***Logbook***

**2021-02-04**

Kyle, Mykael, and Mr. Downey met to talk about getting the science fair project on track and how we need to format our project. Specifically, we talked about if we need a hypothesis for our research project or not.

**2021-02-05**

Kyle and Mykael created a new google document to store our research information.

We collected information from various internet sources one big thing we learned is that every vaccine contains an antigen or blueprint for an antigen which causes your body to increase the production of antibodies. Antibodies are like soldiers for your immune system.

**2021-02-12**

Kyle and Mykael started a discord call and had a chat about what to do next. We talked about how it will be good to write about the body's natural immunity and the theory of herd immunity. Herd immunity is a concept of when enough people are vaccinated the virus will have a harder time spreading from person to person. The immune system works in a way that it finds the unwanted bacteria and sends out some of many white blood cells to kill them.

**2021-02-14**

Today Mykael and Kyle learned about the common ingredients found inside of vaccines. Some antibiotics protect against infection, adjuvants that enhance the immune system response, preservatives preserve the vaccine and make it easier to contain in different temperatures, and stabilizers act as the end product of a vaccine and balance out the chemical reactions happening inside.

**2021-02-19**

This day Mykael and Kyle met with Mr. Downey, our meeting was about how there needs to be an end goal for the project. The end goal we have decided on is to inform people about vaccines, what they do, how they work, etc. We will also be showing our thought processes and research through scientific understanding, words, and how vaccines are free from danger to the human body.

**2021-2-21**

Mykael and Kyle completed an internet activity that explained what your body does with the vaccine. Which in simple terms, a cell searches the body for the vaccine then it breaks down the vaccine and collects the antigen. Individual cells tell large groups of cells that they have retrieved the antigen. Then with the antigen, they create antibodies.

**2021-2-26**

Mykael and Kyle got started on the project and almost completed the method and introduction sections of the format.

**2021-2-28**

Mykael and Kyle Finished the introduction

**2021-3-1**

We took turns reading and reviewing our notes from the note-taking document to review our minds on how to write the research portion of the project.

**2021-3-3**

Today Mykael and kyle took notes on different immune response cells. We learned that there are naive cells that need to interact with an antigen to activate.

**2021-3-4**

Today Mykael wrote some of the research introduction.

**2021-3-5**

Mykael, Kyle, and Mr. Downey met today in a google meet at 1 30 and had a conversation about what we need to add to the project next. We decided that the next steps will be finishing the research and writing up our other extra information sections.

**2021-3-6**

Kyle and Mykael hopped onto their computers early in the morning. We finished the research, attempted to make graphs, worked on the extra information areas, and we formatted everything correctly into each site.

**2021-3-7**

Kyle and Mykael finished writing the extra information sections and wrote up the conclusion.

**2021-3-8**

Today Kyle and Mykael installed a video software called OBS and recorded ourselves reading the project out loud. We then combined it into one video.

**2021-3-9**

Today Mykael and Kyle finished the project video and submitted it to each site.

What a learning experience it has been!