Engineering 3 Summer Assignment - Problem Recognition

In Engineering 3 / STEM Startups, you will create a startup around an idea you're passionate about. Finding a good idea is one of the hardest parts of starting a startup, so let's start that process now. Ideas are born from recognizing problems as opportunities.

Your assignment, due on the first day of school:

Create a list of 30 problem statements.
- 10 should be directly inspired by your day-to-day life or personal experiences. Include a brief explanation of what inspired the problem statement.
- 10 should be drawn from conversations you have with people during summer or research into current issues or technologies. Include a brief explanation of what inspired the problem statement.
- The last 10 can be completely random. No explanation necessary.

Each problem statement includes **who** needs <u>what</u> and *why*.

Below, I'll break down these components using a problem statement from our STEM Startups 2017-2018 winning team, Electronic Notebooks.

"Who" needs to specific:
- ✗ Bad - people
- ✗ Okay - students
- ✓ Better - high school studaents
- ✓ Best - **high school engineering students at Tesla STEM High School**

"What" focuses on a customer need, NOT a solution:
- ✗ Solution: a notebooking app
- ✗ Solution: a personal assistant who documents everything for them
- ✓ Need: <u>an simpler way to document their engineering work</u>

"Why" should be a surprising or interesting insight:
- ✗ Not specific, too obvious: documentation is annoying
- ✓ Interesting or surprising: *they work with mixed media - writing, photos, drawings, graphs - that's hard to organize during the process*

Putting that all together, here's the example problem statement:
> **High school engineering students at Tesla STEM High School** need <u>a simpler way to document their engineering work</u> because *they work with mixed media - writing, photos, drawings, graphs - that's hard to organize during the process.*

Your problem statements don't need to be big, profound, or unique - they just need to be real!

The best place for your list is the first few pages of a new engineering notebook. Alternate forms - loose paper, a personal journal, or typed on a computer - are fine as well.

Questions? Email Ms. Kong at mkong@lwsd.org.