



## Letter to Parents of Elementary Aged Math Students ☺

As elementary school teachers, it is our goal to create an appreciation for and love of math from the earliest of ages. We strive to help young children learn how mathematics relates to the world in which they live, and to become effective problem-solvers and even life-long mathematicians!

We'd like to take the opportunity to remind ourselves of the importance of a strong home-school connection. Below you will find several "highlights" – including general information and ways you can help your child at home. Here's to fun with math!

1. The importance of **FACT ACQUISITION** cannot be over emphasized.

There are best practice strategies and methods we use at school, but there is really no wrong way to practice at home trying to help your child learn their math facts! Flash cards, orally while driving in the car, on-line games, memory games, writing them out.... whatever your child takes to best. It is hard work, but **IMPORTANT** work, and now in elementary school is the time to learn these facts. Never again will there be the opportunity in older grades, as topics progress and build upon the assumed acquisition of one's facts. In simple terms it breaks down to:

**Grade One:** **ADDITION** and subtraction

**Grade Two:** addition and **SUBTRACTION**

**Grade Three:** **MULTIPLICATION** and division

**Grade Four:** multiplication and **DIVISION**

To truly KNOW a fact, students should be fluent (speed + accuracy = fluency) and should also have conceptual understanding. This means that a student would also be able to explain a strategy such as knowing  $9 + 6 = 15$ , because he or she knows  $10 + 6 = 16$ , so  $9 + 6$  would just be one less than this. Or, decomposing numbers to solve, for example,  $7 \times 8$  (7 groups of 8) is the same as  $5 \times 8$  (5 groups of 8) +  $2 \times 8$  (2 groups of 8). So,  $40 + 16 = 56$ .

Some students are able to learn their facts at school and do not need the additional home practice, however, more students need the individual practice time to study these independently – alone in a different, perhaps more relaxed setting. Being able to struggle and exhibit “cognitive dissonance” which many students need to go through in order to learn their facts, is often better played out in a home environment rather than in a classroom with their peers.

As teachers of mathematics, it is evident on a daily basis how students who know their math facts have freed their working memory and are able to move on to other concepts more readily than those students who continue to struggle. We want all of our students to feel successful, confident and ready to move on, putting these facts to use to solve problems in our world, which is why we learn mathematics to begin with.

2. **“PLAY IS A CHILD’S LEARNING.”** Children may not realize, but by playing games- hands-on games, like blocks, puzzles, card games, memory games, board games, dominoes, and the like- they are building crucial early math skills such as patterning, sequencing, one to one correspondence, classification, counting on, subitization, spatial orientation, and space organization. There are many super on-line math games, but there is nothing like the above, building important connections among brain synapses through tactile, linguistic and mathematical experiences combined. Some of our favorites include Rush Hour, Othello, Mancala, Battleship, Connect Four, and of course, a good old-fashioned deck of cards- with “War”, “Addition War”, “Multiplication War”, “Go Fish”, and even “Trash” for pre-k/kindergarten.

### 3. THE UNKNOWN CAN BE ANYWHERE!

Traditionally, we ask students:  $3 + 2 = ?$

What about:  $? = 3 + 2$

Or even:  $3 + 2 = 4 + ?$

How about:  $? - 6 = 5$

Or:  $4 \times ? = 8 \times 3$

Exposing students to these seemingly simple, but complex equations, takes their understanding much deeper. Try to come up with your own at home!

4. We now know, as educators of mathematics, that it is not enough for our students to simply know the procedures of math. We must also be sure they know the concepts, and be able to apply and communicate their findings.

**The connection of speaking and writing to mathematics continues to grow stronger.** It is critical that students be able to explain and write about how they solved a problem, using various mathematical models and accurate mathematical vocabulary. There are many every day occurrences that lend themselves well to talking out or explaining how a problem was solved. One might, for example, tell how they figured out how much change they should receive at the store or how they knew how much time had passed for the long car ride.

Additionally, there are many great children's books available with mathematical themes. **Some of our favorites are by the authors Greg Tang, Stuart J. Murphy, and Loreen Leedy.** Check some out at your local library!

Thank you for taking the time to read our suggestions, and .....  
Have fun with math!!!

