TUTORING INSTRUCTIONS FOR MATH

(For children who struggle with math, and need alternative teaching techniques)

1.) **Teach math processes "in depth" by using booklets (or worksheets) comprised of all of one kind of math process (Addition; Subtraction; Multiplication; Division; Fractions; Decimals; Percents; Pre Algebra, etc). That way a child who is more "brittle" in math has the opportunity to really learn a concept inside and out, before having to learn another concept.**

It is best to teach these skills in isolation, versus in a regular curriculum math book. The regular math books teach so many other concepts, (probability; time; measurement; graphs, etc) besides the skills. We can get to those concepts later, but meanwhile let's get these kiddoes caught up to their peers in just the basic skills…addition, subtraction, multiplication, division, fractions, decimals, percent, and basic algebra. We don't do this by repetition, but by using the Right Brain Strategies. We have definitely found that math programs that have much repetition of many different math processes in each day's lesson are very hard for children who are brittle in math, and should be avoided if possible. Instead, by using Right Brain Teaching strategies to help them remember the various math processes, such as: teach it with color, humor and story, and put the paper on the wall up high, where their photographic memory can take a picture up it for easy storage and retrieval. This may seem like a strange thing to do at first, but it is very effective for struggling learners who have not experienced success with other teaching methods.

Many parents just go to the website, www.superteacherworksheets.com. On the left column of the website, you will find a list of basic skill worksheets to teach from. We don't give the child a worksheet, but the teacher uses these worksheets for practice problems to write and work out together on the White Board. Once your child has learned all the "math skills" for his grade level, then you can get a more traditional book to teach all the "fill-in" math information that is so good to have. We often use Spectrum Math workbooks, just because they do not introduce a multitude of concepts in each lesson. They seem to be easier to use.

2.) **Spend more time giving your child good "scaffolding" for getting to the answer, rather than only memorizing the math facts. Remember to 'model, model, model', before you have the child work on his own. He needs to SEE YOU do it many times. Preferably with a colored marker in your hand!**

MULTIPLICATION FACTS

For example, teach the multiplication facts in a "unit", using color and picture. (We have the delightful, RIGHT BRAIN MULTIPLICATION CARDS available). Put the stories/cards up high so the child's eyes can see them …such as at the breakfast table. Memorize about 5 of the hard multiplication facts each week, taking pictures of them every day for a week, as we do with the spelling technique. You will see your child memorize those pesky multiplication facts faster than you thought possible. Even left brain students enjoy this "photographic memory" technique.

ADDITION

If your students are still using fingers to add, then give them a way to see their fingers directly on the numbers. We teach this using Touch/Visual Math Cards. You can buy them or make them yourself. The number "5" has five dots on it in color, with a funny story to remember the placement of the dots. Using this picture taking method, when the child sees a "5" on a math sheet, he/she will automatically see the

invisible dots, and add easily. Do this memorization technique for all of the numbers. Soon the child will be adding long columns of numbers, while counting all the dots. This will eventually occur so quickly that it looks like all the addition facts have been memorized! Many right brainers use this technique even as adults!

If your child has spatial problems, and has difficulty adding with multiple columns, then put each column in color. For example, in this problem:

6545
3432
+5434

place the first column in blue, the second in red, and the third in green. Place a blue line under the blue column, a red line under the red column, and a green line under the green column. Place a black line under the plus sign, because that represents an extra parking place. When the child adds, he will count up the dots, and, if the answer is two digits, puts only one of the digits on the blue column, while the other one goes flying to eat at the next door neighbor's house. Continue this process throughout the addition problem. Sometimes when a child has a real spatial (left/right) problem, I will have him write both digits on the right edge of the paper, and underline the one that stays (the one closest to the edge of the paper), and the one that flies to the neighbor's. This usually only needs to be done for a short time until the child "sees" the placement in his head.

SUBTRACTION

Many children, who may otherwise be OK with math, have not found an efficient way to do subtraction. This slows them down tremendously in their daily work.
Remember, that anytime a child is struggling, abandon the black and white auditory instruction route, and use "visual velcro" that is more right brain, thus more easily stored in the long term memory.
I teach subtraction (for a child who has not easily memorized the facts) this way:

13 - -	11 - -	15 - -
- -	- -	- -
-8 -	-7	-9 - -
5	4	6

The big brother is upstairs (13, written in blue). He has left something down stairs, but is too lazy to go down stairs to get it, so he sends his little brother (the 8, written in red) to get it. His little brother, the 8 doesn't like being downstairs by himself, so he runs up the stairs as fast as possible to get to his big brother. We're going to help him get up the stairs by making stair marks, or dashes "two by two like Noah's Ark". Put a dot on the 8 as you say his name, then make a "stairs mark, a dash" for each stair that he runs up. When you get to his brother, shout his name in your head, so you'll know where to stop. Count the number of stairs you went up, and that is your answer. As the child practices this, he will begin to see patterns in the dashes, or stairs. After a while he won't need to count at all. But on days when he is tired, this is a good "fall back" to do to get the subtraction done.

WORD PROBLEMS

Instead of doing a few word problems every day, get a booklet that is just on word problems. Do them together, with you, the teacher/parent, doing most of the work, modeling for your child how to do it. Remember that modeling is the most powerful way of teaching. We model it so many times, that the child

literally pulls the pencil out of our hand to do it himself. We can be assured that he knows it by that time. Don't "quiz" until the child has firmly developed the technique. Only "quiz" when you know the grade will be an A+.

When doing word problems, ALWAYS make a picture of the problem. At first, you think aloud how you reason through the problem, making pictures (stick figures) as you go. Then solve the problem. If the problem involves large numbers, or fractions, at first change the large numbers to smaller numbers, like "2 and 4". It's much easier to see the process when such little numbers are used. Once the process is understood, then the larger numbers can be placed in the problem. Remember, rich pictures and color are the key to understanding how to figure out word problems.

MATH PROCESSES

Make "templates" of the math processes as you teach them. For example, if you are teaching multiplying by three digits, place the bottom three digits each in a different color. Each color takes its' turn with the top numbers. Then you add them. After you teach this concept with color and story, then put the example that you taught up high so the child can always refer to it if he gets stuck the next time he sees the problem in the workbook. Make sure that you have the problem made very LARGE and with much color. Use magic markers, not colored pencils that are not very vivid.

Do much practice of problems when you are first learning them, on a white board using different colors. When the process is firmly cemented, then do the ones in the workbook.

Any math book will work, as long as you are using these friendly teaching techniques. Make sure that the workbook has big spaces to write in, and few review problems, which confuse these guys. (remember, instead of review in the math workbook pages, we have a rich representation, or example of each kind of problem put up high…like the alphabet strips…so the child can readily refer to it. The color and pictures will soon help him store it in his long term memory. We call these rich examples, "Templates"). There are many simple, inexpensive math workbooks that fulfill this requirement. They can even be gotten at your local discount stores.

Remember that these guys are brittle in math because of a processing glitch. Do not make judgments about their learning ability compared to their siblings who may learn the facts in their sleep. Continue to use pictures, color and stories, and much modeling, and you will have "happy campers" in math, rather than miserable ones. There is more than one way to learn math, memorization is only one way, not the only way!

The DVD, Teaching the Right Brain Child comes with a Study Guide that contains some math examples for higher level math problems!

Dianne Craft has a master's degree in special education and is a Certified Natural Health Professional. For more information on children and learning, or to purchase Right Brain Teaching products, go to her website: www.diannecraft.org You will find many helpful articles.

Math Tutoring

Some Good Teaching Approaches:

1. Model, model, model the problem-solving process, showing your child how to do it (using color and picture), before having him work on his own.
2. Teach math processes "in depth" by using booklets comprised of all of one type of math problem, for instance, subtraction (such as Key Math). That way a child who is "brittle" in math has the opportunity to really learn a concept inside and out.
3. Make a math "template" or example of the math concept/processes as you teach them (I like to use chart paper or poster board from the local teacher store.). Hang this template/example up high so he can readily refer to it. This rich representation with color and pictures will help your child store it in his long-term memory!
4. Use color, pictures, and humor (such as silly stories) when teaching math facts or new processes.
5. Have your child work out practice problems on a white board using different and vivid colors. Make sure the process is firmly cemented before moving into pencil/paper or workbook practice.