Day 1: I started looking for ideas for my project and found the idea of extracting bismuth from pepto bismol on these two websites: <https://www.popsci.com/diy/article/2012-07/gray-matter-extracting-bismuth-pepto-bismol-tablets/>

<https://www.weareteachers.com/8th-grade-science-projects/>

I decided on the idea of extracting bismuth from pepto bismol because it sounded fun to use different methods to extract an actual piece of metal from a medicine people commonly use. I started doing research on the topic and found really great information from these youtube videos: <https://www.youtube.com/watch?v=grpSfjUImUs>

<https://www.youtube.com/watch?v=jrHxELQ9xWI>

I learned from the videos the procedures that were necessary to conduct the experiment and the scientific method of doing the experiment.

Day 2: After I had completed the necessary research for my project I came up with a list of materials needed.

The list is below:

Pepto bismol tablets from Shoppers Drug Mart

Muriatic acid from Canadian Tire

Blowtorch from Rona

From Dollarama:

Ziplocs

Plastic bowls

Coffee stirrers

Coffee filters

Aluminum foil

Small metal bowl to use as crucible for melting

Glass mason jars

Toothpicks

Funnels

Hammer ( I had one at home)

Safety Equipment:

Goggles to protect eyes against acidic fumes

Plastic gloves to protect hands from contact with acid

Mask to protect from breathing in acidic and metallic fumes

Apron to protect from any other contact with acid

Day 3:

I started on my experiment. I started with crushing the pepto bismol tablets into a fine powder so that the surface area increases so that the dissolving is more efficient. After that I made a dilute solution of six parts water and one part muriatic acid. I put the pepto bismol powder into the solution and let it dissolve but also stirred because much foaming occurs. The pepto bismol was bismuth subsalicylate before it was dissolved in the muriatic acid but when it reacted with the acid the salicylic acid in pepto bismol (which is the cause of the foaming) left the pepto bismol and then the pepto bismol turned into bismuth chloride. Once the dissolving was finished I filtered the solution so as to be rid of any remaining salicylic acid. I put pieces of aluminum foil in the solution that remained after filtering and black flakes started precipitating out of the solution. The aluminum foil reacts with the bismuth chloride in the solution and causes bismuth ions to precipitate out which are the black flakes that can be seen. To check that all of the bismuth had precipitated out I streaked a drop of the solution of a piece of aluminum foil. If the streak turned black then there was still bismuth in it but if it stayed clear that meant that all of the bismuth was out of it. I kept on checking using that method and once it stayed clear I started filtering again. This is where I stopped and waited from the filtering to finish overnight.

Day 4:

The filtering was finished so I continued with the experiment. The liquid remaining after the filter was not needed anymore but the powder in the filter was. I dried the black powder remaining in the filter and then started to try to melt it. I learned that the melting point of bismuth is 271.4 degrees celsius and found out that it is possible on the stove. I tried doing so but it did not work. I then tried in the oven. Still did not work so devised to try tomorrow on the grill outside my house.

Day 5:

I accidentally dropped all of the little piece of bismuth that needed to be melted through the cracks of my deck. I could not retrieve them and was quite frustrated but I knew I had to finish. I had to go to Shoppers Drug Mart again and buy Pepto BIsmol tablets but I had the rest of the materials. I started the steps I listed above again and stopped at the part where I had to do the melting. I worked on the title, table of contents, introduction, question and hypothesis slides.

Day 6: I started melting on the grill outside but it did not really turn out so I had to go to Rona and buy a blowtorch. It finally worked with the blowtorch but I did not need to use a mold since the yield was quite low. I also worked on the materials and procedure slides.

Day 7: I finished the rest of the slides and made my presentation video.