

Science fair logbook: By Sarbajit Sen and Karter Chong.

Date:	Purpose:	Progress:
October 31, 2024	Introduction to science fair	Understand regulations and expectations which are regarding the policy of CYSF. We also discussed types of science projects that we may do and look through sources of where we can get support.
November 3, 2024	Brainstorming ideas	Made a Google Doc full of ideas about what our project might be about and what materials we would need to perform that project. Planned on whether our project would be experimental, research-based, or innovative. We had gone for research-based.
November 7, 2024	Handed in the planning sheets.	Filled out a form which includes basic applications of our project. This was the time when we had first discussed our topic. (The Optogenetics).
November 11, 2024	Gathering the research files.	During this day, we had briefly reviewed some research articles about the topic of optogenetics to get a more clear concept of what we will be writing about.
November 22, 2024	Invited and registered to the CYSF platform.	Our science fair coordinator Ms. Friesen had sent us an invitation to go to the CYSF platform.

November 25, 2024	Beginning to organize on the CYSF platform.	At this time, Karter had made the science fair platform and had sent the invitation to Sarbajit.
November 27, 2024	Having both members of the group to contribute to discuss the basic project information.	After both of the members were able to access, also discussed the ethics and due care, as well as the basic project information.
December 07, 2024	Ethics and Due care approval	CYSF had reviewed the project and approved the ethics and due care form. After the approval, we had unlocked each section that we would later be writing about.
December 10, 2024	Getting a quick overview of all the sections.	We had started writing about what we may put into each section. Also created subtitles to further ensure our topic that we would need to focus on.
December 18, 2024	Making a hypothesis that would be able to support our reasoning throughout our project.	In order to ensure a fairly effective hypothesis, we had to make several predictions based on what we may learn about later on. We also came up with numerous hypotheses and decided on which one is exceptionally formatted.
December 19, 2024	Finding the advantages of the topic of optogenetics.	After looking through various research articles and gaining a deeper idea behind the concept of optogenetics, we had learned about some of the advantages that it has. This will remain as a crucial step because it will

		further ensure our understanding towards applications later on.
December 20, 2024	Fixed some of the references we used and had become more aware of the sources that are being used by us.	When it comes to references, we were looking at how we can properly cite our sources and started to look at trust-worthy websites that we can use for research.
December 21, 2024	We had looked through some interesting Google Scholar articles.	When it comes towards conducting a research-based project, you will heavily rely on your sources. This is why we switched towards Google Scholar articles, which would be more trusted as they are actual research articles. We had also started looking towards the articles that mostly relate to our purpose of the project, and we explored what makes them related.
December 24, 2024	Watched a YouTube video which highlighted plenty amount of information about the optogenetic monitor and what it is capable to do.	In addition to our research behind the purpose of optogenetics, the video that was watched had deeply identified why the optogenetic monitor and how it can monitor certain things in an organism's body. This video also included the person who had come up with the way of optogenetic monitor, and that man is Karl Deisseroth.
December 27, 2024	Began to look at	We had gone through research

	<p>pictures and find more complex diagrams about the topic.</p>	<p>articles and started to investigate towards picture and trying to understand what the picture represents. We also began to cite our image and some parts of our writing in MLA format in order to paste it into the CYSF platform. For our project, we had begun to dig deeper and started to plan out what we should write about in the data section, as we had to take some time to organize our information in sequence.</p>
December 29, 2024	<p>Added more descriptions for our rationale.</p>	<p>We had gone over parts of the rationale, which goes through some importances and benefits that the optogenetic monitor can provide us with.</p>
December 31, 2024	<p>Focussed towards the applications part.</p>	<p>We had made a call and had worked on the applications of the somatosensory system and had researched about it.</p>
January 3, 2025	<p>Added more descriptions towards the applications and had edited the grammar mistakes.</p>	<p>During this time, we had focussed more deeply into the somatosensory descriptions and had made sure that the writing had clarity.</p>
January 7, 2025	<p>Tried to finalize our applications about the somatosensory system.</p>	<p>When it came to writing down our rationale and applications, some of our time had to be spent there because we were mindful in terms of really identifying what exact can activities in our life fall into. We</p>

		investigate the terms of the somatosensory system.
January 20, 2025	Started to investigate towards the animal models which shows information and has methods connected to the optogenetics.	We had begun to write more about the related topics part, which include things such as how certain animals can sense electromagnetic radiation in the environment. We also got to learn about how can the optogenetics track and monitor the performance of certain rodents.
February 7, 2025	Began to use in-text-citations	Because we had now begun to look into more comprehensive research articles, we had become more aware of avoiding plagiarism and had read some citation rules. These include how copying a sentence from an article requires quotations marks and the citations of the article, while in text citations include paraphrasing words in a sentence and still using brackets to cite the main source.
February 12, 2025	Made a to-do list, which is a document underlining all our plans and researches we should continue to do in order to make our writing more neatly organized.	By this time, we had begun to perform lots of research based on the parts of the optogenetics. We had needed to make a document or a list of things that we should do in order to have an effective writing performance. Topics like the optogenetics require lots of research on other key fields.

February 15, 2025	Researched with some added images and writing about them in order to describe how they can play a role in the topic of optogenetics.	As found in our research articles, the optogenetics require many steps in order to perform a successful experiment in order to stimulate the neuron cells effectively. During this time, we had looked through some diagrams such as the steps to optogenetics. This diagram we had researched about had also taught us some important things about how the process of optogenetics works.
February 20, 2025	Wrote another application which adds on to the somatosensory system but focuses more in the topic of optogenetics.	The optogenetic is an excellent idea as it may have impacts on many other things. The previous one represents our understanding based on the applications of the somatosensory system, while this one is more about the optogenetics. In this one, we had focussed more about what diseases can the optogenetics tackle. Also, we had written about the disease that can be handled by the optogenetics.
February 25, 2025	Added details on the data section, which underlines topics such as the hyperpolarizing cells and depolarizing cells.	We had inserted an image, that image consists of a diagram showing parts of the neural cells which go into action after the optogenetics are applied.
March 1, 2025	We had written our third application.	The third application that has been created was about

		optrodes and this had significantly related to our topic of the way that the optogenetic flashes light. It also talks about what type of light is used during the performance of optogenetics.
March 4, 2025	We had realized that the tri fold that we had previously bought was too small in order to fit all our information.	The research based project that we had conducted has many research papers, and putting them all in one small tri fold had become a difficulty for us. This is why we did not glue our papers yet.
March 6, 2025	Came down to one of the schoolrooms and had talked to a mentor who had given me a few tips on what I should do in order to make my science fair tri fold more effective.	During this time, I had also asked about the tri fold size, and she had given me feedback saying that the tri fold may be too small for our project and that we would need a newer tri fold. We also got some advice on what our writing in the CYSF platform should look like.
March 8, 2025	We had bought the newer tri fold during this time.	After looking through the store, we did not have enough time in order to actually buy a large sized one, so instead we stacked two medium-sized ones which had also been effective.
March 10, 2025	Summarize the overall information and make sure in order to put it in the tri fold.	We had to shorten parts of the writing so it would still remain good on the tri fold.

March 12, 2025	Went over to house and had met to finalize our tri fold.	This includes any last actions we took towards the tri fold.
March 13, 2025	In School Science Fair!!!	Went over to the school and everyone in the room had given some feedback about the project and that had further given us an understanding of what it would, it is like during the actual judging day.
March 15, 2025	Completed some important sections at the platform.	In order to finish up the project, we would have to checkmark certain things like the acknowledgements, declarations, presentations, etc.
March 16, 2025	Completed the additional report.	The additional report of our project summarizes our understanding of the overall concept.