Tables/Times_Tables.asp
- **Games and sheets** - http://www.teachingideas.co.uk/maths/contents_multiplicationdivision.htm
- **More games and sheets** - <http://www.teachingtables.co.uk/>
- **More tips** - <http://www.mathcats.com/grownupcats/ideabankmultiplication.html>
- **Printable flashcards** - <http://www.coolmath4kids.com/times-tables/math-flash-cards-multiplication.html>

Multiplication Rhymes and Stories

You can encourage your child to make up silly sayings to remember the hard ones.

Eg. $8 \times 8 = 64$ "Had two 8's, dropped them on the floor, picked them up, had 64."

Eg. $4 \times 4 = 16$ "A 4 by 4 is a mean machine, I'm going to get one, when I'm 16."

Singing songs to the times tables also works for some children!

Teaching points:

- Remind children that if they know 5×7 , they also know 7×5 . Encourage them to use what they know, they can use their knowledge of 5×7 to work backwards to calculate 4×7 and forwards to calculate 6×7 .
- **Allow children to learn the tables in order of difficulty. First, learn tables 1 and 10, then tables 2 and 5. Next 4, 6 and 8. Then 9, 3 and 7.**

Note, Maths framework states that the following times tables should be learnt:

KS1: 1/2/5/10

Year 3: 1/2/3/4/5/6/10

Year 4: All times tables up to 12×12 .

Golden Rule: Whatever you do, make sure your children enjoy it.

If they struggle to understand, make mistakes, or get bored: keep calm, make it easier, change the subject, tell them a joke, play football, go to the park but please don't get cross or impatient - you could put them off mathematics for life.

Generally, the advice is:

- Talk about and involve children in the situations in which you use maths in everyday life;
- Play games involving numbers and/or logic, such as card games, dominoes, darts, draughts, chess etc.;
- Stimulate their thinking at times of boredom, (such as when travelling), with mental activities