

Practice

Grades K-5



According to recent research, the importance of mathematical fluency is compared to the need of phonemic awareness in reading.

Mathematical fluency is defined as the ability to retrieve the answers to basic math facts automatically, effortlessly, and accurately.

Developing fluent recall of the basic facts allows students to focus on more complex computations, problem-solving, and higher order math concepts.



If a child must use a procedure to obtain a basic fact on a longer problem, it is effortful and slow, drastically reducing the understanding of the higher-order concepts.

In addition, rapid math fact retrieval has been shown to be a strong predictor of performance on mathematics achievement tests. It has been shown that basic facts can be learned relatively effortlessly through meaningful repetition in the context of solving problems or playing games.



Common Core State Standards

By the end of 1st and 2nd grade, children will:

1.0A.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10.

2.OA.2

Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.

Percentage of Students Reaching the Grade Level Facts Goal



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By the end of 3rd grade, children will:

Maintain mastery of addition and subtraction facts up to 18

Explain and demonstrate the meaning of multiplication through repeated addition, patterning, manipulatives, arrays, and area models

Exhibit automatic recall of multiplication facts 0-9

Develop awareness of division in relation to multiplication facts

Instructional Tips:

Subtraction facts are practiced and memorized in Grade 3, as are the multiplication combinations with factors 1 through 12 up to 12x 12.

Students use arrays and pictures to understand multiplication before facts are memorized.

4th - 5th Grade

By the end of 4th grade, children will:

- ➢Maintain mastery of addition and subtraction facts up to 18
- > Exhibit automatic recall of multiplication facts 10,
- 11, and 12
- Maintain mastery of multiplication facts 0-12

By the end of 5th grade, children will:

Exhibit mastery of addition, subtraction, multiplication and division of all facts

Instructional Tips:

- 1. Tricks!
- 2. Provide the tools needed (computer programs)
- 3. Use pictures and arrays
- 4. Provide repetitive practice (weekly facts practice and facts tests)
- 5. Create Rhymes and Actions to remember facts



- Games 1. Match Dot Sets
 - 2. Dot Set Partners
 - 3. Dot Set Memory Match
 - 4. Matching Ten Frames
 - 5. Comparing Ten Frames
 - 6. Ten Frame Memory Match
 - 7. Matching Numbers
 - 8. Dice Game



Games 1. Ten Frame Activities

2. Basic Facts Cards

3. Dice Games

4. Bingo/Quizmo

5. Facts Face Offs



Tricks



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

Tricks

The 4 Times Quickie

If you know how to double a number, this one is easy.

Simply, double a number and then double it again!



Tricks



The 11 Times Rule #1 Take any number between 1-9 and multiply it by 11. Each number is just duplicated. Multiply 11 by 3 to get 33, multiply 11 by 4 to get 44.

The 11 Times Rule #2 Use this strategy for two digit numbers only. Multiply 11 by 18. Jot down 1 and 8 with a space between it. 1 --8. Add the 8 and the 1 and put that number in the middle: 198

Games Deck 'Em!



Use a deck of playing cards for a game of Multiplication War. Flip over the cards as though you are playing War. The first one to say the fact based on the cards turned over (a four and a

five = Say "20") gets the cards. The person to get all of the cards wins!

Children learn their facts much more quickly when playing this game on a regular basis.

Games Count By's





Use a multiplication table or let your students/children create one. Look carefully at all of the patterns, especially when the numbers correspond with the facts e.g., 7X8 and 8X7 = 56Let students/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. (Professor B)



3 × 6 pick up 18 sticks



3 × 7 21 angels in heaven

Rhymes



4 × 4 16 times I snore!

4 × 6 count 24 kicks







4 × 8 32 birds are on the gate







3×4 12 knocks on the door





28 spiders are webbin'



7 × 8

Dollars in a row, 56 is a lot of dough!



Internet Links

Math Baseball



http://www.funbrain.com/math/index.html

That's a Fact!

http://www.harcourtschool.com/activity/thats_a _fact/english_4_6.html

Cyber Challenge

http://www.mathmastery.com/cyberchallenge/

Internet Links

A + Math



http://www.aplusmath.com/Games/index.html

Math Playground

http://www.mathplayground.com/computation. html

The ArithMattack

http://www.dep.anl.gov/aattack.htm

Nothing is more important in getting a child on the road to success in math than a thorough grounding in the basic math facts of addition, subtraction, multiplication and division.

