

### **Day 1 [Feb 13]:**

- Gathering and labelling of materials
  - Labelled batteries
- Started trial for secondary cells in both fridge and freezer for approx. 1 hour
  - Lack of precautions resulted in short circuit and frying of batteries
    - Experiment to be restarted due to inaccurate data
    - Short circuiting also caused overheating and melting of battery containers

### **Day 2 [Feb 14]:**

- Continuation of rechargeable battery experiment.
  - Melted battery containers taped back together with electrical tape
  - Relabelled new batteries, disposed of fried batteries
  - Electric tape is used this time to prevent short circuiting
- Experiment starts again (secondary cells in fridge and freezer)
  - Parent inadvertently stops one circuit (freezer) from running by dropping food onto it.
    - I am unaware of when this occurred, meaning I must restart the experiment again else I risk inaccurate data — as time cannot simply be guessed.
- However, secondary cell fridge experiment worked out and results were yielded

### **Day 3 [Feb 20]:**

Start of the remaining three experiments

- The primary cells are placed into their containers and set off running in the fridge and freezer
- The freezer experiment for secondary cells is also restarted

Encounter another problem

- Due to an unstrategic placement of the battery switches, the switches switched the primary circuit in the fridge off sometime during the experiment.
  - It required another restart because there was no idea as to when the switch switched the circuit off
- However, the primary and secondary freezer experiments were completed

### **Day 4 [Feb 21]:**

Restarting the primary fridge experiment

- 25 minutes pass, and the circuit stops running completely.
  - Strangely, the voltage of one of the batteries was still high

- However, the voltage of the other was at 0.004V, and was not showing signs of rising
- Without any more secondary cells to run experiments with, we scratched the data from the fridge.

### **Day 5 [Feb 28]:**

Finished a few parts of the CYSF website reqs.

- Basic project info
- Ethics due care 2A
- Hypothesis
- Research
- Variables
- Procedure

Also finished skeletons of other fair reqs.

- Observations
- Conclusions
- Application
- Analysis

### **Day 6 [March 1]**

Finalized CYSF website requirements

- Observations
- Conclusions
- Application
- Analysis
- Attachments
- Presentation

Recorded presentation for upload

FINISH

### **Day 1 - January 31**

- Set up experiment

- Built circuits
- Set up sous vide and water bath
- Labelled batteries
- Gathered materials (stopwatch)

### **Day 2 - February 1**

- Began experiment for 20 degrees C
- Placed both batteries into cartridges, and then placed these batteries into the water bath with the sous vide that is at 20 degrees celsius
- Measured the voltage every 20 minutes
- No errors in the duration of the experiment
- Finished 20 degree C experiment during today's experimentation
- Measured the battery life after both motors had stopped running

### **Day 3 - February 2**

- Began experiment for 50 degrees C
- Set up the experiment
  - Set the sous vide to 50 degrees C
  - Placed batteries into cartridges, and then placed cartridges into water bath
- Motor stopped around 10 minutes into experiment
  - Likely an individual error in the battery itself
  - Had to restart 50 degree C experiment
- Replaced batteries and set up experiment
- Measured voltage every 20 minutes
- Rest of the experimentation for Day 3 had no errors
- Finished 50 degree C experiment during today's experimentation
- Measured the battery life after both motors had stopped running