“I’m not good at math.”

As a professor of biology, I hear this refrain from many students each semester. Most often, it is uttered just after I introduce a mathematical concept or process. I think the intent is, in part, to set a low expectation – the student is saying, “I won’t do well at this. Don’t expect much.”

What I hear, though, is “I am not going to try.” “I am not willing to work.” I have empathy for many such students – they have no doubt had frustrating experiences where they don’t feel like they measure up. No one enjoys being bad at something.

To me, though, this refrain still sounds as jarring as if a student says “I’m not good at reading.” or “I can’t compose sentences.” If those were true, who would be willing to admit it? Who would embrace it, as a badge, describing their innate intelligence? Who would use it as justification for not trying to improve?

We don’t seem, as a culture, to believe that anyone is born a great writer, a great orator, a great doctor, a great historian… but we do believe people are born “good” or “bad” at math. Why do we expect quality writing to only come from persistent, frequent, and critical practice… while we expect math to come easily or not at all?

There, of course, is variation in people’s innate ability to do math, as there is in their ability to write, to speak articulately, or play the banjo. Yet, most achievement has come to those who put in years and years of work. Malcolm Gladwell, in his book Outliers, makes the point that nearly all “geniuses” spend about 10,000 hours practicing before achieving mastery – whether that is Bill Gates and his early computer programming, or the Beatles playing eight hours a day in sleezy German nightclubs before making it big.

Stop here and reflect. Artistic masters, “natural” athletes, computer geniuses… all often spend +10,000 hours practicing before the public even sees them. When they appear on the scene, we see them as overnight successes, as natural talents. What is 10,000 hours? That’s three hours a day, every day, for 9 years. Or, if you’d like, 9 hours a day, every day, for three years. Imagine practicing math for that amount of time… you would get better, yes?

My point is just this – consider math in a new light. Not as a gift, given to some and withheld from most, but as a craft. One gets good at making furniture by making furniture. One gets good at singing by singing. If you are ‘not good at math’, do more math.