

## Using mathematics for real-world improvements

**Instructions:** Read this passage. Then answer the questions. This assignment is worth 11 points for the questions (1 per question), and 10 points for briefing the class on your project.

We completed the assignment, “The purpose of mathematics, class/Life participation,” and just watched a 7-minute video of a 12-year-old girl named Severn exercise her voice to build a brighter future in her area of concern; in this case better environmental policy from political leadership at the UN Earth Summit in front of the world’s national leaders.<sup>1</sup>

This assignment for you to use mathematics for real-world improvements in your life requires you understand *paradox*: two facts that are provably accurate but appear unable to exist together. That is: even though your understanding in math is limited, you know enough that you should be a rebel from the world you’ve been born into.

Severn’s limited understanding of her topic for a 12-year-old requires much study and work until she’s ready to propose and enact what should be done to improve the environment. At the same time, she’s perfectly able to criticize what she sees by pointing to obvious problems adults have not solved, and arguably have made worse.

It should also be obvious that real-world solutions will include math to count what’s important in current conditions, and how to measure improvement over time. Related:

- **science** is the study of the real-world that math measures,
- **language** is the art and science to communicate reality,
- **the arts** embrace non-verbal/written language to reveal reality,
- **history and social science** reveals the past to shine light upon today’s real-world conditions,
- **physical education** empowers our bodies to engage in Life at our optimal condition.

It’s up to you to experiment and discover the right balance to rebel in a way that’s constructive for the people around you, and in your own life, as you develop greater expertise in the topics school can greatly improve your knowledge and skills.

You may conclude you really need and appreciate both: being a constructive rebel while always going back to the system to improve your knowledge and skills.

So! Let’s get to work using math for a real-world improvement in your life.

As we’ve considered, math is the language of reality and counts what we see as important. You’ll use math to invent, apply, and record results in a project area of your choice to improve your life in an area of choice.

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<sup>1</sup> Severn Suzuki speaking at UN Earth Summit 1992: <http://www.youtube.com/watch?v=uZsDliXzyAY&feature=related> Transcript: <http://www.sustainablestyle.org/sass/heirbrains/03suzuki.html>

Possible applications we've listed that might be of interest in your consideration:

- Move a countable amount of work to zero.
- Count money to successfully plan for the future and live intelligently in the present.
- Manage time so we have more of it for what we enjoy.
- Play more enjoyably and successfully by using basic statistics (such as baseball batting average, soccer team winning percentage, how much of something must be accomplished to move to the next level of a video game, etc.).

Possible project areas we've listed:

- To succeed better in school, use math to know your class averages. Create a project for improvement.
- To help your family, use math to better manage chores around the house.
- To improve in a hobby, use math to plan getting to the next level through counting a measure for success.
- To feel better, use math to create a project to get enough exercise, sleep, and/or manage your health in some upgraded way.
- To have more time, use math to manage it better.
- To improve your knowledge, research something you're curious or passionate about regarding a math-related topic. Research can include reading, interviewing, watching documentaries and/or analysis, etc.

Some examples from my life:

- I use math to count and target how many tennis games I need to win in a match. This helps because just as in soccer and basketball, you need to run harder than feels comfortable. Having a number of points in a game, games in a set, and having to win two sets in a match allows me to commit to full effort for those numbers. My brother and I used this to design practice drills to improve the same skills we need in competition. In contrast, many players lose focus when they're tired and many players don't practice effectively to improve important real-world skills. My bro and I were successful enough to be ranked the top doubles team in our division (one below the top) for our geographic area of almost 2 million people.
- I like using time for my hobbies, and know I have schoolwork, house chores, and things that come up to do first. Therefore, to intelligently maximize my time, I do all work and chores first, do things that come up cheerfully and immediately (like Grace needing help with homework, Yvonne asking me to do something, etc.). The result is my maximum hobby time to do research and writing to improve economics, end wars, and enjoy my voice to help build a brighter future.
- I use math to measure class success on tests, and have targets for class GPAs. This allows me to best see class progress (or lack), and respond immediately to class and individual needs. Math answers the question how students are doing by having a measurable area of success. This allows a "game" for every unit and semester. This might also be key to a history of high student satisfaction in class, and my personal enjoyment in my work.

Now it's time for you to invent a project using math for your own improvement on your terms!

The questions will walk you through what you need to consider, invent, and do. Write your answers on your own page. You may use your answers for the part you explain to the class :)

**Questions:**

1. Briefly summarize what Severn was talking about to world leaders.
2. Define *paradox*. Explain an example you've observed from others or you.
3. Explain to what degree you want to be a "constructive rebel." Explain to what degree you see it's important for you to use the existing system to improve your education.
4. Explain an area of your life you'd like to use this project to improve.
5. What are the main facts that you see of the current condition of this area? Include math to count something you find important.
6. How long have you complained about this current condition? Explain how your life could be more powerful and enjoyable if you upgrade areas of life you care about more efficiently.
7. Explain the outcome you want for your chosen project. Include math to count something you find important.
8. Invent and write a plan to achieve your outcome. Include math to count something you find important.
9. Go for it! Do your plan. Write what happened. Include math to count and show change for at least one area you said is important in your project.
10. Now that you've enacted your plan, what follow-up do you see needed and/or maintenance to continue? Include math to count something you see as important.
11. Explain the degree you find this assignment helpful in understanding the application of math for real-world improvement in an area you say you care about.

**Class briefing:** You'll tell the class your answers for at least 4-11, and be prepared to also answer 1-3. This means you need to choose a project that you're willing to share publicly. You may use your written answers to help you, AND just talk with us rather than read :)