

# My ideas for mathematics education

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## 1 Abstract

The current system of K-12 mathematics education is a curiosity killer by focusing on step-by-step instructions, tests, nonrelevant and ancient mathematics, arithmetic (even in calculus), and focusing on rules of manipulation that the students cannot play around with and realize the notions of modern mathematics. This note serves to give several ideas that can change this.

## 2 Ideas

- Let children play games, if their natural curiosity is focused towards logic - However, if it is focused on shape, a great activity that would introduce the idea of a smooth manifold is “taking apart” a sphere like a puzzle and realizing that the local coordinates are the same on each patch (or puzzle piece) - Later on, the technical terms should be introduced in college. In fact, calculus can be taught via differential geometry; ideas such as change with respect to a basis and “initial velocity” can be realized. - Otherwise, technologically learning modern mathematics via curiosity and making conjectures and theorems, being wrong and deserving the reward of completing a proof is another great way to engage young students into mathematics.