Math and The Flickering Screen

By Elsje de Boer

I needed six bags of feed for my animals: laying pellets, hen scratch, dairy ration, rolled oats. At the time, they ranged in price from $7.90 to $8.10, so the total cost would be around $48. Confidently the young clerk at the feed store told me: "That will be $26, please." When I pointed out that this could not be correct, he protested that he had added it up on his calculator and calculators do not make mistakes. (Since I knew the owner, I sent a cheque for the correct amount.)

Alex was in grade eleven. He was a good student, but he was having some problems with math. When his calculator was stolen he came to me for help with fractions. Turned out he did not know his times tables and could not add or subtract without a calculator. "Wouldn't it be nice if you could figure out how much you'd have left from a twenty after buying a burger for $3.95?" I asked. Alex got quite flustered. "I... I can't do that, I... I don't have my calculator!" he protested.

These are not isolated incidents, nor are they uncommon. According to Literacy B.C., 48% of our population does not have the math skills required for every day living. Schools have coined new terms: math phobia, fear of numbers, and innumeracy, the inability to deal with numbers. Both are now epidemic. This is no small matter in a world where everything, from blood pressure to election results, from earth quakes to the stock market, is measured in numbers.

It is easy to point the finger at teachers, at schools, at education in general. The way math is taught, with our aversion to rote learning and repetition and the prevalence of calculators, has done little to improve the situation, but that is only part of the problem.

Numbers measure quantity: how high, how long, how heavy, how far, how many. These are spatial concepts, and it is interesting to note that the brain processes numbers in the inferior parietal cortex, headquarters for spatial cognition. A prerequisite for math is a good grasp of size and distance. No wonder we are so fond of bar graphs!

Children develop spatial cognition when they play: when they build with blocks, climb a tree, throw a ball, play tag, build a fort; they develop a sense of number when they play marbles or help set the table when the cousins are coming over for dinner. But most of today's children rarely build with blocks or play tag, never climb a tree or build a fort, and use a ball only in organized sports; they don't play marbles and they don't set the table. Instead, they spend most of their time in front of a flickering, flat screen: the television, the computer, a video game or a game boy. All images are two-dimensional, there is no need to see depth or estimate distance, and the spider and the elephant are the same size. Moving the mouse a few centimeters or clicking with a thumb are not the same as reaching for a higher branch in a tree, determining if a rail or a two-by-four will be long enough to span the top of the fort, or jumping far enough to get across that puddle.

The television and computer generation comes to school with underdeveloped spatial cognition, ill prepared for the comparative quantification that is math, and the lion's share of the blame goes to their addiction to the flickering screen.

Elsje de Boer is a Lawyer and foster mom from Holland, with a background in teaching children with LD and FAS.