



Multisource Generator

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-Graham Fougrousse

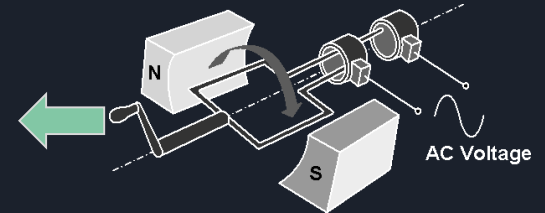
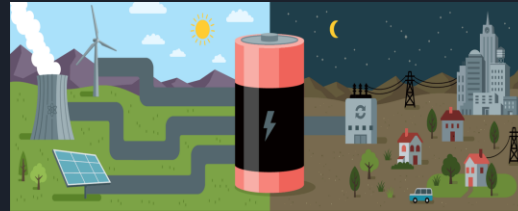
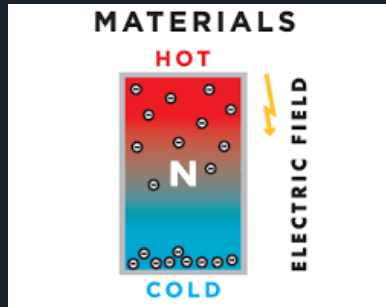
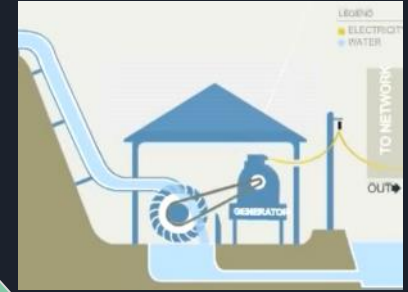
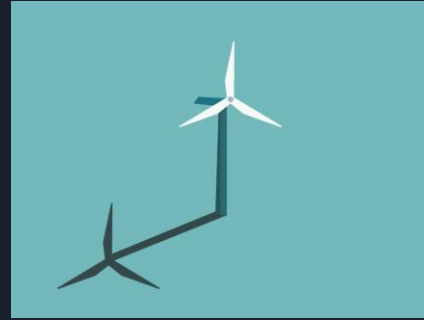
Introduction


Conventional energy sources are a thing of the past, the idea for ecologically safe energy sources are part of a more sustainable future.



Source: istockphoto.com

Project overview





**How will this
service the
community?**



Curriculum: Course Objectives



- Developed a basic understanding graphs and and unit conversion.
- Developed problem solving, time management and communication skills
- Work in teams to solve and present engineering problems.
- Understood the various engineering disciplines that would work on this project.
- We learned how to be proficient in Word, Excel, and PowerPoint.



Resources and Technology

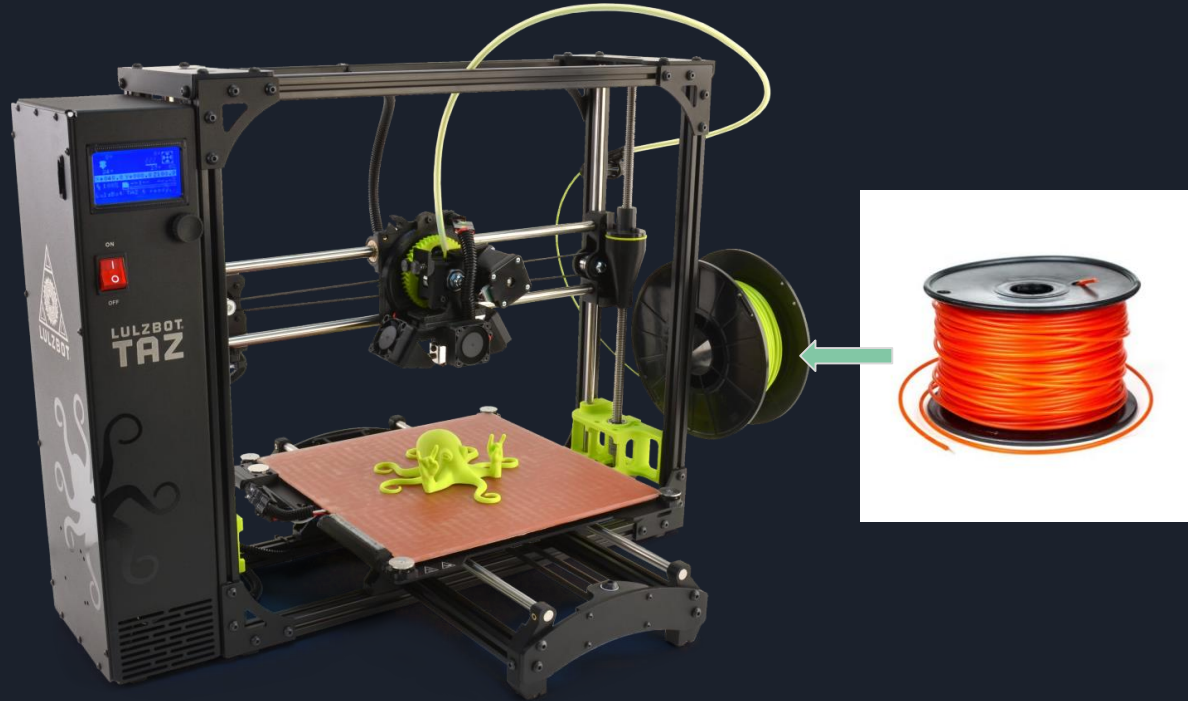
F AUTODESK® FUSION 360™

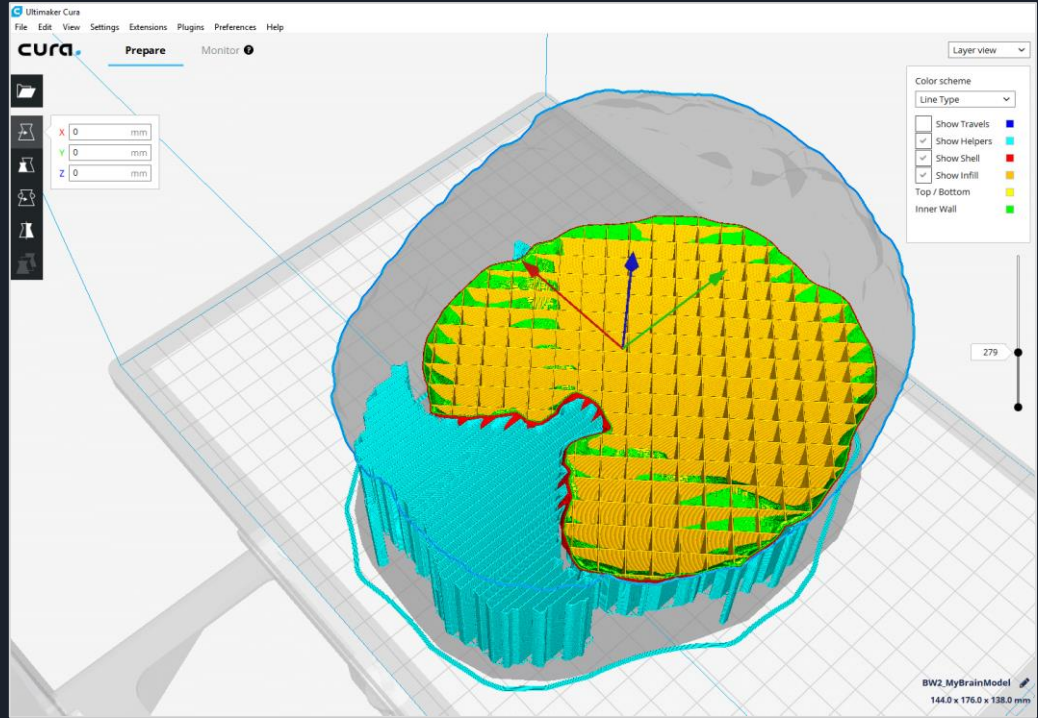


A AUTODESK.

3D Printer

- Makes 3D objects out of a plastic material called filament.
- Used to make the specialized parts







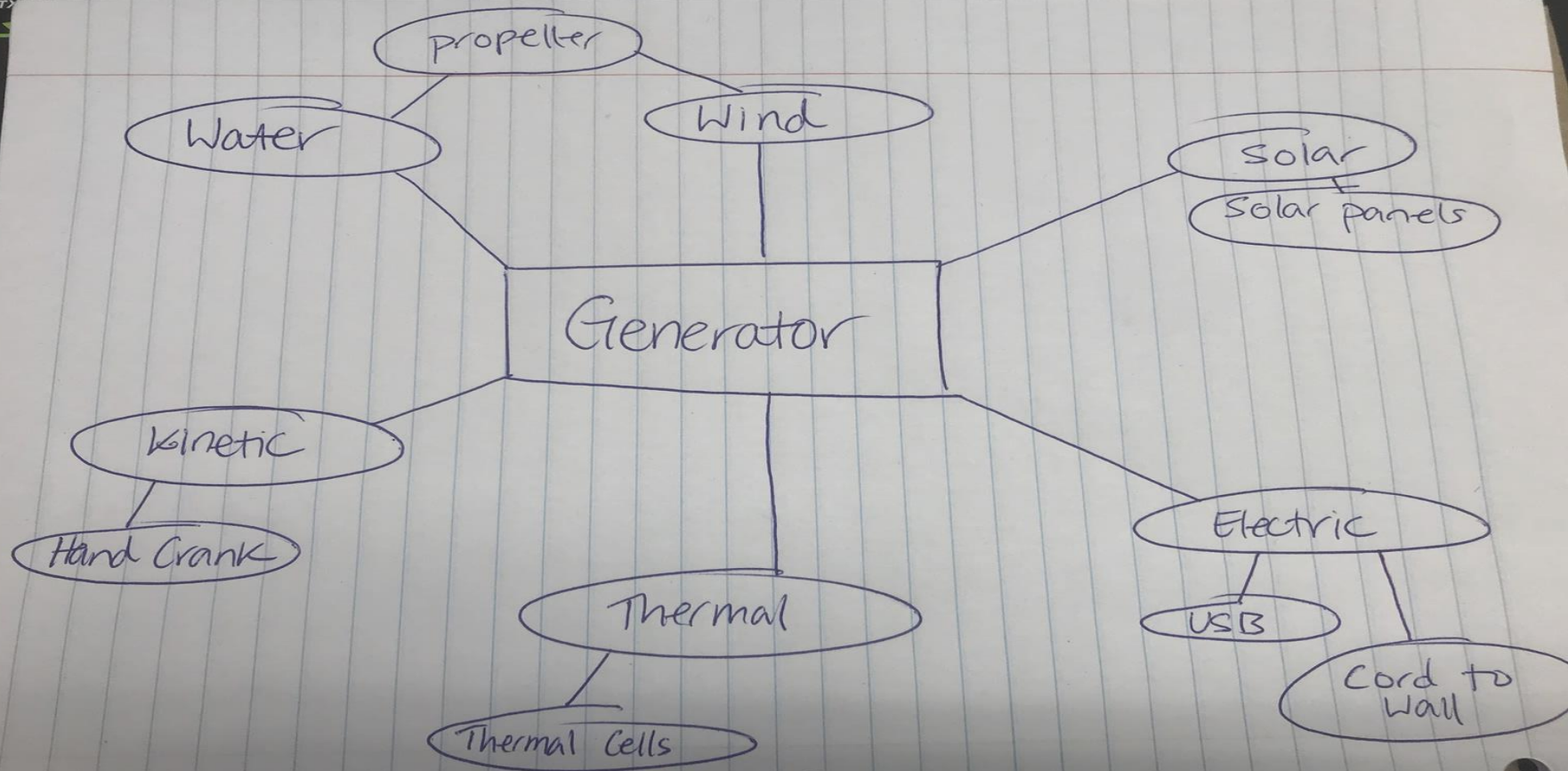
3-D Printing





The engineering design process

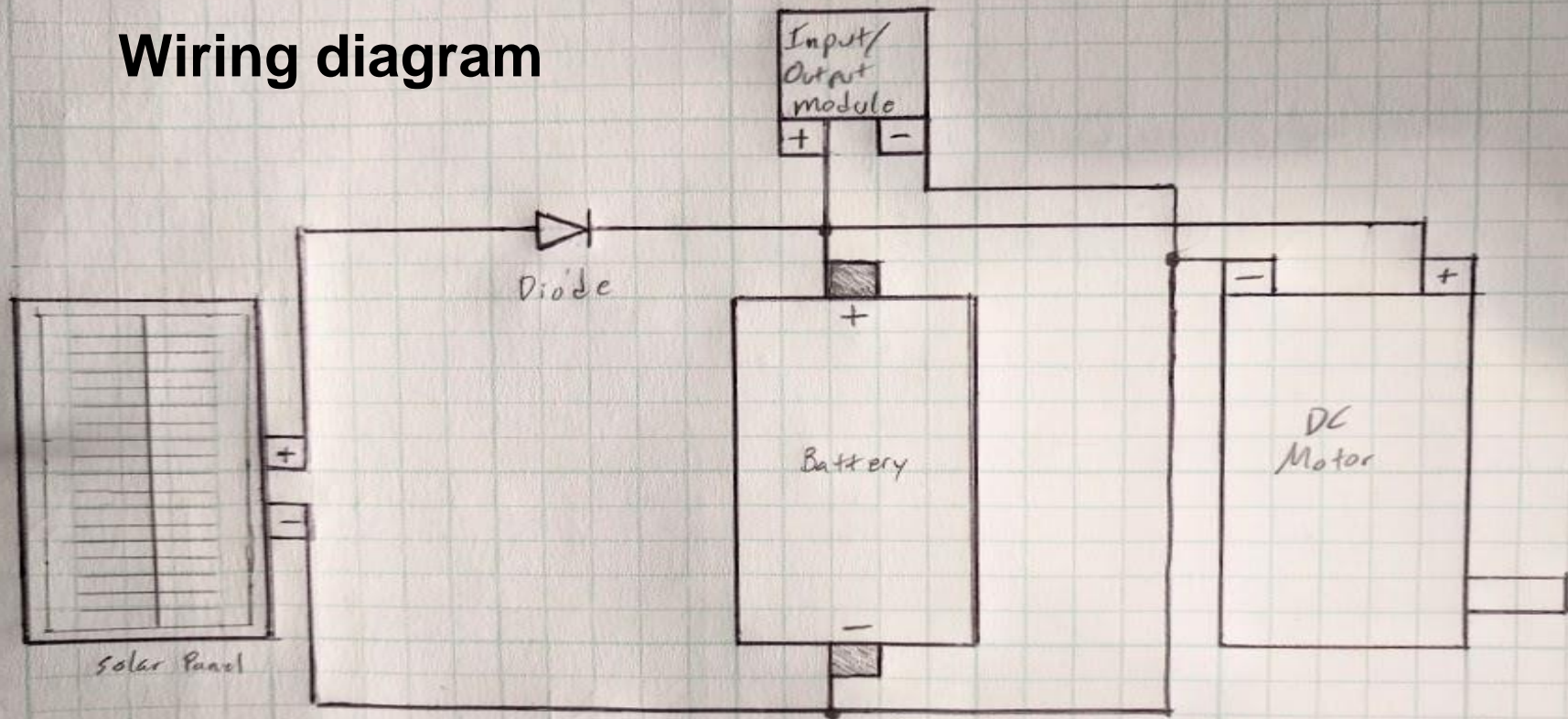
1. Define the problem
2. Do background research
3. Specific requirements
4. Brainstorm, evaluate, and choose a specific solution
5. Develop a prototype solution
6. Test solution
7. Solution meets requirements
8. Communicate results

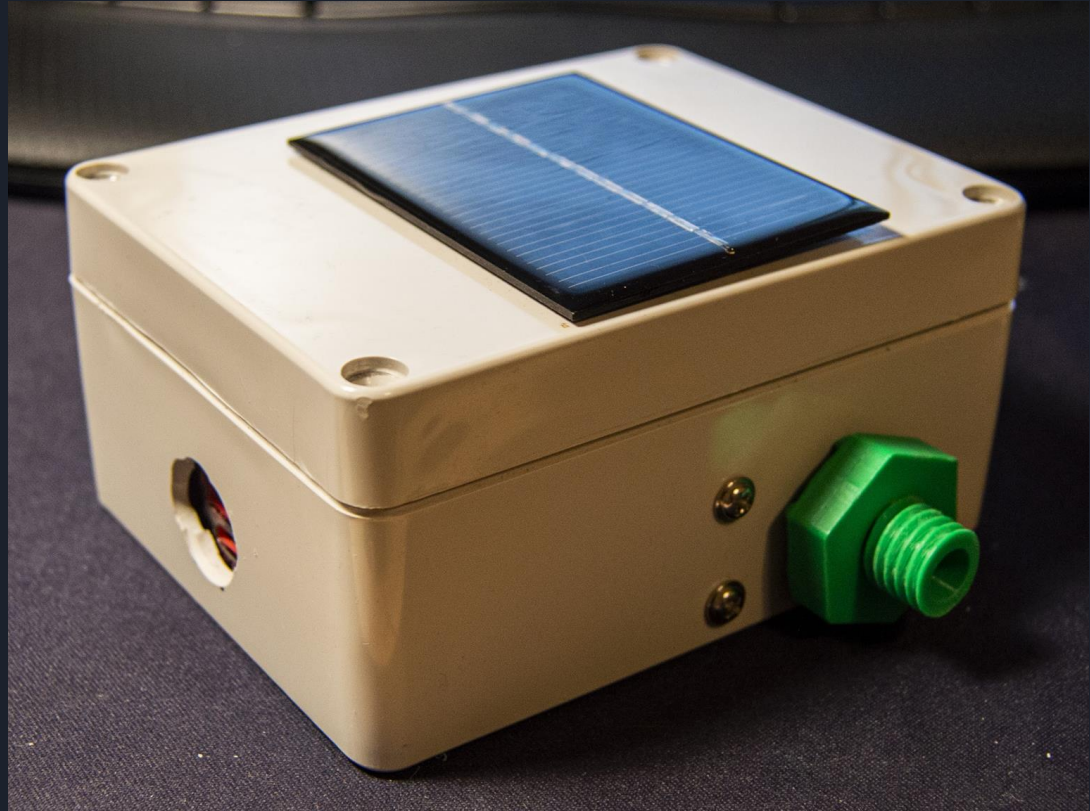
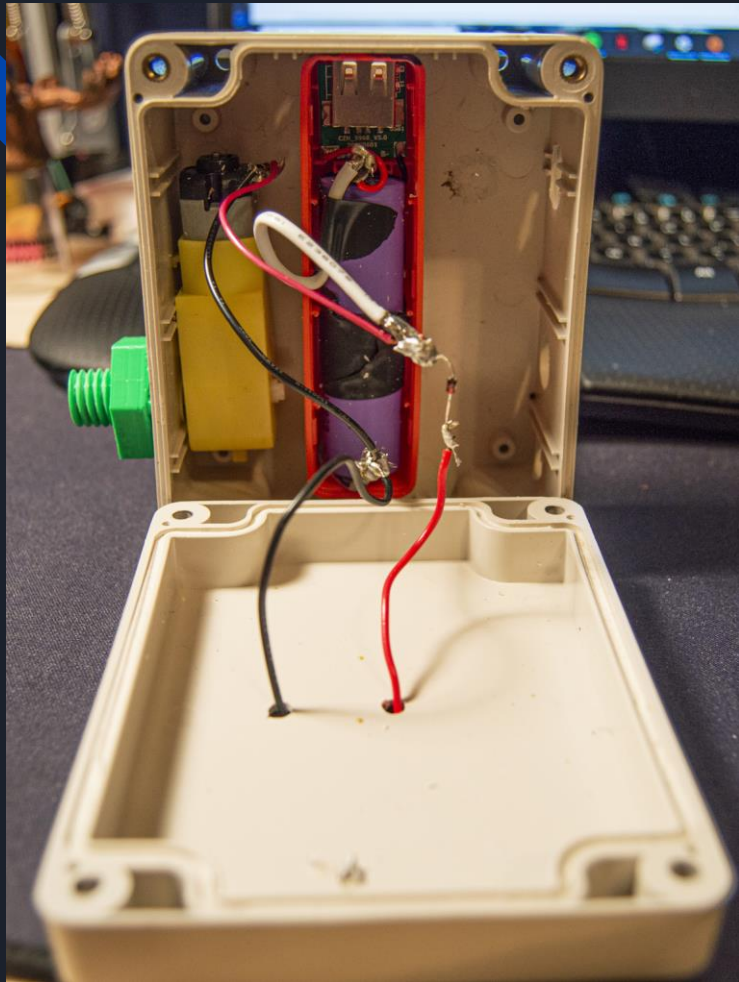


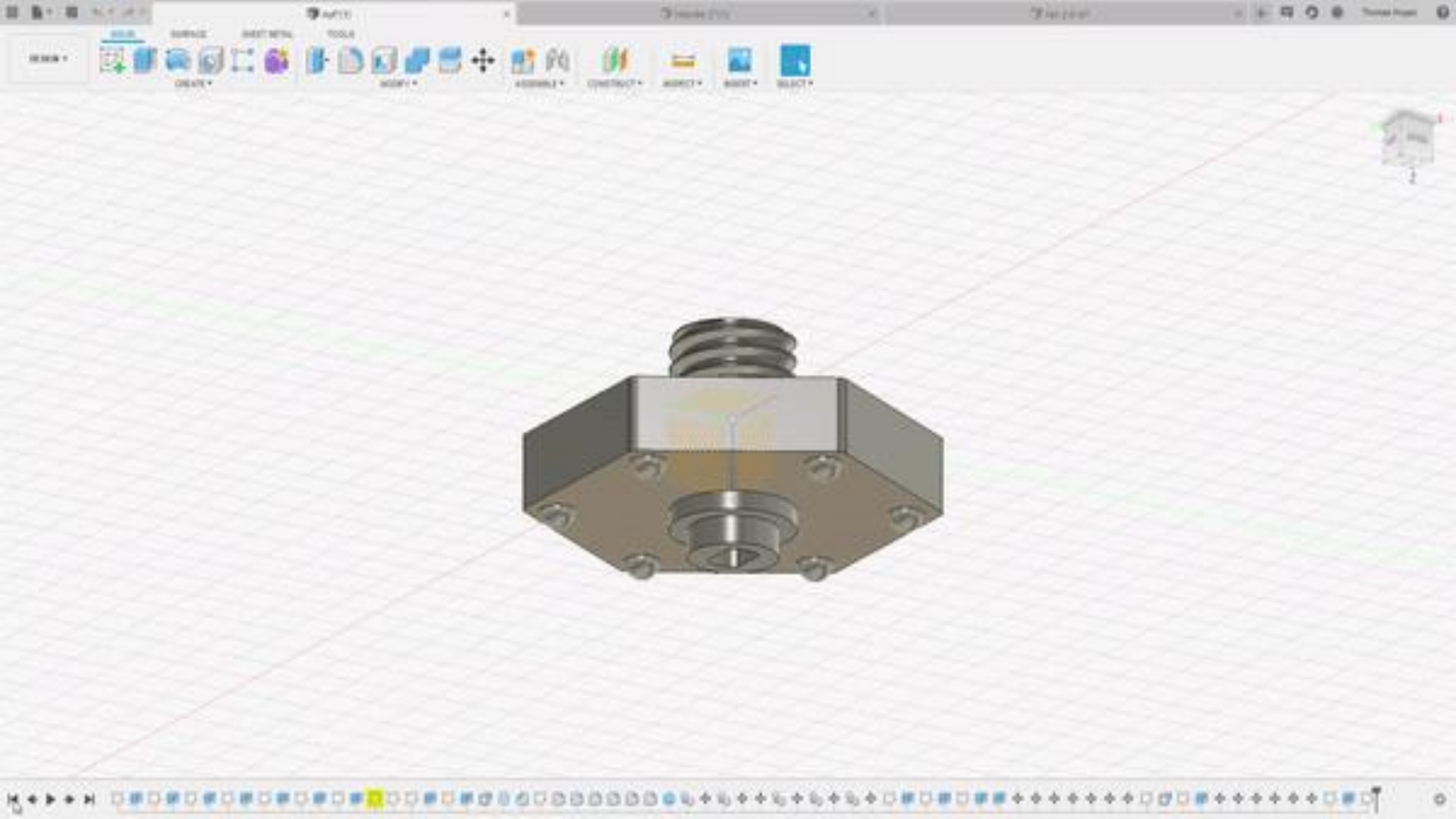
Battery Pack



Wiring diagram









1 minute

10 minutes

60 minutes

mA

Battery Pack



124 mA

Min: 11 mA

Max: 820 mA

Charged +41% 59 min 23 sec

Status Charging

Level 96%

Plugged AC Charger

Health Good

Voltage 4.399 V

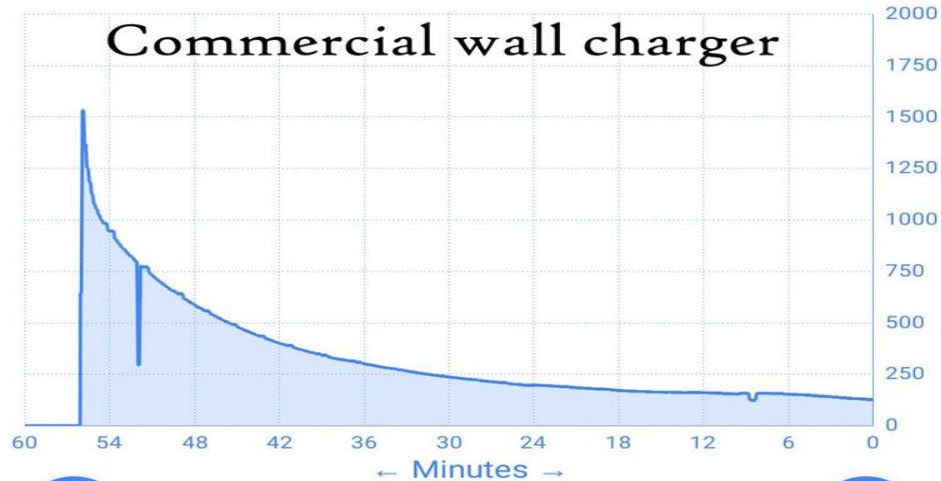
1 minute

10 minutes

60 minutes

mA

Commercial wall charger



127 mA

Min: 124 mA

Max: 1534 mA

Charged +34% 57 min 43 sec

Status Charging

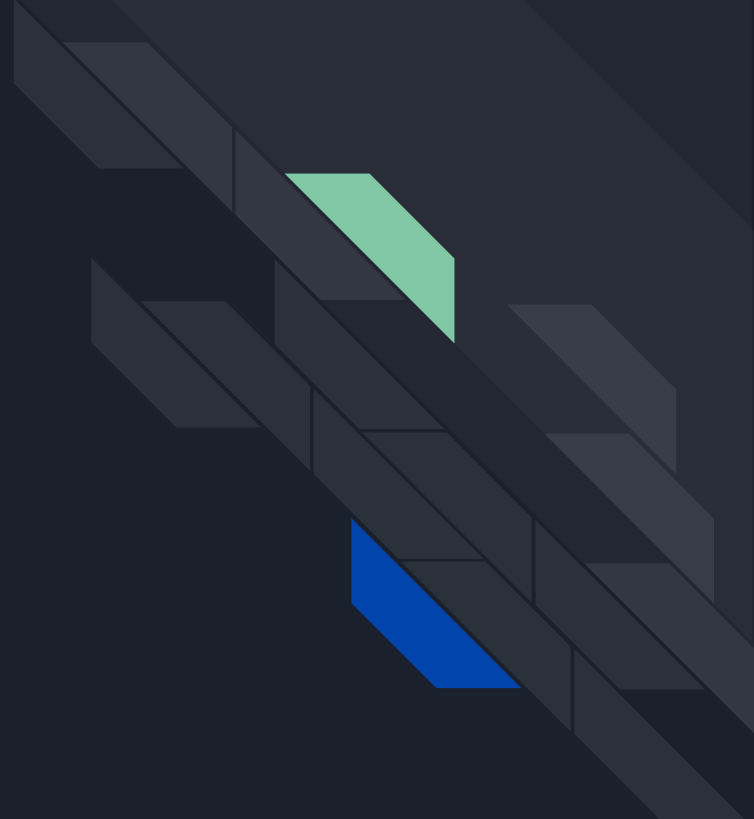
Level 99%

Plugged AC Charger

Health Good

Voltage 4.399 V

The various components



Wind/ Water Mill

How do they work?



Fig.3. BREASTSHOT WATER WHEEL

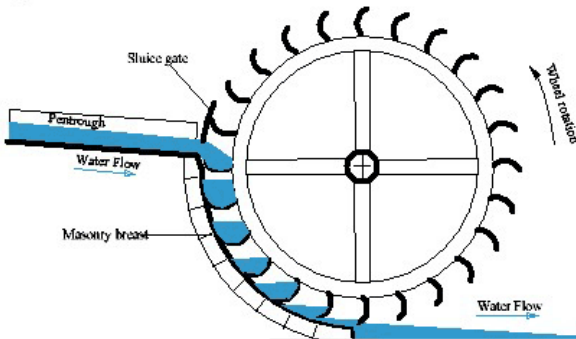
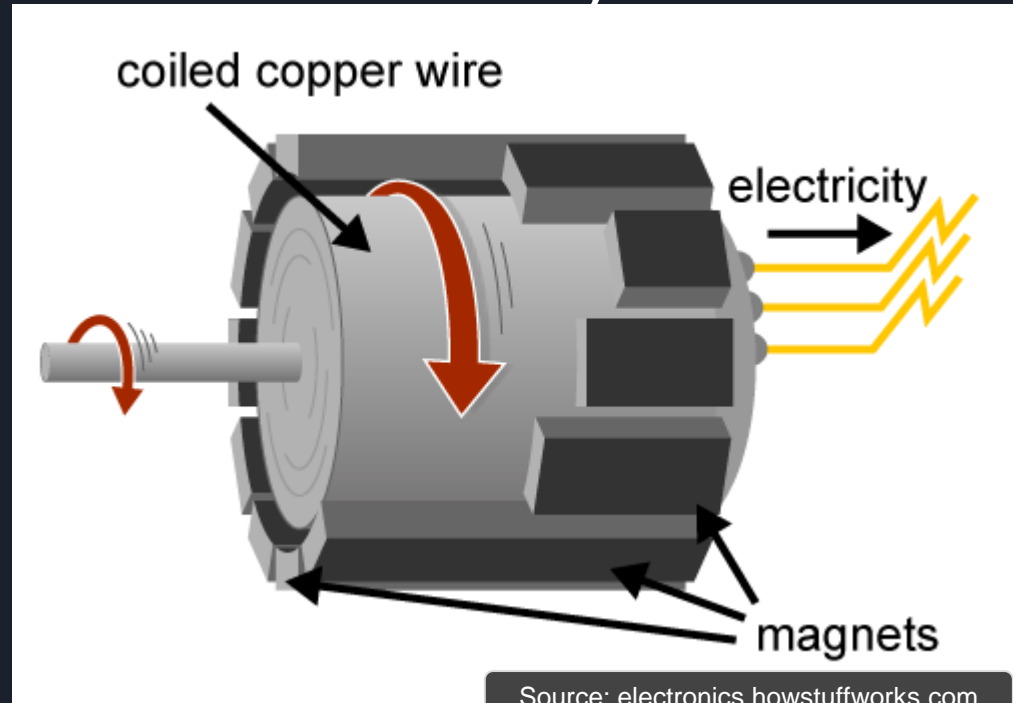


Fig.4. PITCHBACK WATERWHEEL

Source: istockphoto.com



What is already on the market?

WaterLily

\$160-\$180



Source: Amazon.com



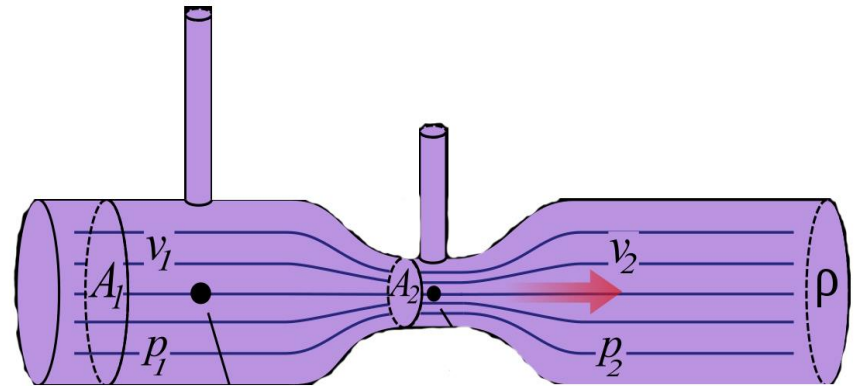
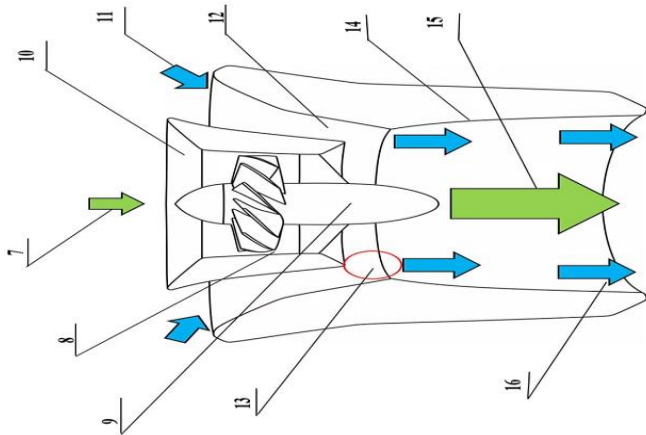
Economics

Could we modify something
that already exists?



Possibilities to increase efficiency

Could a venturi effect increase power output?



Word 4

Word 5

Word 6



Word 3



Concept



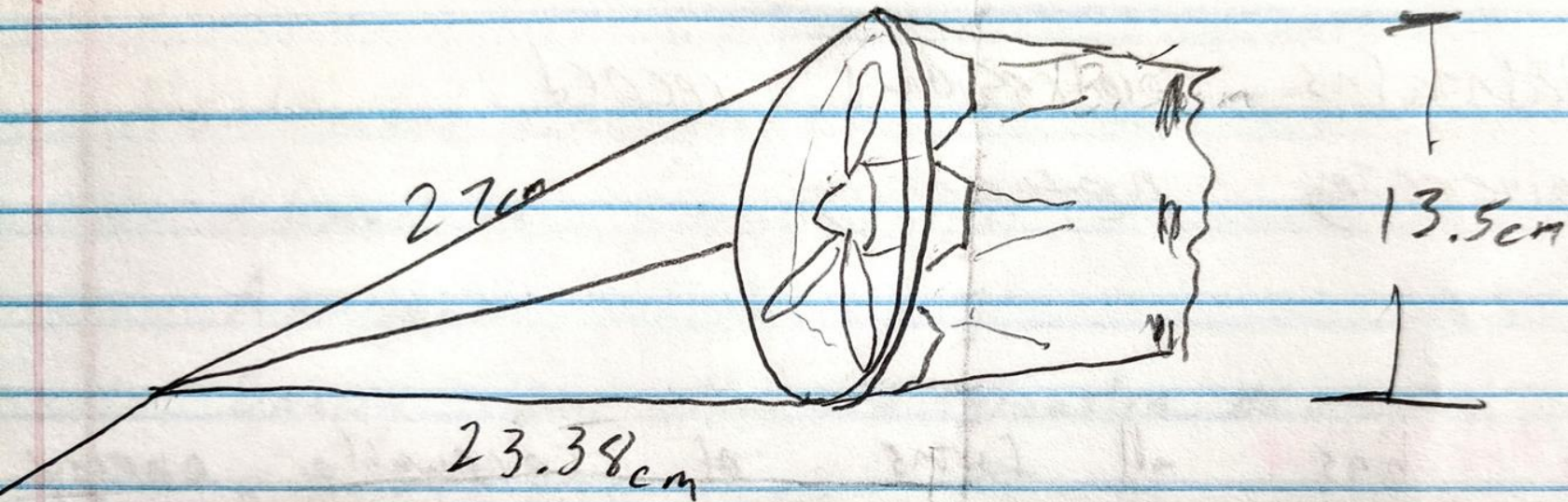
Word 7



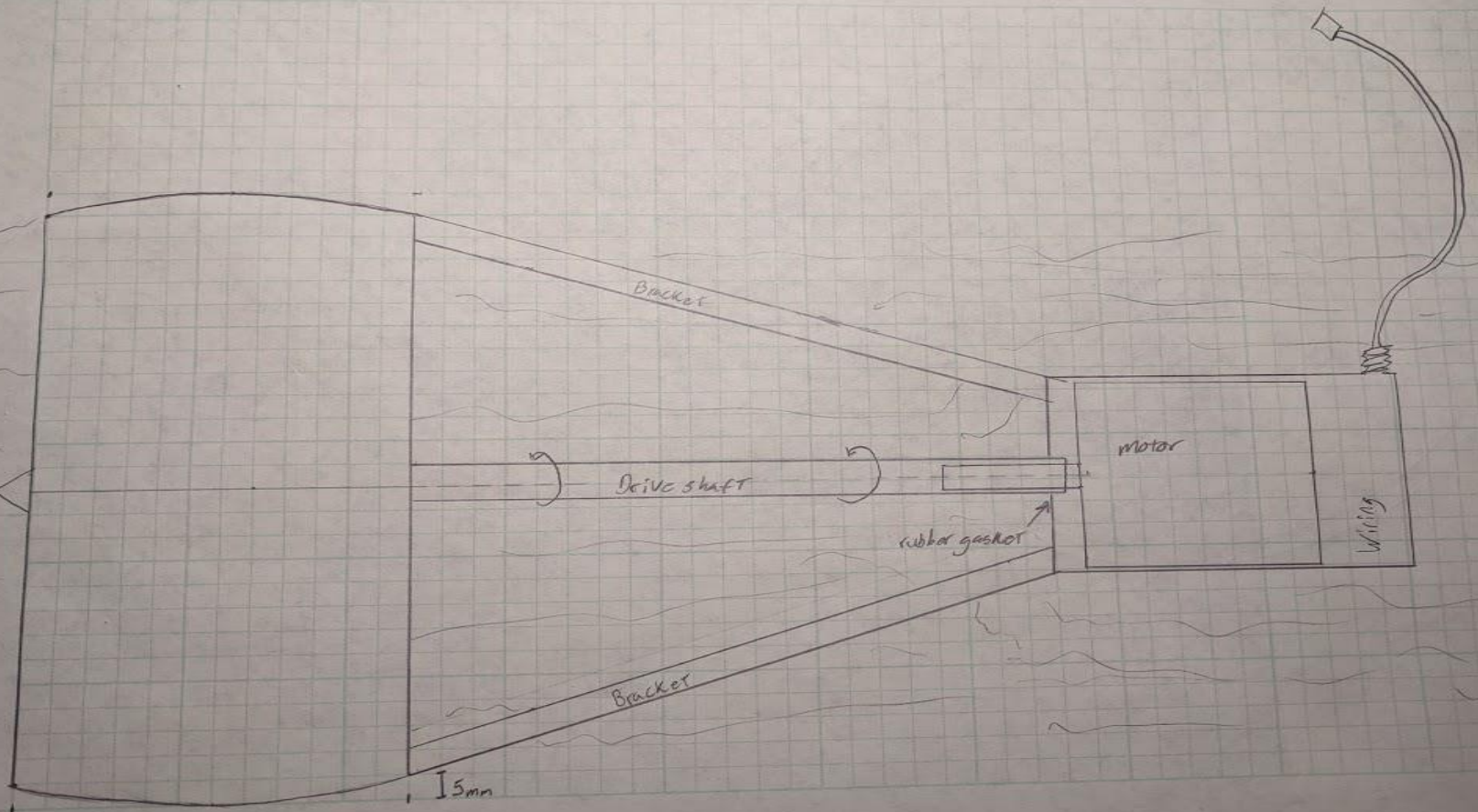
Word 2

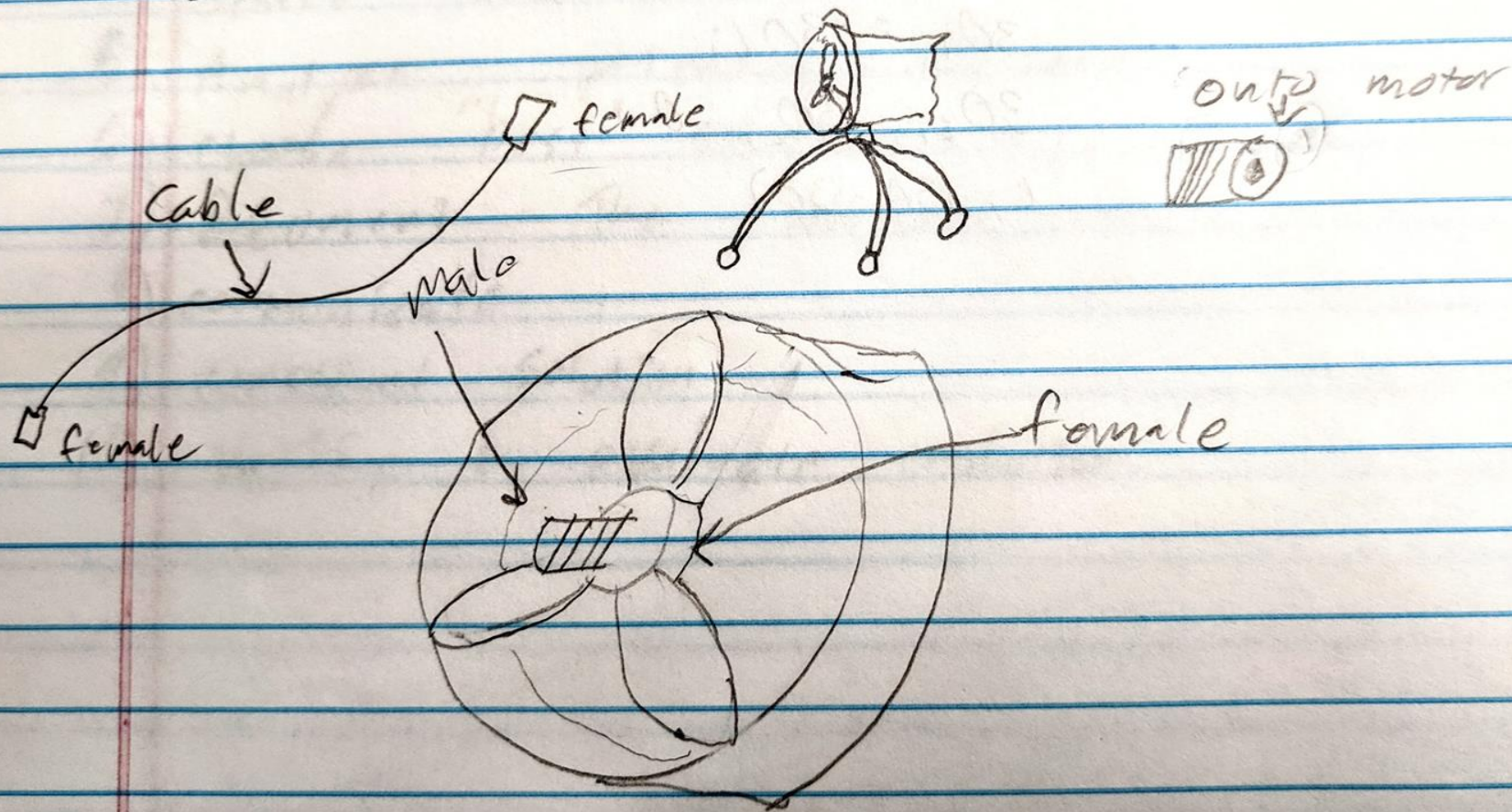
Word 1

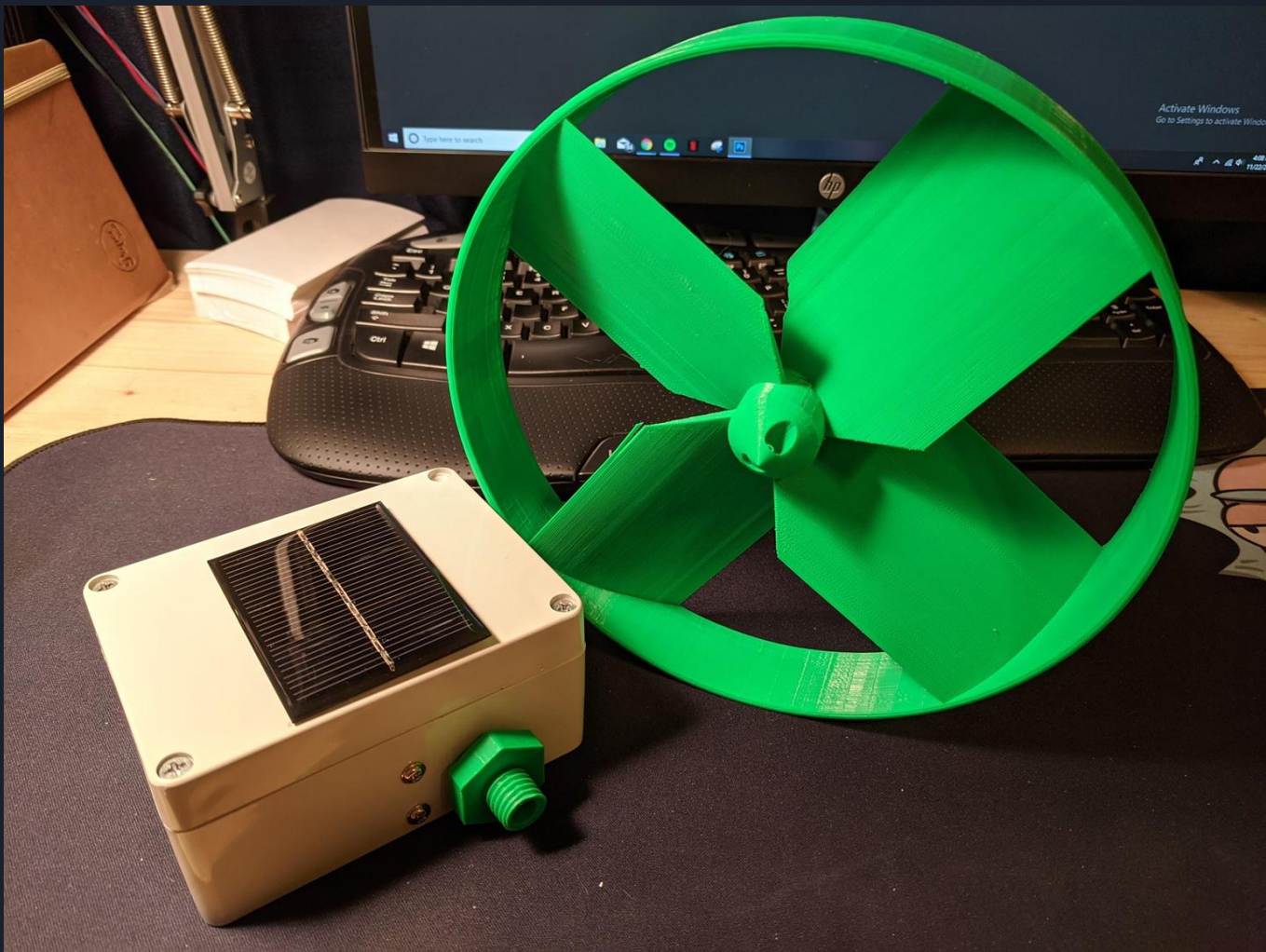


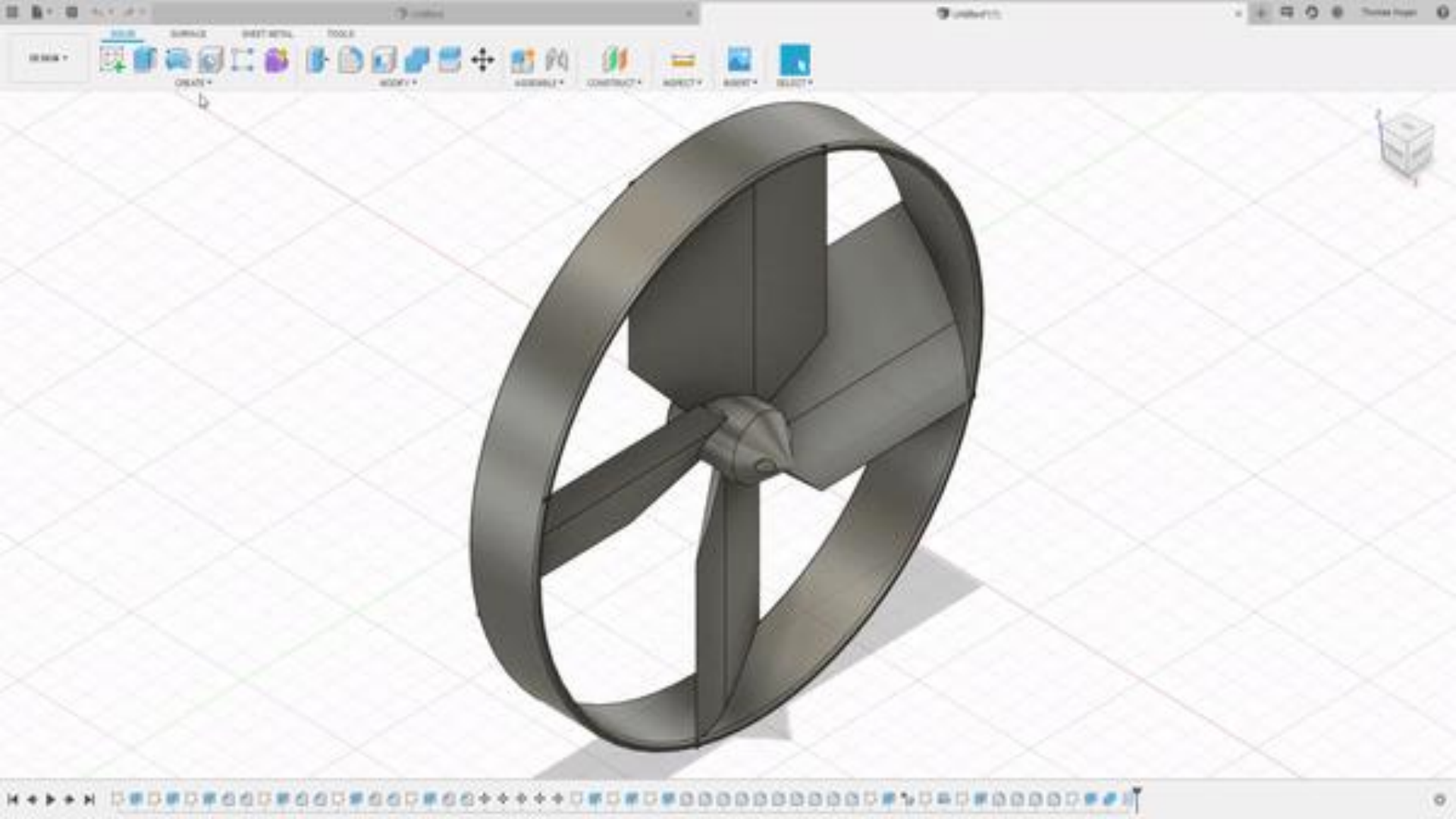


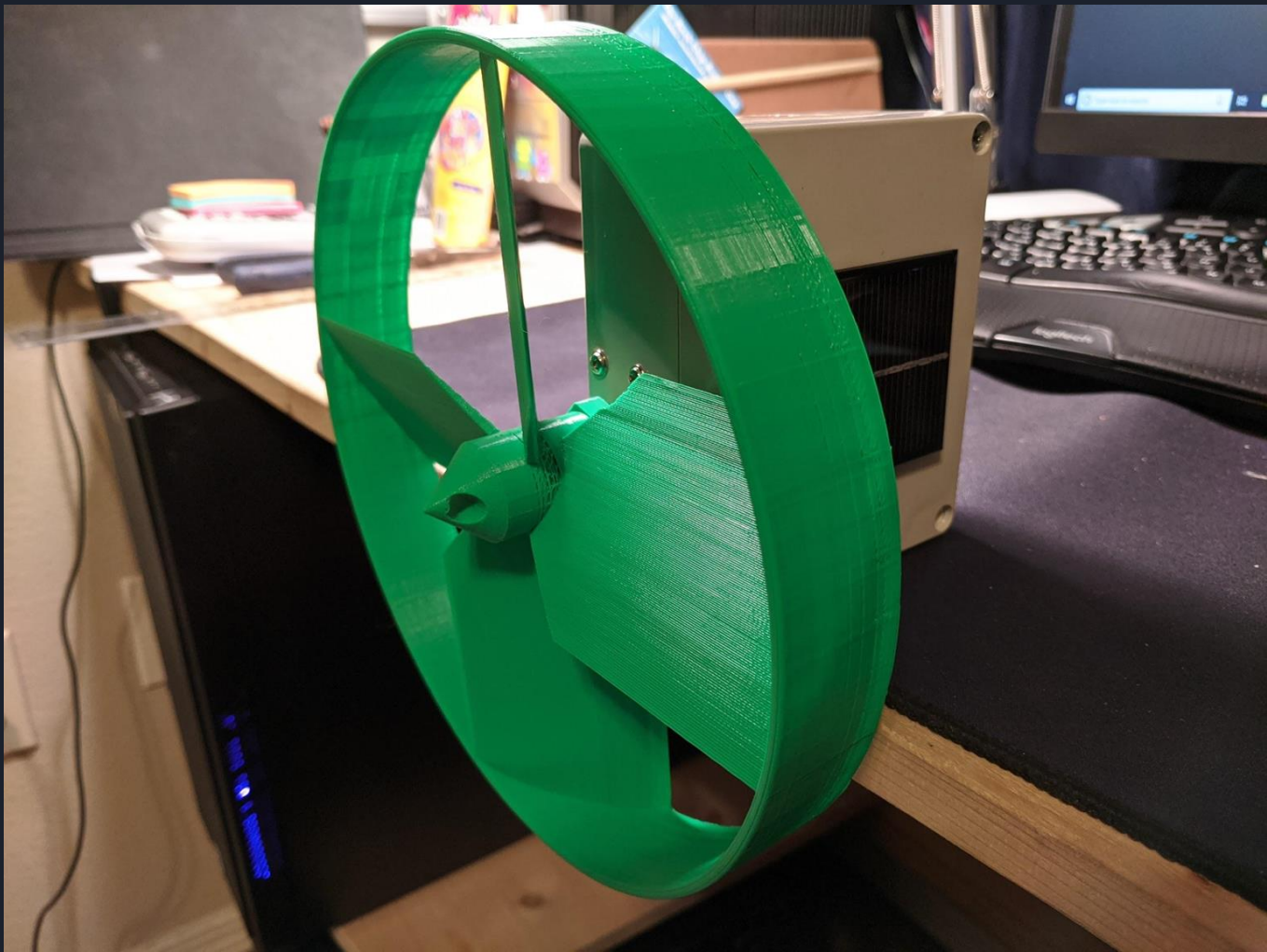
- 13.5cm

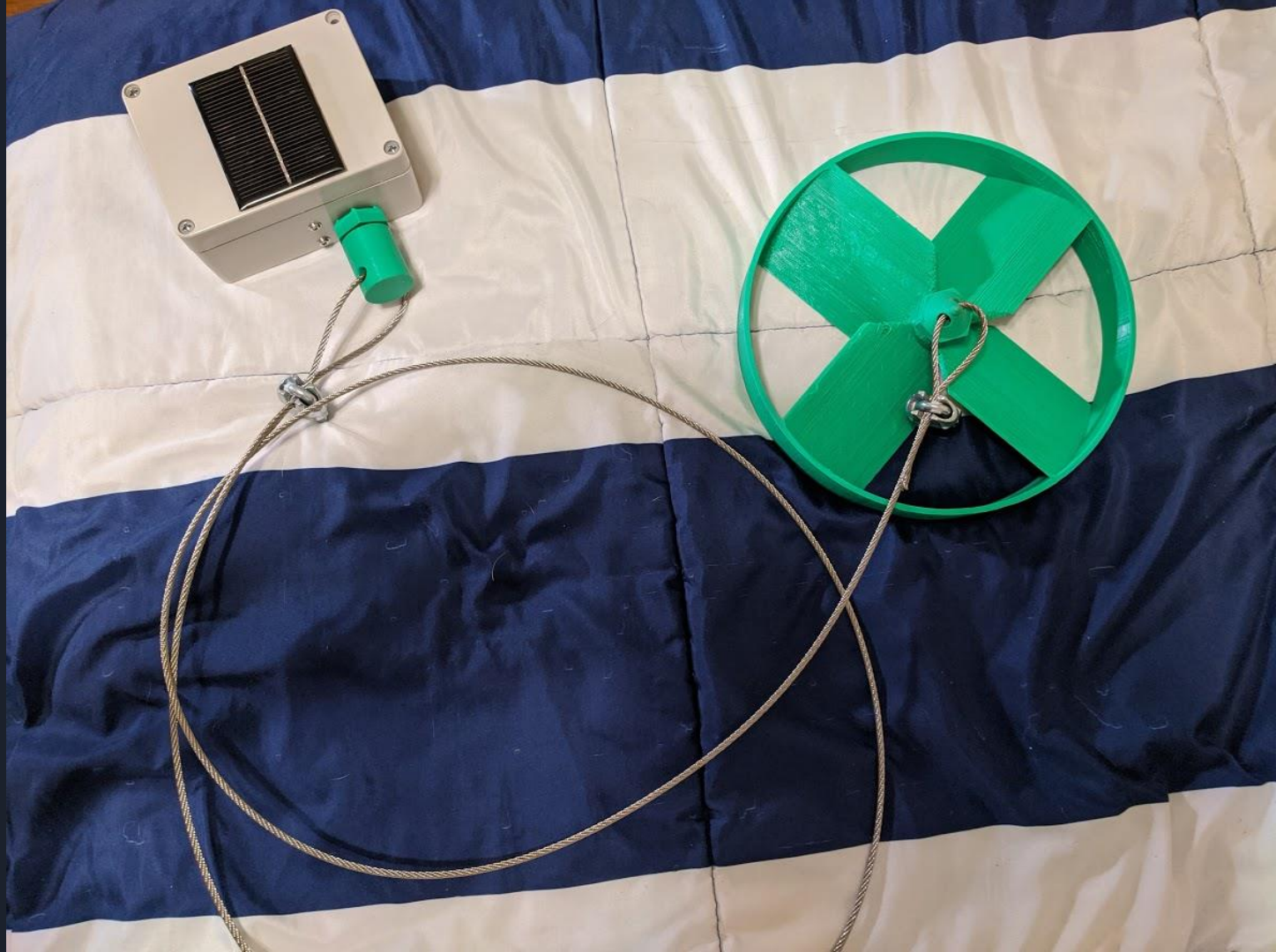






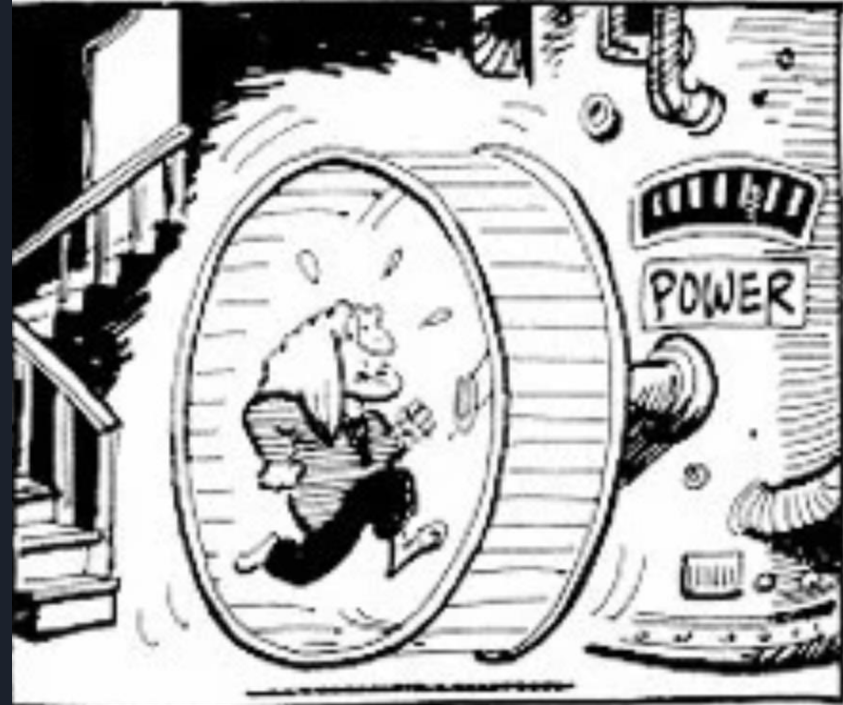






Hand crank

- One of the most basic and forgotten types of energy in the world of gas.
- The hand crank generator is always be available for use.

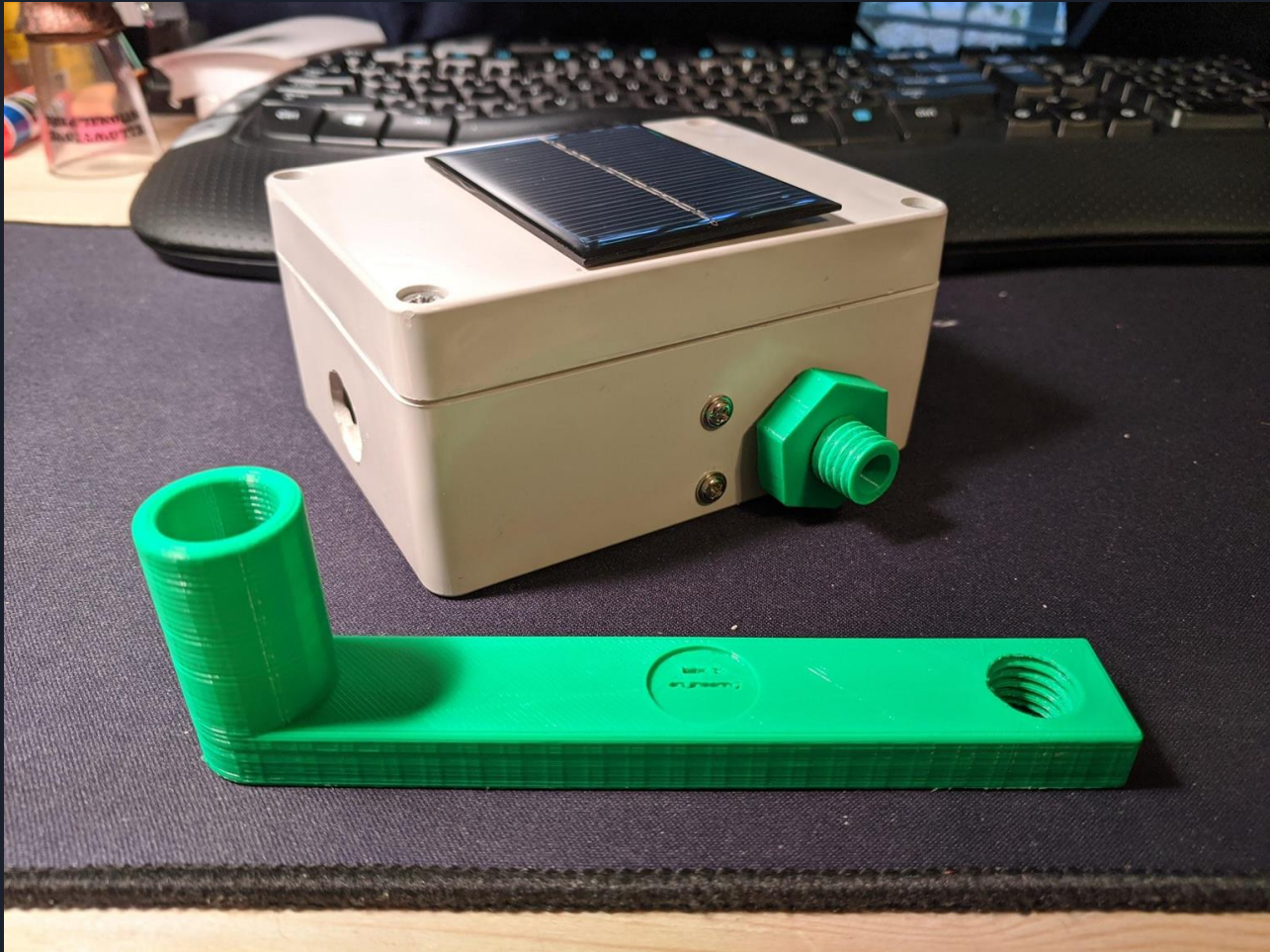


The crank idea

-You might already have flashlights like the one on the slide.





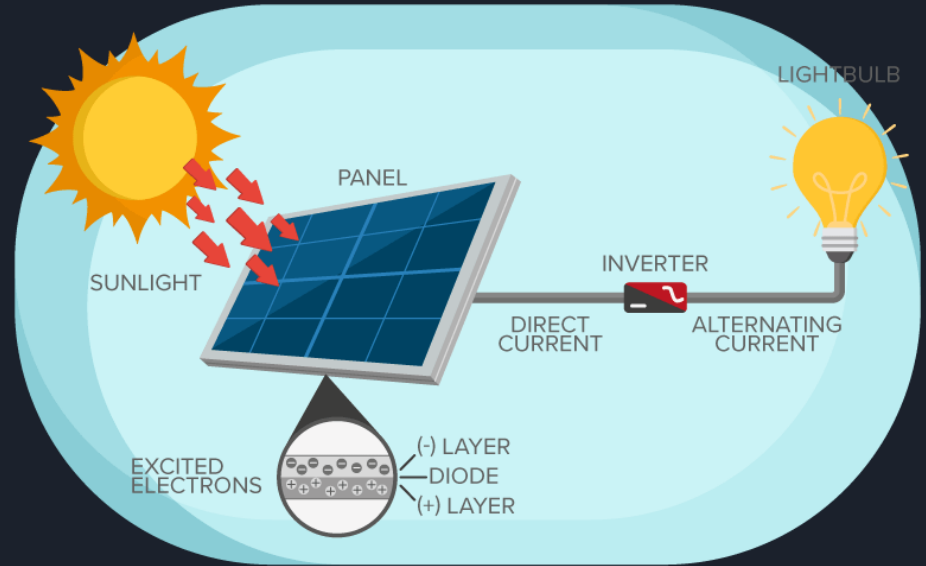




Solar power

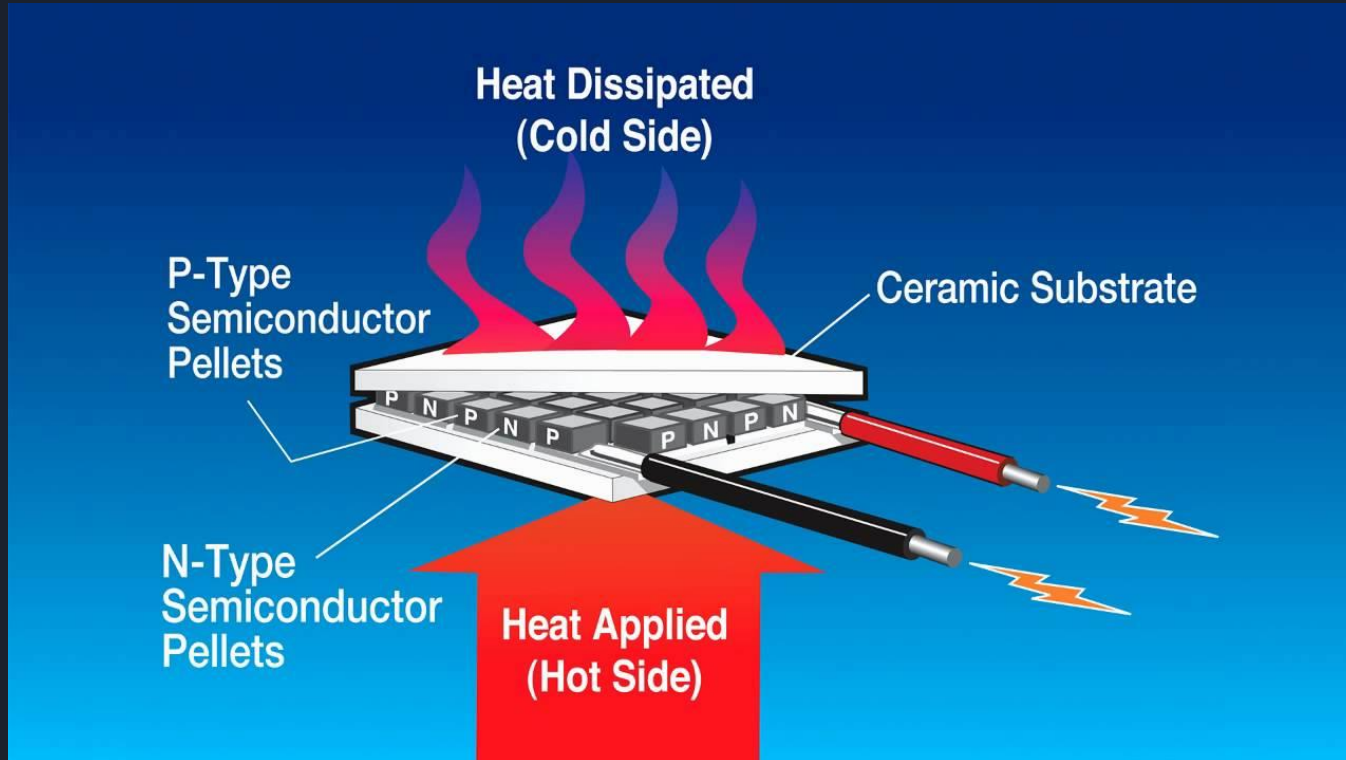
- Why Solar?
- How it works
- Our solar system

HOW SOLAR PANELS WORK






Thermo energy





Skills Developed as a Team and as Individuals

The background features a series of dark grey, 3D-style rectangular blocks arranged in a descending staircase pattern from the top right towards the bottom left. Two blocks are highlighted: a light green one and a blue one, both positioned on the right side of the composition.

Skills we developed as a team

As a team we have increased our adaptability, our cooperation, and our reliability. We will also learned how to respond to constructive criticism and how to be proactive.



Skills developed as individuals

As individuals, we honed our decision-making skills, learned how to establish a standard operating procedure, how to manage the different talents of each team member, and how to produce consistent results.



How can someone use what we made for a future project?





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Phone battery charging monitor - Amper Meter (app)

Dianne Philips - Granted access to various resources

EMFACTS lab - 3D printer, various spare parts, and lab assistants

How to attach solar panel - <https://www.youtube.com/watch?v=C2ab9up3lQA&t=127s>

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<https://www.youtube.com/watch?v=V3NtSp6aAbs&t=1s>, <https://www.youtube.com/watch?v=BAVGYXoSbKY>,
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<https://www.youtube.com/watch?v=olA3xTzQBkk&t=382s>, <https://www.youtube.com/watch?v=2hTOox2g1Ek>

Thomas's roommate that supplied the battery - Jake Ippolito

Dr Shariff - Various advice