

Names:

Design Log

Stage 1: Brainstorming

Write down any ideas that you have about how to complete the challenge successfully. Include sketches and materials you have in mind.

List variables that you think you need to control? How are you going to control these variables?

Stage 2: Research

Find out what there is to know about this challenge. Write down questions you want to research. (How to effectively control specific variables? What types of materials are best to use?) After you write down what you have learned, go back to Stage 1. In a **different color**, make any changes/additions to your original ideas.

Stage 3: Design

Make drawings and list materials you will need to make your apparatus.

After Stage 4 and editing your drafts above, sketch the final version of your design below.

Stage 4: Construction and Testing

Construct your design. Record the raw data from your trials below (include date of trial). After each trial, write one suggestion to improve your design. Then go back to Stage 3 and make changes/additions to your design in a **different color**.

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Stage 5: Redesign

Based on your initial tests and design modifications, re-make and re-test your electrochemical cell with motor and fan. Sketch the final version of your design

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Stage 6: Evaluation

Evaluate your design from Step 5 based on the original design in Step 1. (How, if at all, was your design improved?) Evaluate the use of electrochemical cells as a source of energy. (How is electrochemistry being used and how could it be improved? You may need to do additional research to answer this question.)