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The Math Motivator

Nurturing a child's confidence and excitement about school

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"We'll look back on this as a dark age in education." So says Toronto playwright, math scholar and dabbler in the philosophy of education John Mighton. He's also a math tutor who, with his non-profit organization, Junior Undiscovered Mathematical Prodigies (JUMP), has helped turn 1,000 one-time struggling kids into virtual math whizzes. Mighton, 45, attributes our pre-enlightened state to a school culture that neglects what he calls the "psychological aspect of learning" -- that is, nurturing a child's confidence and excitement about school.

In his recently published *The Myth of Ability (Anansi)*, Mighton reveals the method that has worked so well for his students -- but only after he takes schools to task for perpetuating the myth that some people are simply bad at math. And he cites himself as a prime example of the notion's fallacy. A mathematician wannabe from an early age, he dropped out of calculus in university after getting a C. But at 31, with several award-winning plays to his name and experience as a volunteer math tutor -- not to mention greater confidence -- he tried again. Three years ago he got his Ph.D. at the University of Toronto. Most teachers believe they themselves have no math ability, Mighton says in an interview, and transfer that attitude to struggling students. Meanwhile, our educational system assumes some students will inevitably do poorly or fail. But given a child's innate ability to learn, Mighton argues, success in math for all is a realizable goal -- and low grades reflect a failure to teach.

Mighton's pedagogy combines simple mechanical procedures -- which involve breaking each function into its most rudimentary steps -- with an ample dose of nurturing. Confidence and focus, he says, come most easily if a child is excited about learning. To spark that interest, he hands out work that's above grade level -- a manageable challenge precisely because math functions can be broken down into simple steps. For a third grader to know she's working on a problem two grades above her level, he says, is a "huge motivator."

But children also want, and need, positive reinforcement. "With infants, the capacity to absorb knowledge cannot be separated from the capacity to be adored," he writes. Experience tells him this is still true of older kids. Finally, Mighton suggests, "no one can learn math without *believing* they can." And it's up to teachers to convey their confidence in students' abilities. "I've worked with 100 very low remedial kids. And I'm quite certain they can all do it." How can he be so sure? "Because I haven't seen one yet who hasn't."