



# Tips for Helping Children Learn Math Facts

It is extremely difficult to teach students higher order math skills when they are not fluent with their basic facts (addition, subtraction, multiplication and division). If children are not automatic in responding to math facts, their attention is necessarily taken away from the multiple steps necessary to solve more complex problems, causing them to become distracted in solving the problem by having to figure out the answers to facts. If children are not automatic with math facts, it often results in simple, computation errors in higher grade level math. Getting those facts down early is so important!

5

## Mastery - Automaticity

Automaticity is the ability to say the answer to a problem immediately after reading the fact. There should be no hesitation.

6

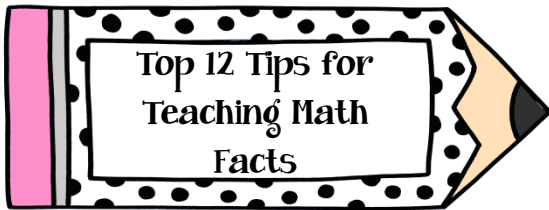
## Set Realistic Goals

It takes time to learn new things. It is important to set goals, but they need to be realistic. Break goals down into what is manageable for your child and that still challenge them.

7

## A Routine For Daily Practice Is Essential

Practice is most effective when it is done regularly. A regular, daily routine is necessary in order to help accomplish this goal.



## Top 12 Tips for Teaching Math Facts

1

### Teach a Limited Number of Math Facts at a Time

There is a big difference between figuring out the answer and memorizing facts. If children have too many facts to learn at one time, they necessarily fall back on figuring out the answer. Instead, we want students to REMEMBER the answers without having to figure them out.

2

### Only Add More Facts As The Previous Set Has Been Mastered

Once students have mastered learning a set of facts, it is now possible to add two or three more facts to be learned. Student success is greatest when there are only two or three new things to add to the sea of material they have already mastered.

3

### Practice Should Be Cumulative

Practice should be set up in a way where facts that have already been learned continue to appear along with the two or three new facts that are being added.

4

### "Memorize" Facts In A Way That Forms A Verbal Chain

Students should always practice the facts by saying the whole problem AND the answer aloud. In this way, a verbal chain is created. As a result of this kind of practice, students hear/see  $8 \times 7$  and can't stop from saying/writing 56.

8

## Have A Routine For Corrective Feedback

The absence of feedback can be considerably more harmful to students because it causes children to experience greater amounts of frustration and failure, therefore learning a new skill takes a great deal more practice. Clear, corrective feedback has a positive effect because it shows students how they can be more successful.

9

## Practice Sessions Should Be Short

Students cannot maintain focus on drill for more than 2-4 minutes at a time. Practice sessions can occur more than one time during the day, but should remain short.

10

## Create a Process For Progress Monitoring

If students are really learning math facts, the number of facts they can answer within a set time period should gradually increase. Periodically, students should be given a timed test of all the facts in the operations they are learning to see if their fluency is improving.

11

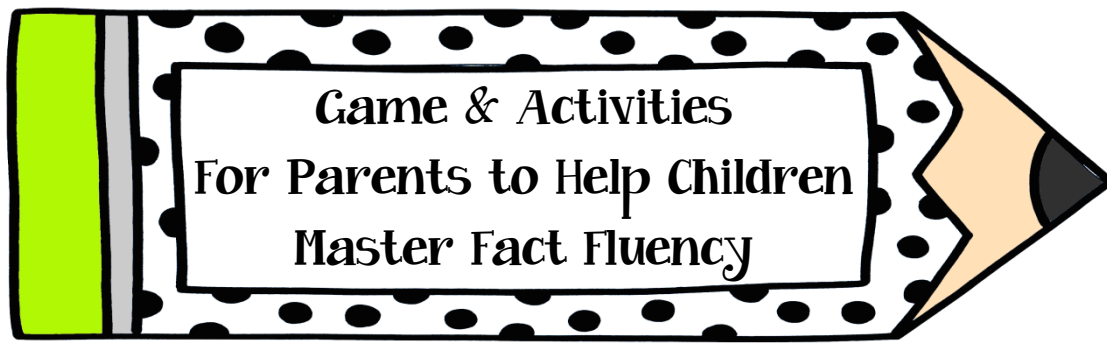
## Future Success - Know ALL Facts By 4<sup>th</sup> Grade

Fractions demand instantaneous recognition of multiplication facts, these must be mastered before fractions can be successfully learned.

12

## CELEBRATE SUCCESS!

Students will be motivated to learn math facts if you act like it is important. Finding ways to celebrate success is the best way to demonstrate the importance of learning math facts!



# Math + Me --- FUN

## Practice While You Wait

Waiting in line? Sitting in traffic? Practice counting by 2's, 3's, 4's, etc.

## Sing Them

Come up with songs or raps to go along with the facts. Try Schoolhouse Rock, find videos on YouTube.

## Games You Can Print & Play

<https://schoolwire.shenryk12.gaus/Page/21865>

## Tricks

Tricks can work pretty well, especially for hard to remember facts. For example, multiplying a number times 2 is the same as the double of the number in addition  $7 \times 2 = 7 + 7$ ; or remembering the product of  $7 \times 8$  by counting 5,6,7,8 ( $5,6 = 7 \times 8$ ); or when solving for  $x11$  facts, double the digit being multiplied by 11 (up to  $9 \times 11$ ) etc.

## Mnemonic Devices or Stories

These have proven to help students with learning disabilities, but they work for everyone. For example, "You have to be 16 to drive a 4 x 4." or "Picture a football coach feeding his 7 linemen 7 cans of beans each, so they can beat the 49ers."

## Limit The Facts To Be Learned At Once

Sort a stack of flashcards into piles; those that are known automatically and those that are not. Practice one or two unknown facts at a time along with known facts until they become automatic.

## Use Timers

Each day, give 1, 2 or 3 minutes to answer as many math facts as possible given a sheet of problems or a stack of flashcards. Chart the number right and celebrate/reward increasing automaticity.

## Beat the Calculator

This is a game where a pair of players competes to see who can answer first. One player attempts to answer the fact on his/her own before the other finds it on the calculator.

## Read Books About Math

There are great books such as Each Orange has 8 Slices: A Counting Book, by Paul Giganti Jr. or Centipede's 100 Shoes, by Tony Ross. Check out your public library for more ideas.

## Download Math Apps To Your Phone Or iPad

There are great apps out there. Try Math Evolve by Interaction Education and Zephyr Games or <http://www.techforteachers.net/apps---math-practice.html>

## Use Your Senses

Use senses in combination to fire neurons and imprint memory. Say and write, listen and repeat, look and say, trace and say, trace and write, sky write and say, choral recitation, move and say, clap it out, etc.

## Practice Facts Together That Are Related

With multiplication and division, for instance,  $4 \times 8 = 32$  so  $8 \times 8 = 64$  because the first factor is doubled, the quotient is also doubled. (4's and 8's; 2's and 4's; 3's and 6's; 6's and 12's; 4's and 8's; 3's and 9's, etc.)

## Check the Dollar Spots

Often times you will find games, flashcards, workbooks, etc., at dollar stores or in Target's "Dollar Bins".

## Games Online

<http://mathwire.com/numbersense/bfactlinks.html>

<http://www.playkidsgames.com/games/mathfact/default.htm>

<https://www.mathplayground.com/>

<https://www.mathfactcafe.com/>

<https://www.factmonster.com/math/flashcards>

<https://xtramath.org/#/home/index>

## Shaving Cream

Spread a thin layer of shaving cream on a cookie sheet or baking pan. Practice facts by writing with a fingertip!