

# Science Fair Logbook 2023~2024

October 12, 2023

- Attended first science fair meeting
- Started brainstorming

Todo:

- Think of Science Fair Project
- Figure out partner
- Start google docs

October 16, 2023

- Started google docs
- Continued brainstorming
- Joined google classroom

Todo:

- Think of Science Fair Project
- Figure out Partner (DUE TODAY!)

October 18, 2023

- Secured Partner: Rachel
- Continued brain storming
- Shared Docs with Rachel

Brainstorming:

- ★ Both art and music lovers
  - Functionality Woodwind VS Brass? (Experiment)
  - Straw Instruments? (Innovation)
  - Durability/flexibility of paintbrushes? (Experiment)
- ★ Contributing to the school
  - Innovation on the lockers? (Innovation)
  - Easier way to move between classes? (Innovation/Experiment)
  - More efficient Bus Routes? (Research/Experiment/Innovation)

Todo:

- Figure out a topic
- Get Rachel in the google classroom
- Get more sleep :)

## October 28, 2023

- Project ideas?:
- ★ Testing the pain endurance between girls and boys (unlikely)
  - Got the idea from science class when asked "Would you rather get hit by a tennis ball moving super DUPER fast or a cannon ball moving slower
  - Don't think it's do-able though, too many uncontrollable variables, just a thought
- ★ Does milk actually help people grow taller?
  - Brainstorming this idea from last year actually
  - Lots of uncontrollable variables, don't think it's do-able
  - Require human participation
- ★ Some brain stuff thingy
  - I have always been fascinated by how the brain works and how your mental health fiddles with your brain
  - Idk what the heck to do
- ★ Some astrology stuff?
  - Know a little bit about astrology and zodiac signs and stuff, not sure if it's SCIENCE though...
  - Idk how to do that sort of stuff
  - Probably requires money

### Todo:

- Check in with Rachel & see if she have any brewing ideas
- Sign participation form
- REMIND RACHEL TO SIGN PARTICIPATION FORM
- Decide on a project by...first week of November I guess
- Get more sleep

Note To Self: Your "A" key is kinda laggy Zoe, get that fixed!

## December 1st, 2023

- Been really busy with Drama Club
- Need to decide on a project ASAP!
- Talked with Rachel on project ideas

## December 2nd, 2023

- Talked with rachel on Project idea
  - ★ Glass Goblet Project

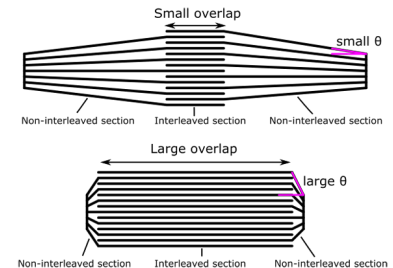


Take a normal glass goblet, then fill it up with water. Put a piece of paper on top, flip it upside down. The water won't leak, however, it will make a perfect lid. Then test how much weight it would require to pull the lid down

Hypothesis: The bigger the diameter of the goblet is, the more weight it needs

### ★ Friction Book Project

How much force it needed to pull two books apart and how will the number of pages in the books affect it using a Newton Meter



December 3rd, 2023

- Discussed project ideas with Rachel
  - ★ Glass Goblet Project (How does the diameter of the glass goblet affect the amount of weight needed to pull the lid down?)
  - ★ Book Project (How does the number of pages affect the amount of force needed to pull them apart?)
  - ★ "Let them eat cake!" Project (Can the French population actually theoretically survive on cakes during the French Revolution?)
  - ★ Vaccines/Diseases Project?
  - ★ Preventing Lab Leaks Project?
  - ★ Studying Cells?
- ❖ Biology Projects?
  - The evolution of viruses?
  - Studying Immune systems?
  - How can this generation prepare themselves the best to brace the rapidly changing future?
- Decided on the project & completed *Project Information Assignment*

Simplified Project Information Docs:

**Project Title:** Study of the Human Diseases Related to Stomach Pain (A Small Incident that Led to A Massive Investigation)

**Project Description:**

- Rachel was attacked by a sudden pain in the stomach
- Her symptoms include extreme pain in the central stomach, dimming vision and coldness/numbness.

- Hospital did not provide specific information about the cause.
- Investigate further on diseases that had similar symptoms and ways to prevent them.
- We will list specific and detailed research about every possible disease, including its symptoms, causes, location, imaging, death rate, surgery, medication and many others.
- The diseases will force me to retrace the events that happened before the pain, such as the combination of foods, the act of running rapidly in the cold and the amount of sleep.
- The tri-fold will be quite full at the end.

Will your project involve human participants? yes / **no**

Will your project involve animal subjects? yes / **no**

Divisions: (Choose only one)

- ~~Life and Health Sciences (A Life and Health Sciences project deals with living organisms, including their organization, processes and relationships to each other, and their environment. This includes fields such as: biology, botany, zoology, animal behaviour, environment/ecology, health/medicine, food/nutrition, and social sciences such as anthropology and psychology.)~~
- Physical and Chemical Sciences** (A Physical and Chemical Sciences project examines the nature and interaction of energy and/or non-living matter. This includes fields such as: engineering, earth sciences, physics, chemistry, and astronomy.)
- Mathematical and Computing Sciences** (A Mathematical and Computer sciences project uses mathematical models and/or computer equipment or programs to simulate or solve theoretical or real-world problems. Projects that create or improve a computer program or computer hardware belong in this Division. Projects using computers for the sole purpose of storing and handling data do not belong in this Division; instead, they belong in the Division that best describes the subject matter of the data.)
- Consumer Goods/Food Sciences** (A Consumer Goods project performs a comparison of products or foods by means of product testing, taste tests, price/value comparisons or uses. Test or compare consumer goods or food products. Food Sciences projects examine food systems and interactions between ingredients, including shelf-life studies, and microbiological and chemical testing. Projects in this category might also fit in the Physical/Chemical Sciences, Health/Medical Sciences or Life/Biological Sciences categories, depending on the nature of the project.)

Type of Project: (choose one)

- Experimental project:** These projects involve testing a hypothesis under controlled conditions using the scientific method. As the researcher, you control several variables, manipulate one variable in a controlled way, and then measure, record and analyze the responding variable, to reach your conclusion.
- Innovation projects:** These projects focus on the development and evaluation of innovative devices, models or techniques in technology, engineering or computers (hardware or software). As the researcher, you should demonstrate an understanding of the properties of the materials/methods used, the reasons for choosing them, and the effectiveness of your design. Test your innovation and modify it if you discover shortcomings during testing.
- ~~**Study Projects:** These projects involve the collection and analysis of data to reveal evidence of a fact or a situation of scientific interest. They could include a study of cause and effect relationships or theoretical investigations of scientific data.~~

**Topics: (Choose up to four)**

- Astronomy/Astrophysics** (study of any aspect of the material universe beyond the earth's atmosphere)
- Biochemistry** (study of chemical processes in living organisms)
- Botany/Plant Science** (study of plant life)
- Chemistry** ( study of the compositions, behaviour, structure and properties of matter (atoms, molecules, crystals) and how they change during a chemical reaction)
- Computer Science** (development of computer equipment or programs, use of a computer to accomplish a task where the data is of secondary significance, projects using computers for the sole purpose of storing and handling data do not belong in this Topic; instead, they belong in the Topic that best describes the subject matter of the data, in many cases, the topic of Engineering might also apply to projects in Computer Science)
- Conservation** (study of Earth's biodiversity with the aim of protecting plants, animals and their ecosystems)
- Consumer Goods** (testing or comparison of consumer goods or food products)
- Corrosion** (study of the wearing away of metals due to chemical reactions, a common example is rusting of metals)
- Earth Science** (study of the planet Earth, including atmosphere, oceans, biosphere and the solid earth, geology, oceanography and climatology projects may all be included in this topic)

- Engineering** (application of knowledge of physical processes to solve a problem or achieve a purpose, normally focuses on a new process or a new product, for example, a study of Bernoulli's Principle would come under the topic of Physical Science, whereas the application of such a principle to improve aerodynamics and wing design would come under the topic of Engineering)
- Environmental Science** (study of biological and/or physical factors within an environment, ecology, pollution, resource management, sustainable development and capture/recapture projects may all be included in this topic, depending on the nature of the project, the topics of Earth, Life, Physical or Chemical Sciences might also apply to projects in Environmental Science)
- Food Science** (study of nutrition, food systems and interactions between ingredients, including shelf-life studies and microbiological and chemical testing)
- Forensics** (application of science to answer questions of a legal nature, projects in this topic study trace evidence and can be chemical, biological or physical in nature)
- ~~Gastroenterology (study of the digestive system)~~
- Genetics/Molecular Biology/Microbial Biology**(study of biology at the molecular or cellular level, genetics, heredity and variation, interactions between various systems in a cell, and microorganisms, such as viruses and bacteria, may all be included in this topic)
- ~~Health Science (study of human life or lifestyle and its translation into improved health for humans, including effective health services and products, physiology, genetics, disease, nutrition, pharmacy, psychology, and the health of populations may all be included in this topic, projects in this topic include animal research only if it has a direct application to human health)~~
- Heating/Cooling** (study of indoor/outdoor air quality, or a study involving heating, ventilation, or air conditioning)
- ~~Life Science (study of living organisms, including their organization, processes and relationships to each other and their environment, biology, plant studies, animal behaviour, ecology, health, and psychology may all be included in this topic)~~
- Mapping** (study that uses a map to communicate the results or analysis of a scientific problem)
- Materials Science** (study of the fundamental properties and characteristics of materials, projects in this topic study properties of matter and their application to science and engineering)
- Mathematical Science** (use of mathematical models to solve theoretical problems, in many cases the topic of Physical Science might also apply to projects in Mathematical Science)

- Petroleum Science** (study of the discovery, production and utilization of oil and natural gas)
- Physical Science** (study of energy and/or non-living matter)
- Pollution** (study of contaminants in a natural environment, including pollution of air, water and soil)
- Psychology** (study of mental processes and behaviours)
- Renewable Energy** (study of naturally replenished energy from natural resources including sunlight, wind, rain tides, geothermal heat)
- Social Science** (study of how people learn, behave and interact; and of their relationships within society, psychology, sociology, communication studies, anthropology and education/learning may all be included in this topic)
- Technology** (application of science to solve a problem)
- Vision/Ophthalmology** (study of the anatomy, physiology and diseases of the eye)

## January 1st, 2024

- Started a little background research on what is happening during a stomach ache on my own

## January 2nd, 2024

- First "Big Researching Meeting"!
- Met up with Rachel in the Library

## Plan:

- List 10 possible illness / disease
- Their possible symptoms, causes, location, imaging, death rate, sugerication

## January 3rd, 2024

- Second "Big Research Meeting" at Rachel's house
- Continued Background Research
- Planning on interviewing Angelina's mom! (who is a doctor)

### Plan for tomorrow:

- Finish Cholecystitis
- Write 5 questions for Angelina's Mom
- Start on a new disease if possible

## January 4, 2024

- Continued Background Research
- Wrote Questions for Interview
- Cholecystitis almost finished

Plan for tomorrow:

- FINISH CHOLECYSTITIS
- Conduct interview
- 

## January 5, 2024

- Third "Big Research Meeting" at the Library
- Got interrupted by lockdown (real!)

## February 27, 2024

- Forgot to update my logbook, here's what we did in the past months:
  - Rachel got Appendicitis
    - added Personal History section
  - Almost finished with Appendicitis, Gastroenteritis, and Cholecystitis
  - Added (brought back) Food Poisoning
  - Searched the pronunciations of complicated words
  - Finished MLA Format Citations in Appendicitis section

**SCIENCE FAIR IS ONE WEEK AWAY!**

Plan for future:

- Finish researching
- Get measurements for the trifold
- Plan/design "wallpaper"
- Get "wallpaper" printed
- Put together trifold
- Write a presentation

## February 29, 2024

- Finished citations
- Got the measurements for the trifold

**SCIENCE FAIR IS 4 DAYS AWAY!**



Plan for future:

Same things as last time

- Finish researching
- Plan/design "wallpaper"
- Get "wallpaper" printed
- Put together trifold
- Write a presentation

March 1, 2024

- Probably the last big research session we have since we both have things on Saturday and Sunday
- LET'S FINISH IT UP!!

### SCIENCE FAIR IS 3 DAYS AWAY!

- Figured out the Staples "wallpaper" thing, thanks Avni's mom!
  - Have to be in a pdf
  - Decided to print separately, then cut it out, then double-side tape it on
  - Painting the background
- Decided background colors would be white and gold
- Finished all the research
- Finished plan/designing "wallpaper"

Plan for future:

- Get "wallpaper" printed
- Put together trifold
- Write a presentation

March 2, 2024

- Printed out "wallpaper"
- Started on the frame
- New ideas:
  - Stomach model? (provided by Rachel's mom)
  - A check-list for identifying diseases?
  - Demonstration of the pain?

Tomorrow:

Zoe:

1. Checklist
2. Design "the 3 big chunks"
3. Put together trifold
4. Write script for presentation

Rachel:

1. Work on graphs
2. Print the 3 big chunks
3. Put together trifold
4. Write script for presentation

March 3, 2024

- Finished wrapping up everything, the trifold is looking good!

### SCIENCE FAIR IS TOMORROW!

Here is the schedule of tomorrow Ms.Grelowski sent us:

The fair takes place from 8:00am-11:30pm which means you will be missing your morning classes. **Please let your teachers know.**

(French-Ms.Martin, Art-Mr.Sprau/Computer Apps-Mr.Mcgraph name. G/H-Mrs.Webb)

**8:00am-8:45am:** Tri Fold drop off and set up in the PAC.

**8:45am-11:30pm:** Judging. You will be judged by five different judges during this time. For each judge, your presentation itself should be no longer than 10 minutes in order to give them ample time to ask any questions they may have. I would highly recommend looking at the judging rubrics posted under Classwork prior to tomorrow so that you are aware what the judges will be using. During your presentation, you should give an overview of your project, how you conducted it, and the results. Please either bring a personal laptop or let us know tomorrow that you need one in order to show them your logbook.

**11:30pm-12:15:** Project clean up.



