

6. Value depth over speed.

Many people incorrectly believe that being good at math means being fast at math. It doesn't and we need to dissociate math from speed. When we value fast computation (as many classrooms do) we encourage a subset of learners who compute quickly and discourage many others, including deep slow thinkers who are very important to math (see sidebar).

We no longer need students to compute fast (we have computers for this) we need them to think deeply, connect methods, reason, and justify.

1. Tell students you don't value fast work. Mathematical thinking is about depth not speed.
2. Don't let mathematical discussions be driven by the fastest students.
3. When asking for hands up, don't always take answers from the fastest students.
4. Don't use flash cards, speed competitions, timed tests, instead value depth, creativity, different ways of thinking about math, and different explanations. A paper showing the research suggesting timed tests cause math anxiety is here: <http://youcubed.org/pdfs/nctm-timed-tests.pdf>



"I was always deeply uncertain about my own intellectual capacity; I thought I was unintelligent And it is true that I was, and still am, rather slow. I need time to seize things because I always need to understand them fully. Towards the end of the eleventh grade, I secretly thought of myself as stupid. I worried about this for a long time.

I'm still just as slow. (...)At the end of the eleventh grade, I took the measure of the situation, and came to the conclusion that rapidity doesn't have a precise relation to intelligence. What is important is to deeply understand things and their relations to each other. This is where intelligence lies. The fact of being quick or slow isn't really relevant."

- Laurent Schwartz,
Winner of the Fields Medal
(A Mathematician Grappling with
His Century, 2001)

