Science Faire Log Book

January 3, 2026
- Decided I wanted to do something physics related
- Looked into sound, vibration, and acoustics
- Researched about physics concepts

January 25, 2026
- Choose a topic for my project
- Found the concepts of Chladni Plates very interesting as they helped us visualize sound

February 2, 2026
- Decided a name for my project
- Wrote some basic information for it, briefly explaining what I will be researching

Outlined what I will be researching:
- How frequency affects patterns?
- Standing waves and Resonance
- Chladni Law
- Cymatics

February 3, 2026
- Completed and submitted my ethics form
- Confirmed no Human or animal testing was involved

February 7, 2026
Problem and Research Question Development:
- Developed background information about acoustics and cymatics
- Did some research on Ernest Chladni
- Still struggled to understand how those patterns actually occurred on the Chladni Plates
- Created a Research Question

February 10, 2026
Method:
Explained how the Chladni Plate is set-up
- A thin metal plate (20 cm x 20 cm) is placed on the center of the vibration generator.
- Connect the vibration generator to the signal generator.
- Sprinkle sand or salt on the thin plate.
- As a result, various patterns will be formed from resonant frequencies. and the nodal and anti-nodal lines can be viewed.
- They can be repeated on other shaped plates to compare the patterns.

February 15, 2026

- Got my speaker so I created the Diy Chladni Experiment using the Ceramic wrap, salt, a container, elastic, and the mini speaker
- Identified the sources of errors and provided improvements

February 20,2026

- Collected some data on frequency vs pattern complexity
- Understood as frequency increases, the pattern become more complex

February 25, 2026

- Worked on my Research
- Completed the History part about Chladni Plates
- Explained how they work, created different images and labelled them
- Confirmed that frequency directly affects the patterns complexity
- Understood that resonance is necessary for the patterns to form
- Understood that the standing waves create the nodal lines
- Connected the experiments to the Chladni Law and wave equation

March 1, 2026

- Made my presentation and did final touches
- All Done!!