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AN EDUCATION TO MATCH YOUR MISSION

The Best Math Curriculum (A Theme Unit in 3 Lessons)

by Oliver DeMille

Some American Indian tribes teach that when something in your life repeats itself three or four times, you need to pay attention. A few years ago one of my students called such a pattern a “theme unit”: a thought, idea or experience that presents itself repeatedly in different ways to make you take notice and learn some important lesson.

This week I was reminded of “the best math curriculum.” In fact, there were three reminders, and when the third one came it finally made me pause and take notice.

Lesson #1

Source: Invest-Money-Stocks.com

The first reminder happened when my son requested help on writing a resume for scouts. This evoked a memory of an occasion when his older brother did the same requirement nine years ago.

At the time, I was spending a lot of days on the road across North America speaking about the [7 Keys of Great Teaching](#), and I found myself frustrated with the language of the scouting requirement.

I wrote about this experience years ago, but the short version is that I discouraged my son from writing a resume.

“After all,” I reasoned, “we teach too much ‘employee-ship’ rather than entrepreneurial values in our society.” He nodded his head mildly and let me ramble. The



result of this little interchange was that I had him write up a full business plan instead of a simple resume.

With the luxury of the fact that we home schooled him, he spent a lot of time on this and ended up with a three-month plan to make more money than any boss would pay an 11-year-old employee. He learned to use a spreadsheet and outline projected income, expenses, investments, debts, interest and payroll costs. Just to be sure he met the scout requirement, he included a resume in the business plan and “hired” himself to manage the project – a dumpster management service, as I recall.

He was pretty excited about his business proposal, but I didn’t let him submit it as a mere plan. I told him he needed to make a better case than just a bunch of numbers on paper. So he implemented the plan in our neighborhood, and only then went and met with his merit badge counselor.

I confess I was a little disappointed when the counselor simply gave a cursory glance at the business plan and moved on to other requirements; but my son did learn how to use spreadsheets and do basic business planning.

And now this week another son is repeating the process. Perhaps the years have mellowed me some, for I’m less zealous about it all now; and yet I still think business planning and using spreadsheets is a great basic math lesson.

Lesson #2



The second “ding, ding, ding” in my mind about “the best math curriculum” came when our eight-year-old daughter told my wife Rachel one home school morning at 10 a.m. that she “hates math” (this following a session of sitting through an explanation intended for her 15-year-old sister, which she found tedious) and then informed her at 3 p.m. that “math is so fun—I just love it.” She followed with, “Can we spend more time on math tomorrow?”

This transformation occurred because my wife’s response to the 10 a.m. declaration of hate was to spend the school day showing the little girl (and her younger sister) as many exciting and fun things about math as time

would allow. She went to the white board and they spent some time introducing the language and symbols of math with stories of pizzas, necklaces, fruit salad and the like, diagramming and discussing mathematical symbols, numbers, equations, shapes and problems, and also smiling, questioning, laughing and hugging.

Then they pulled out math manipulatives (pinto beans, actually) and made a hands-on game of it all.

It was a fun home school day for mom and both girls, and the next three days were spent the same way. I'm not sure if it will continue tomorrow, but I know that two little girls have fundamentally different views of math than they did at the beginning of the week.

Lesson #3

Then, just today, a third thing happened that reminded me of “the best math curriculum.” Again, I've taught about this for years, but when it came up again this afternoon in the immediate aftermath of the scouting and homeschooling events, I realized, “this is a pattern.” So now I'm paying attention.

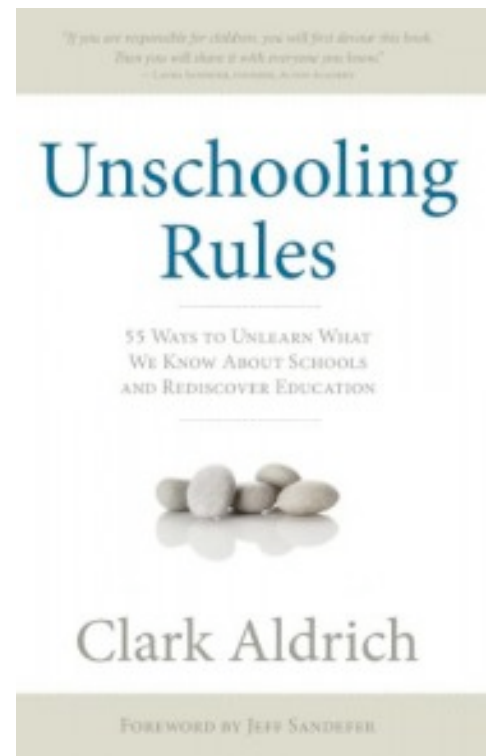
This third reminder was pretty direct. I was reading in the excellent book [*Unschooling Rules*](#) by Clark Aldrich and I came to a chapter heading that summed up “the best math curriculum” as well as I've ever seen it: “One computer + one spreadsheet software program = math curricula.”

That's the lesson. And it's right on.

Aldrich wrote:

“Math must be part of a critical core curriculum. It is one of the few subjects, along with reading and writing, worth making mandatory. Given that, what math should be taught?”

“Most math curricula have been hopelessly tangled up in a quagmire of precedent, prestige and capriciousness. Obviously, there are people who are passionate about math, and some of them go on to be...math or engineering majors. For them, calculus is required.”



“However, there remains a perfect tool and context for math for the many people who do not share that passion. And that is a good spreadsheet, which can be created with Microsoft Excel, which many people have on their computers.”

I agree with Aldrich about most of this, mainly that spreadsheet math is extremely useful in our modern world and also a fun way to learn math—as my son found out in scouting. I have long taught that business planning is the greatest math project of all: organizing something out of nothing, and then outlining the details of the plan to implement it and put it into action, both in prose and numerical languages.

Such a curriculum is excellent for mathematical and leadership thinking – whether you home school or not – and it combines numerous skills into one project.

I do question Aldrich’s view that certain advanced mathematical principles are just for those few who are passionate about math or engineering, but I understand where he’s coming from—in the conveyor-belt model of education, love of math is often forced out of all but a passionate few.

In my experience, “the best math curriculum” nearly always engages more than “the few” to a lifetime interest in math.

So what is “the best math curriculum?”

It is really six simple steps.

1) The young person must fall in love with numbers.

Let me restate this for emphasis, since this concept is not widely understood in our modern society. The first step is to fall in love with *numbers*—not math, not arithmetic, not addition or subtraction, and certainly not getting good grades, pleasing adults or being at the head of the class. A person who falls in love with numbers is on the road to being passionate about math, and this applies to pretty much everyone—not just the mathematical few.

2) The person must fall in love with shapes and comparisons.

This is really just a continuation of loving numbers. The best way I’ve ever seen for a young person fall in love with numbers, shapes and comparisons is to spend a few hours with an adult who 1) is in love with numbers this way and 2) knows how to share this passion in a fun and inspiring way.

If all of math is simply a continuation of one's love of numbers, shapes and comparisons, the likelihood of continuing passion for math is drastically increased for nearly all people.

Where the conveyor-belt approach of forcing math on the young in rote and highly-pressured and competitive ways results in a few of the class getting passionate about math, the leadership approach of helping the young fall in love with numbers, shapes and comparisons engages the interest of nearly all.

I have witnessed the differences between these two approaches over and over — always with similar results. Most likely, so have you.

If teachers or parents aren't themselves passionately in love with numbers, shapes and comparisons, or if they don't quite know how to effectively transfer this passion in fun ways to youth, a few great books can help.

I highly recommend what I consider literally the very best book for falling in love with numbers and shapes: [*A Beginner's Guide to Constructing the Universe*](#), by Michael S. Schneider. The adults can read it first, and then share it with the youth.

[For an expanded list of how to approach your own math-hate detox for a renewed love of math, and for tips and tools to inspire math learning in young people, see "[What About Math](#)" by Rachel DeMille.]

3) Fall in love with the mathematicians &

4) Fall in love with the ideas of math.

Once a young person is deeply interested in numbers, shapes and comparisons, the next step is to fall in love with the mathematicians who made their lives loving and pursuing math. Start with [*Mathematicians are People, Too*](#) by Luetta and Wilbert Reimer, and then go on to biographies of great mathematicians.

Along with biography, reading the original writings of great mathematicians — rather than math textbooks — helps the young learner fall more deeply in love with increasingly complex mathematical concepts and ideas.

Indeed, loving the ideas of math is the fourth step.

Great starting books are [*On Numbers*](#) by Isaac Asimov and [*An Introduction to Mathematics*](#) by Alfred North Whitehead. Two more fun books for this step are Euclid's first book of [*Elements*](#) and [*Archimedes and the Door of Science*](#) by Jeanne Bendick.

5) Move on to traditional book learning

Once the first four steps are accomplished, it is time for a traditional book and lecture approach to learning arithmetic, algebra, geometry, trigonometry, and so on. This process is even more effective if it occurs simultaneously with step six.

6) Learn spreadsheets and practice business planning

It is okay to make a number of plans that aren't implemented into actual business, but each student should establish at least a few of their plans into real businesses that turn a profit.

There is something about the physical and real impact of such math that brings a sense of magic to a love of numbers.

The irony of this is that step six is seldom taught in most schools but it is by far the most useful to nearly all adults after they are out of school. Indeed, if you have to choose just one of the steps, do number six. And whatever other steps you do, be sure not to leave out six. Finally, if you are going to do step five, you'll see a lot more success for a lot more students if you do steps 1-4 first.

This is “the best math curriculum” because it will work for almost everyone, and by “work” I mean it will turn us all into lifelong lovers of math. To summarize, here is The Best Math Curriculum in a nutshell:

- 1. Fall in love with numbers**
- 2. Fall in love with shapes and comparisons**
- 3. Fall in love with biographies of mathematicians—their lives, challenges, discoveries and achievements**
- 4. Fall in love with mathematical ideas**
- 5. Study math the traditional way, and at the same time,**
- 6. Learn and practice spreadsheets and business planning**

The key to success is simply to follow the steps in order: one before two, then two before three, and so on until the first four steps are complete.

Once the student loves numbers, shapes, comparisons, reading math biographies, and thinking about math ideas, the traditional textbook study of math combined with the study of spreadsheets will make math interesting and fun for nearly everyone.

So whether this is the third, second or even the first time the idea of upgrading your math program has come up recently, pay attention. “The best math curriculum” can take your home school math program to a whole new level! It works.

And it’s also a lot of fun.

ADDITIONAL RESOURCES:

- [*Click here for Oliver’s suggestions on Business Planning >>*](#)
- [*Click here for Rachel’s suggestions for math resources >>*](#)
- [*Click here for Children’s Math Classics >>*](#)
- [*Click here for Adult Math Classics >>*](#)
- [*Living Math*](#)
- [*Why Math?*](#)

