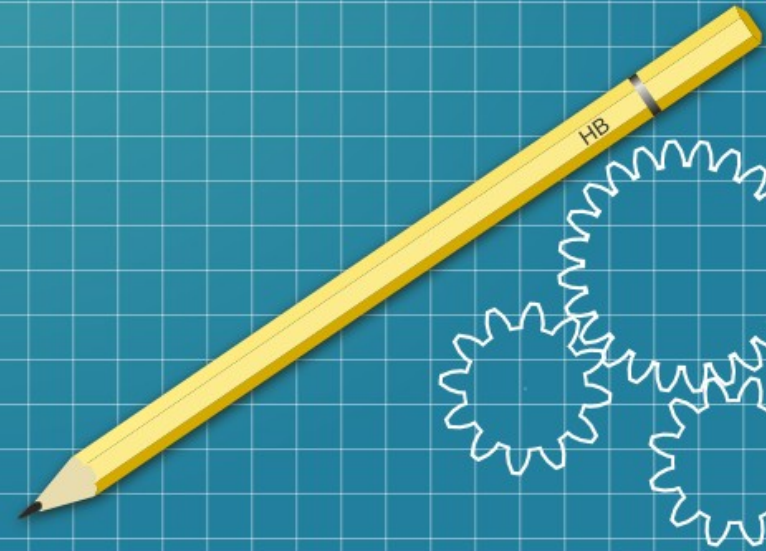


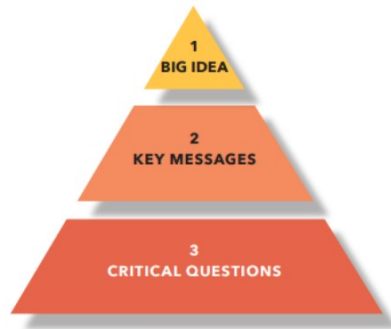
# Project 2 — Milestone 1

By Michael Brodskiy



# Important Research

- Research broken up into two categories: technology and education
  - Technology focused on different options for designs
    - *Cryptography, Stealth Planes, Invisible Ink, Concealed Devices*
  - Education researched how people respond to different stimuli
    - Best to have an interactive component



## Adding Third and Fourth Dimensions (see images, p. 41)

Studies show that visitors remember:

10% of what they hear,
30% of what they read,
50% of what they see,
90% of what they do.

This means that making exhibits three-dimensional, multi-sensory, and interactive will bring about the most learning.

# Design Requirements

- Client Needs
  - Must be engaging and durable (to regular use)
  - Must demonstrate a scientific concept
  - Must be pertinent to the theme
  - Bonus: Collect user data
- Benefits
  - Should benefit the kids attending
  - Educate
- Our Goals and Objectives
  - Accessible
  - Teach EDP
  - Intuitive
  - Lightweight



# Design Constraints

- Most importantly, the design is constrained by our abilities
- Aside from this, we are limited by:
  - Spending (\$100 limit)
  - Size (36" wide by 28" deep)
  - Safe (during transport and use)
  - Total cost (when done) less than \$1,000
  - Must include two interactive elements
  - Must include at least two unique SparkFun components
  - Must contain a 3D printed, CNC milled, or laser cut component





# Formulating a Problem Statement

- Many aforementioned components combined to generate a problem statement
- Some of the most important to us were:
  - Accessibility
  - Progression of technology
  - Teaching relevant information

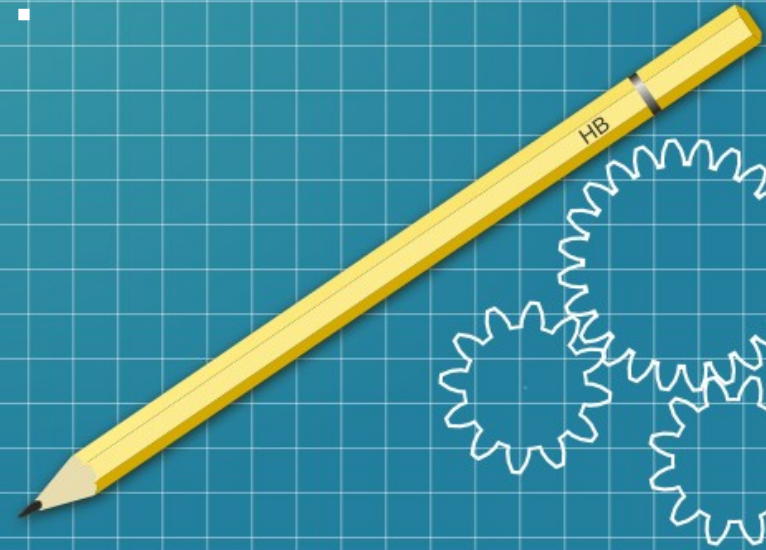


# Our (Abridged) Problem Statement



This project serves to **benefit** the group of **children** that will be attending the showcase and learning about our project. There is not necessarily a need for this group, but the **goal is to educate them** all equally regardless of who they are and where they are coming from. **Presenting is a large part of engineering** and being able to do so in front of children allows us to practice and better understand the basic foundations such as confidently explaining what our project is and how the mechanics work. There are a variety of stated objectives that all stem from one main idea: **creating an interactive spy-based STEM learning experience** for middle and high schoolers. **The exhibition will utilize older, more obsolete forms of technology as inspiration for more modern designs**; It is crucial that the **students recognize the importance of foundational technology**, not just the newest improvements. In terms of the physical presentation method, it **must be easily set up and taken down by a minimal number of people**. It also needs to be able to **handle multiple interactions with children and be accessible** for all kinds of children as well. This means **adjusting the interactive elements**, such as tilting visual elements for kids in wheelchairs that see things on an upwards angle. Similarly, we want **multiple interactive elements** so more than one kid can experience the elements of our project at once.

Any Questions?







This work is licensed under a Creative Commons  
Attribution-ShareAlike 3.0 Unported License.

