

Logbook.

Nov 27th: Started and chose the topic of a Hydro-kinetic portable machine to create energy from a crank that moves a propeller to create a hydrokinetic tide.

Nov 27th: Added all subtopics of the Innovation project on slide.

Nov 28th: Made the first 3 dimensional model of the Hydro-Kinetic machine out of paper.

Nov 29th: Finalize and chose the topic of The hydro-Machine.

Nov 29th: Chose the title of "From Water to Watts: Portable Hydrokinetic Innovation."

December 3th: Started Shopping list and found acrylic plastic for glass part of the model and found seal foam on.

December 4th: Ordered the items on Amazon and began making the model with the materials we already had at home.

December 6th: Added a new theme to slides for a more simplistic and modern theme to look better on trifold.

December 10th: On this day we had brought the logbook and trifold for the in-school science fair.

December 22nd: Started and completed the Abstract Slide and Hypothesis slide. We had also bought and received a DC motor kit from Amazon which helped us get propellers and motors for our project.

Abstract: The purpose of our project is to create a more convenient and new technology to make power using hydrokinetic energy for anyone to use, which is eco-friendly, renewable, and can be used any time of the day! Our machine will be used to generate energy on a small scale, to prove that it is possible to create a portable hydro-Kinetic machine. If we succeed, then our model could theoretically be scaled up to generate larger amounts of energy, or could be enhanced and possibly implemented in a practical situation. In conclusion, we want our project to be able to work and create a new advancement in technology in the renewable energy field in the theoretical future.

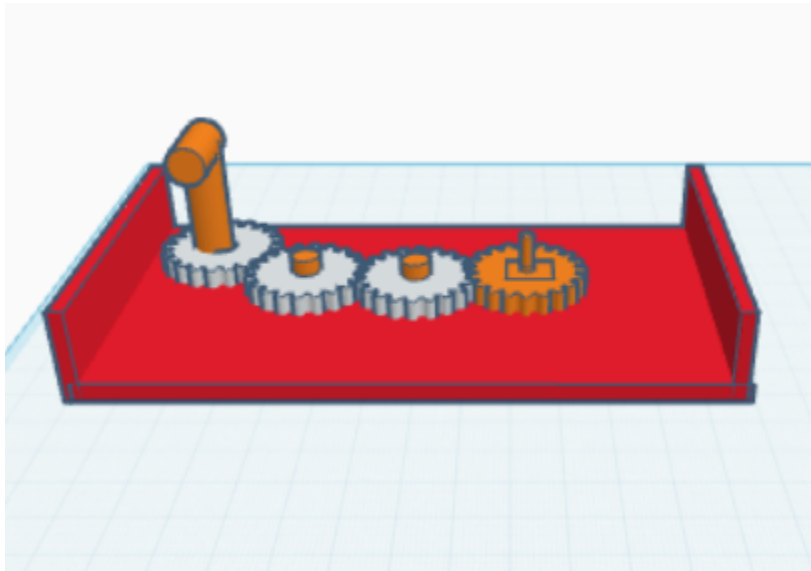
Hypothesis: Our hypothesis is that we will create a successful portable hydrokinetic powered power bank using the science of renewable energy called 'Hydrokinetic Energy.' We plan to prove this theory by using a crank to manually rotate a propeller, which moves the water in the form of a tide towards a second propeller which spins due to its structure. This movement generates hydrokinetic energy which becomes electricity through the motor. In this process, mechanical energy is converted to hydrokinetic, back to mechanical and then electric.

December 29th: On this day we started working on our application and putting in a lot of

content into it.

December 30th: We faced a problem of us using the false item of a DC motor when we should have been using a Dynamo. Now that we know that we have to buy a dynamo which is a struggle due to the large size and large price.

January 2nd: We had started working and measuring the size of our model and had started our first phase of our 3D model. In this 3D model we first created the handle for the hand crank and made it fit to a gear, we created another gear that will hold the propeller to move the water and a couple other gears to make a space between the hand crank and the propeller crank as shown in the image.



January 3rd: We started printing out the model and ran into trouble as the 3D printer kept destroying the print and wouldn't glue to the surface of the print. We also noticed that we could turn the hand crank the opposite way and make it move only one gear to save PLA and space to move the fan which makes it much more efficient!

January 4th: We started organising our project to get it done quicker within the week we have left of in class judging. We were able to organise our work and complete 4/10 slides and add some images.

January 5th: Worked on table and finished one column and finalized hypothesis and abstract. Fixed all titles to be cut out with the text and look appealing on the board. We finished our title slide and cut it out and pasted it on the trifold simultaneously which came out surprisingly well.

January 6th: Finished all of the table and started adding images, 5/13 images left and may be changed based on layout.

January 7th: Finished the table of information and is to be printed. We also included all citations for that table, so now we need to fix up the citations format and make it fit.

January 8th: We fixed up the rest of the citations and added a lot more images and formatted each one with a title explaining them. We received our dynamo today and noticed one problem, it was really a change of plans for our idea of something portable, and feels heavier than a normal power bank, the dynamo does work by our first look but we haven't fully tried it out yet with an electric meter, we now do have another setback of creating the fan much bigger making the case much bigger meaning we may have to remodel the case.

January 9th: We finally finished citations and made it fit onto the paper. We also started brainstorming ways of making the dynamo propellor to be moved by water.

January 10th: We got together and worked on the trifold. We didn't complete it, but we were fairly close.

January 11th: We got together again and we finished the trifold. We also started, but did not complete the model.

January 12th: Abdul-Rahman completed the model at his home, and we finalised our speech.

January 13th: We revised and practised our speech.

January 15th: We had our in-class presentations.

January 20th: Results announced! We got 1st place!

January 29th: In school science fair.

January 30th: Results announced! We got 2nd place!

February 3rd: Submitted ethics form and basic information.

February 17th: Began transferring information from our google slide to the CYSF website.

March 10: Worked on CYSF platform, started adding more to method and analysis

March 11: Took the participant image and created the project image today and uploaded it on CYSF Platform.

March 13: We talked with an experienced science fair adult (Mr. Colin Fair) and got a lot of feedback and applied it to our project. We decided to move the propeller to the side to make the water move and instead of a propellor we will use a water wheel or a paddle wheel

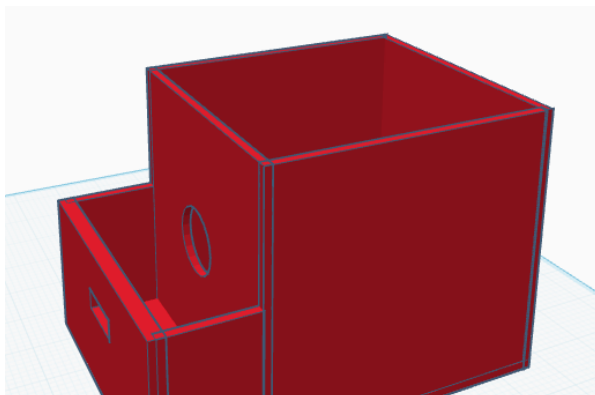
March 14: We recorded our video for our CYSF and are going to edit it soon and upload it to CYSF. We also contacted a micro dynamo owner and chose this specific one:

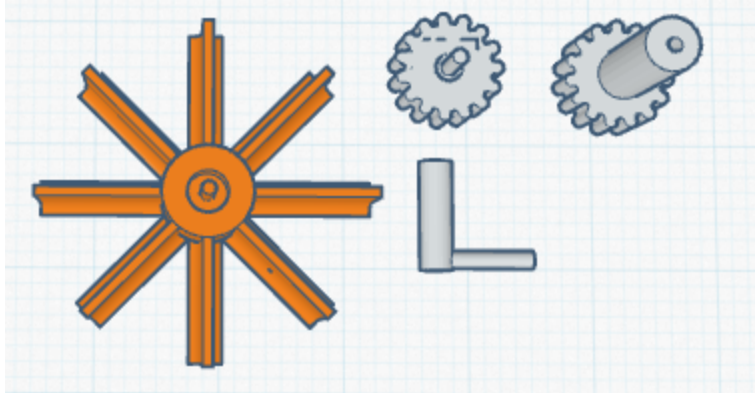


It came with the dynamo, an LED and a turbine which helped us for our project itself, But doing the math, the turbine is 4 inches on both sides, meaning we had to change our model again.

March 17: We worked a lot on the CYSF platform and refined the model again and planned for future steps to do, we also started working on our new slideshow for our trifold that we are soon to get on March 19-20th.

March 18: We made our project much smaller to optimize it and make the wave move the turbine easier. We also made the hand crank from the side and are thinking to move the entire electrical compartment to the side too. We also created the hand crank by using a gear and a unique model. We also got a lot of company names, phone numbers and email addresses that we will call to try and get our project by then. We also ordered the dynamo by then and





March 19: We are almost done with our CYSF platform work, we completed the method even more and now we just need to complete our table chart comparing the two models.