

My Fling with Chemistry

I often have students tell me that 'they must be stupid because they're not good at math'. This makes me very upset. It's hard to convince someone that ability in math does not correlate with intelligence ... at least, not both ways. While it is true that students who are good at math are often smart and good at other things, *the reverse is not true. Not being good at math doesn't mean you aren't smart!*

I tell students who say this several things. One thing I tell them is that some of the smartest people I've ever known are not good at math, including several students here at WCS I've known over the past few years. My wife Jane passed grade 12 math only because her teacher liked her ... but he made her promise never to take another math course, ever! That didn't stop her from becoming the best primary teacher I've ever met. And she's really smart.

Another thing I tell them is that everyone is good at some things, and not good at others. If you made a list of all the things you are really good at, most people might have a list of maybe ten or so things. But how long is the list of things you are *not* good at? It's infinite! You can't do neurosurgery, you can't pilot a jet fighter, you can't speak Serbo-Croatian, you can't play tennis well ... see what I mean? Just because there is a long list of things you *can't* do doesn't make you stupid. If math is on that list, so what? It won't stop you from becoming a police officer, a member of Parliament, an elementary teacher, a good parent ... you are still smart!

So what does all this have to do with me and chemistry? Well, another thing I tell these students is how awful I was in school at chemistry. Not my fault at all, of course. I tried hard. But things just seemed to take a turn for the worse.

In my high school chemistry classes, I could do the book work OK. But I could never do an experiment successfully to save my life! In my last year (equivalent to Chem 30) I found myself having to prepare a large beaker of 10% sulphuric acid for an experiment (10% acid and 90% water). For some inexplicable reason, my solution ended up being 10% water and 90% acid. You could see the fumes coming off the beaker! This stuff was dangerous! What could I do but pour it down the lab sink before the teacher noticed!

Lab sinks are meant to tolerate a lot of abuse, and are pretty resistant to acid and other chemicals. Unfortunately, they aren't designed to withstand a full beaker of almost full-strength sulphuric acid being poured down them. How was I supposed to know?

The ensuing smoke from the melted sink and pipes cleared out the classroom for the rest of the period. The teacher was not impressed.

This example may also explain why nothing I cook ever turns out.

But my fling with chemistry wasn't over. A guidance counsellor at our school was supposed to help us find university programs that we might pursue. My interest was astronomy and astrophysics, but somehow, I got steered into Aeronautical Engineering at the University of Toronto. ("You can build spacecraft at NASA!"). Sounded good to me ... what did I know?

After about a month of classes, I discovered that engineering really didn't interest me. I didn't want to design and build things ... I wanted to learn about things, especially astronomy! Of all the courses I had to take, the only two that I found palatable were physics and math. The rest were kind of boring. I was doing OK, but it was an incredible amount of work. I found out later that the 'Engineering Science' program at U of T was the most demanding program they offered, outside of medicine.

Plus, I had to take CHEMISTRY!!

The Friday before Thanksgiving found me in the Chemistry building for my dreaded 4 - 6 pm chem lab. This particular lab required us to spend about 2 hours measuring, mixing and filtering various chemicals to make a final product. The final calculation required each student to titrate (pour drop by drop) our prepared solution into a test solution, and count the drops until the test solution changed colour. The number of drops, when inserted into a formula, would give the answer to the problem.

Looking around the room as 6 pm approached, I was anxious to be done and leave. I was going home for Thanksgiving, and I had a 4-hour bus ride ahead of me. I noticed that most other students were getting results after about 6-7 drops.

I started the titration, and counted drops carefully.

When my count reached one hundred, I sort of figured that I'd messed up the experiment somehow. I would have to come back one evening the next week and redo it. Never mind that I had several hours of homework every night from my other classes.

Well, what happened was I went home, talked to my parents, and decided to get out of Engineering. I dropped out, came back home, and worked for a year (hard labour in a copper refinery), and returned the next year in the Science and Math department. I took math, physics, and some other fun courses, including astronomy ... where my professor was one of the discoverers of the first black hole! So exciting!

But I never again took another chemistry course!

I'm not good at chemistry. Does that make me stupid?