



## The Math Myth by Andrew Hacker

### Think you might want to read this book?

Andrew Hacker presents *The Math Myth* as America's antidote to the global hysteria surrounding rigor and achievement at all levels of math study. He argues, quite convincingly, that the intensity in content level and pressure to understand is disconnected from what is needed for success in the real world. He combines statistics from research, anecdotes from his own life, and several interviews to piece together his arguments that lower levels of math deserve more attention, algebra and higher level maths are tested in a way that limits opportunity, and everyone should understand statistics at a basic level. A great read for anyone concerned with math learning or leading in a school where math is taught.

### What would Socrates ask?

- Does having math as a gatekeeper to entry to science courses and some universities limit opportunities for children and as a result, have a negative impact on society in that not everyone reaches their potential?
- If other disciplines don't have a similarly extended sequence of learning, why do we have it in math?
- Why do we make all high school students study high levels of algebra and geometry when numeracy and statistics is all adults really need?
- Would we be better off if instead of the algebra, geometry and calculus sequence we offered statistics, personal finance and business math?
- Why must students demonstrate math skills in a timed environment?
- What is the price of requiring algebra knowledge as a gateway to higher education?
- What if more math assessments were geared towards projects or group work?
- What if we grouped students in math by desire to learn math as opposed to ability?
- What does it imply about the world of math if we always ask students to work on it individually?
- What if math assessments valued imagination, experimentation, iteration and reflection?
- What if Coding, Statistics, Personal Finance and Business Math were considered an option instead of the traditional Algebras, Geometry and Calculus sequence?
- What if all math units/projects finished with a written explanation of the results?
- What if knowing where numbers come from, how they are derived, if they are being used for propaganda and how they can solve problems was the focus of math study?
- What if high school math consisted of two tracks: academic math and numerical literacy?

### Relevant Statistics

- At Consolidated Edison (power company for New York City) only 80 out of 600 electrical and civil engineer jobs required mathematics.

## Concepts

- One of the modern day illusions is that math is a necessity for a successful/happy life. Maybe we should offer a PATH diploma- Philosophy, Art, Theology, History.
- The pass rate for mathematics is the lowest of all departments and disciplines.
- Maybe we should focus on public statistics: “numbers that impinge on our lives” as opposed to academic statistics: the “scholastic discipline increasingly taught in high schools and colleges.”

## Quotes from the author

- “There is no evidence that academic mathematics, at least not the kind students are being urged to learn, will be the lingua franca of the future.”
- “... the SAT, ACT, and the Common Core... have created arbitrary and intractable barriers for students whose aptitudes lie outside of mathematics.”
- “Not a single veterinarian or technician with whom I’ve spoken could recall a need for that.” (That being linear and quadratic equations: what we test students on to get into veterinary technician programs.)
- “It’s unrealistic to expect that all the talents we want and need will always be found in tandem with mathematics.”
- “... imposing the mathematics of “college readiness” on everyone will derail the academic careers of huge pools of our young people.”

## Quotes from others

- “Currently, more than half of all U.S. students fail mathematics.” - Lynn Arthur Steen
- “It is hard to make a case that topics like complex numbers, rational exponents, systems of linear inequalities, and inverse functions are needed by all students.” - Joseph Rosenstein
- “What prospective employees lack is not calculus or college algebra, but more basic quantitative skills that could be taught in high school.” - Lynn Arthur Steen
- “Any honest physician will tell you the last time he/she used calculus was on a final exam in the subject.” - A physician in a NYT article
- The vast majority of engineers use “only eighth-grade mathematics.” - David Edwards
- Even at high tech firms “knowledge of mathematics did not make the top-ten list of the skills employers deem most important.” - Tony Wagner
- “There appears to be no research whatever that would indicate that the kind of reasoning skills a student is expected to gain from learning algebra would transfer to other domains of thinking or problem solving or critical thinking in general.” - Peter Johnson
- “To assert that mathematical training strengthens the mind is as impossible to prove as the proposition that music and arts broaden and enrich the soul.” - Underwood Dudley
- “Most problems require the insights of several mathematicians in order to be solved. Mathematics, more than many other fields, depends on collaboration.” - Sylvia Nasar and David Gruber

### Organizations/school working on answers

- [youcubed](#)

### Gateways to further learning

- [Stanford professor urges teachers to rethink math instruction](#)
- [What does good math instruction look like?](#)
- [What works better than traditional math instruction?](#)
- [What does math literacy mean?](#)

### Referenced books with the potential to impact leading and learning in education

Author(s) Last Name	Title
Sax	<a href="#"><i>Why Gender Matters</i></a>
Gardner	<a href="#"><i>Frames of Mind</i></a>
Paulos	<a href="#"><i>A Numerate Life</i></a>
Huff	<a href="#"><i>How to Lie with Statistics</i></a>

The applicability of this book to education is ....



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