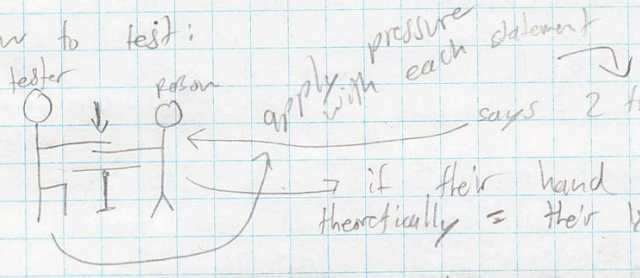
Nov. 4, 2025 ☆start day

possible science fair topic

or Can lying affect your physical strength?
Can you tell if someone is lying based on measuring their physical status?

how to test:



human brain = knows your lying = supposedly body reacts too

talked to Ms. Sleiman about project

possible problems: how do you measure the amount of force your putting each time?
how will you take into account the difference in physical strength between different people

Nov. 8, 2025

changed project from experiment to research / study
→ researched more about the piezoelectric effect
→ read about Pierre Curie and how he helped discover it

Nov. 9, 2025

made my science fair proposal online

new question: How can piezoelectric tiles integrated into high traffic areas convert the pressure from everyday vehicle movement into a sustainable source of reliable energy?

→ talked to a friend who asked about my project
↳ discovered Japans piezoelectric sidewalks

⇒ did research on materials, science stuff, safety considerations, cool title (im very proud)

? can I make an actual working version of this? how? amazon, goodwill, home depot???

Nov. 11, 2025

- did more research on Japan's sidewalks
- did some research on Japan's relationship with emerging technology
  → for ex. bullet trains
  → Japan is very technologically advanced (so cool)
  ★ they use electricity from piezo for mini road lights

Nov. 27, 2025

Talked to Ms. Steiman about enhancing project → we can power streetlights and considerations about real life implementing

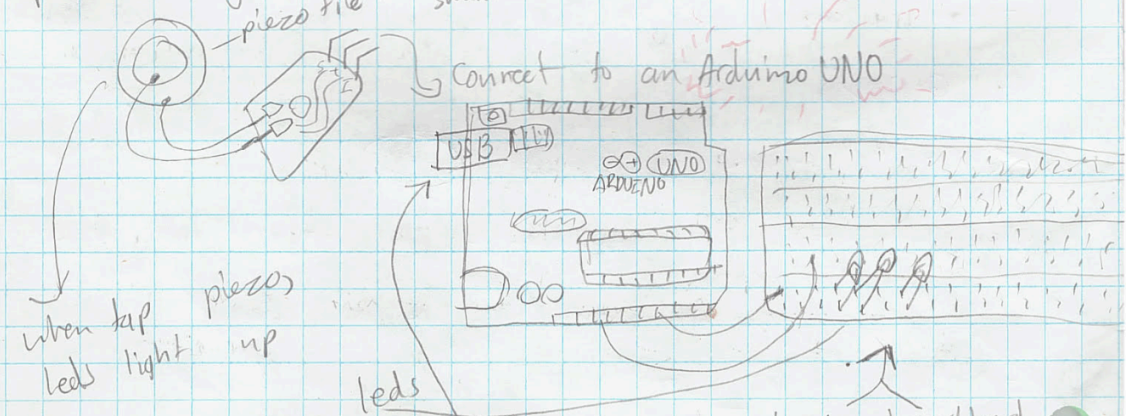
- did research about how much roads cost gov.
  + govs. plans to be more sustainable
  + govs. trying to become more sustainable + better energy generation practices

would govs possibly use this idea/design?

Dec. 4

Talked with a friend on Discord about their project made with an Arduino
→ looked on amazon to see if any piezoelectric tiles on sale
→ found that their really tiny

possible thing:



problems:
1. I barely know how to code
2. I don't own an arduino UNO
3. this design doesn't represent my road

Dec. 16
→ found out about reading a 220Ω resistor for Arduino
→ started building procedure steps on proposal
(still improving design to see what I can learn and do better) (not/didn't buy Arduino yet because I need to finalize my design first for the prototype)

Dec. 17
- did research on costs and data for my design (#2)
- did research on government projects for sustainability

Dec. 20
- added how to test my design and how to collect proof it worked
↳ talked with same friend who showed me their arduino project and introduced me to ELEGOO R3
↳ cheaper but same as arduino + take shorter to ship (didn't buy this)

Dec. 22
Ms. Sleiman helped with advice and more ideas about project
→ more considerations
~~I~~ I don't know if this design of ELEGOO proves anything because it doesn't exactly represent my road

Dec. 23
→ I did more research on how fossil fuels and other damaging practices of energy production work
→ history → industrial revolution connection

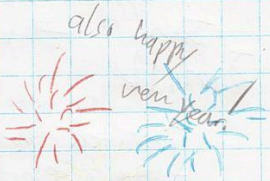
Jan 2, 2026

- added colored LED tests to see voltage let out and usage

typically:

LED color	Voltage
Red	1.8 V
Yellow	2.1 V
Green	2.2 V
Blue	3.2 V
White	3.2 V

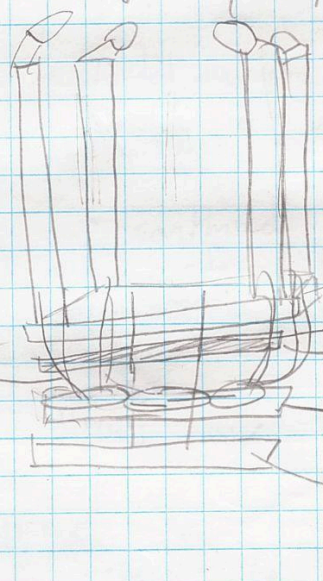
added. how we can try a row of different colored LEDs and see which is brightest on bread board



Jan 3, 2026

- I changed my prototype design
- I ordered piezoelectric tiles (mini/10 pieces) and LEDs from Amazon
- I went to michaels to buy a foam sheet
- did a lot of research regarding best materials

new design: (prototype)



- I don't have an empty battery so I directly connected the tiles to the lights (LEDs)

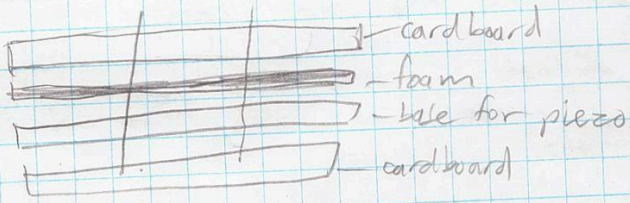
Jan. 7
- did more research on the materials in my design
- learned about the solar panel roads in the Netherlands
- learned about ocean wind farms

→ analysed advantages + disadvantages of these practices

Jan. 9 → reduced my amazon package of materials

Jan. 12
- started building prototype
- need electrical tape

later → got electrical tape
built base + layers of prototype without LEDS and piezo tiles



Jan. 14
- added piezotiles and wiring to prototype
- painted strips for street lights

Jan. 15
emailed Mr. Stove because one of the wires ripped off of the tile
→ Mr. Stove re-soldered it + sent emails

Jan. 20
emailed Mr. Stove again because another wire came off
→ he replied he could resolder it tomorrow (21)

Jan. 21 – collected my re-soldered prototype
– tested my mini prototype

Jan. 22 wrote an analysis for what went well and what went wrong

Jan. 25 – edited + made a slide show to present to Mr. Pelayo = more research

Jan. 26 – presented slideshow to Mr. Pelayo
+ made trifold = MORE RESEARCH

Jan. 31 LHS Science fair!!!

Feb. 3, 2026 Got news that I made it to CYSF

Feb. 12
– made infographic about different countries producing sustainable energy
– started writing sections for CYSF platform

Feb. 19
– continued work on CYSF platform and made "Data and Statistics" infographic

Feb. 23
– went at lunch to Ms. Davis's room to discuss my responses on the CYSF platform

Feb. 25
– went to Ms. Sleiman's room at lunch to discuss my project on the CYSF platform

Feb. 28

- researched more about statistics relating to GHG emissions and materials like types of street lights and concrete vs. asphalt

Mar. 1, 2026

started uploading things to OYSF platform

- completed all sections except research and data

Mar. 2, 2026

uploaded more things to platform