

Perceive the Puzzle:

# Logbook

Jadyn and Siena Smith

6th Hour EDD

**January 27, 2020:** First day of working on the final project. Started document to compile research about our problem and possible solutions. We also started ideating worksheets as assigned in the Classroom.

**January 28, 2020:** Today, we finished the three ideating worksheets done. We divvied up the work so that we could finish the assignments as well as clear up our direction for the project as quickly as possible.

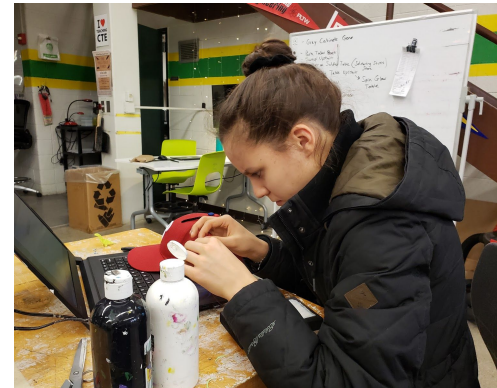
- [Find Your Passion](#)
- [KWR Chart](#)
- [Planning Document](#)

**January 29, 2020:** Finished research about preliminary ideas, which helped us finalize the idea that we want to go with: a DIY EEG device. We then started research about how we are going to construct the EEG and the format of the design and a survey to understand what real people feel would be important.

- [Research](#)
- [Survey](#)

**January 30, 2020:** Created a materials/budget spreadsheet and finished compiling and finding each of the materials and where to buy them if necessary. Then in class today, we created our first prototype: a working illusion made of an old hat, cardboard, pipe cleaners, and hot glue. Also, my website was updated that I created last semester.

- <https://perceivethepuzzle.weebly.com/>



home about bp meter eeg contact

**What is Perceive the Puzzle?**

This is an informational website with the goal of raising awareness about Autism Spectrum Disorder and exploring new possibilities of ways to improve the quality of life for those with the disorder as well as family, friends, and caregivers around them. Please visit the about page for more details.

**BP Emotion Detection Meter**

Learn about the development of a simple device that takes someone's blood pressure and applies that to possible emotions and discover why this is applicable to people on the autism spectrum.

**DIY EEG for Stress Management**

Learn about a DIY electroencephalogram, a brain activity monitoring method, used for the identification of stressors for people who suffer from ASD in order to help them adjust to and overcome these stressors as quickly as possible in order to improve their mood.

Autism, more accurately known as Autism Spectrum Disorder (ASD) affects more families near you than you might think...

1 in 59 children in America are diagnosed with ASD

33 percent of people diagnosed with ASD are nonverbal

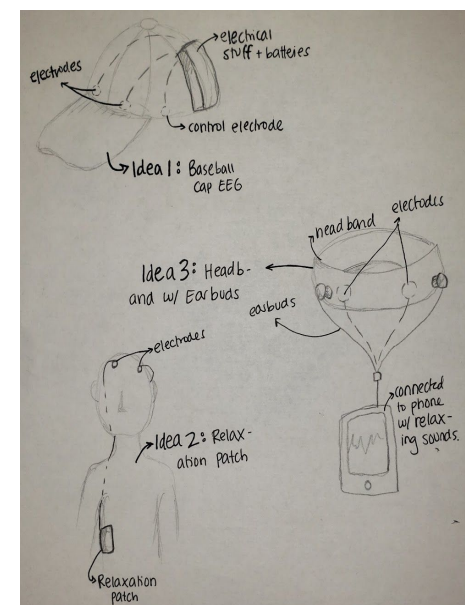
44 percent of children/people diagnosed with ASD have above average intelligence

This is because autism does not mean the same symptoms, behavior, and difficulties for everyone; the disorder is on a spectrum. Children with autism are often exceptionally intelligent, perceptive, and observant. Just because they have trouble expressing that knowledge doesn't mean that the intellectual ability isn't there!

Find out more

**January 31, 2020:** Iterated out Progress Check 1, being more thorough about documenting our ideating process. So we included creating a Decision Matrix, creating design sketches, and listing out design constraints as a part of this week's Progress Check. We sent out our survey so now we are waiting to get some feedback.

- [Preliminary Ideating](#)



Decision Matrix (see KWR chart for the three ideas):

	Cost	Feasibility	Utility	Total
<b>Hat + flexible case</b>	8 It only costs as much as we need to make the EEG.	8 If we can get the EEG to work we just have to make it comfortable.	9 It is easy to put on and wear in public and can help caregivers.	24★
<b>Relaxing patch</b>	6 We would have to buy and create the patch.	6 To make it safe and connect to the EEG would be difficult.	6 Each person is unique so what would relax someone can differ.	16
<b>Band + earbuds</b>	7 About the same cost as the hat but we would need earbuds.	7 It is like a hat except connecting to a phone will make it bulkier as opposed to using Bluetooth.	8 Trusting someone to take care of a phone could lead to breaking the phone.	21

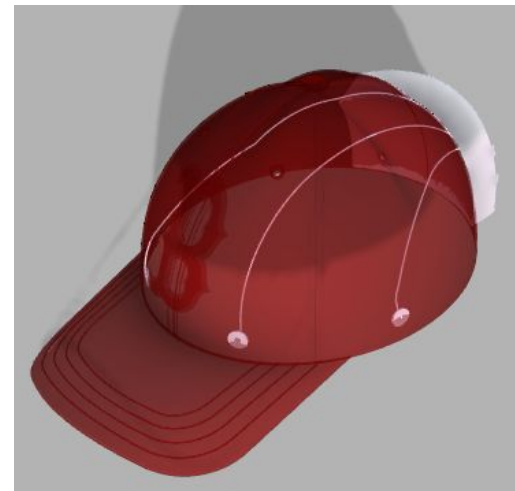
**February 3, 2020:** Over the weekend, Jadyn did the CAD of what we want the final design to look like in the end, giving us a visual end goal while the parts we need are getting ordered. Today, we

continued the documentation of preliminary ideating and the decision-making process.

**February 4, 2020:** Today we finished articulating our design criteria and constraints. Now, we can start the phase of our project where our design begins to take shape.

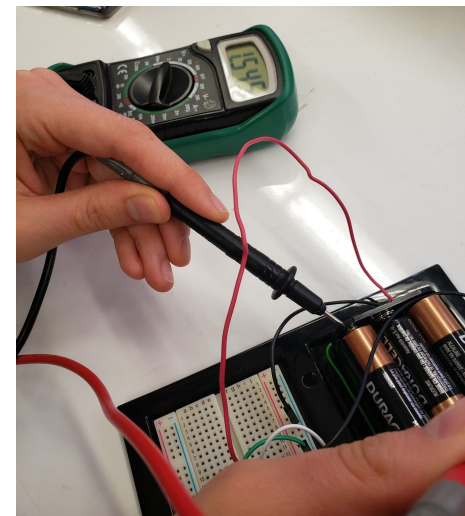


**February 5, 2020:** We started our trifold today so that we are ahead of the game for the February 18 due date. We can't start our first prototype since our parts are still being shipped.

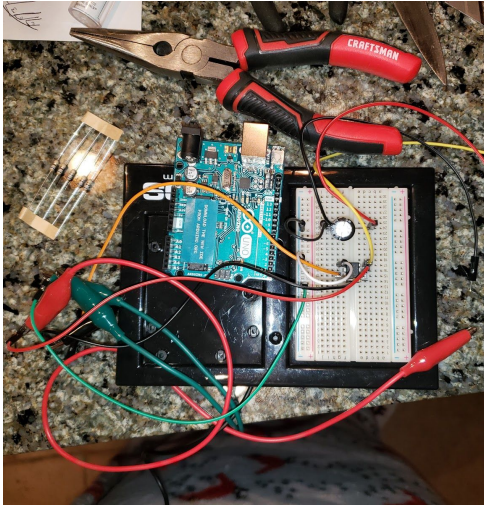


**February 6, 2020:** Continued our poster board and got about 75% done. We will finish it tomorrow.

**February 7, 2020:** Mostly finished our trifold We were able to get some feedback from Mr. Cupit so we will put the finishing touches on the trifold on Monday so that we don't have to worry about it for the first due date. All of our materials arrived so we will start building over the weekend and on Monday.



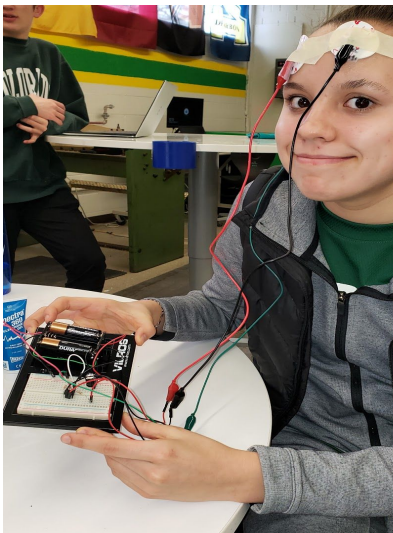




**February 8-9, 2020:** Over the weekend, we built the beginning of the EEG with the help of our dad. We wired everything according to the schematic provided by the DIY EEG website from above. We connected the electrodes, amplifier, and all the resistors as well as started to determine what additional materials we needed.

**February 10, 2020:** During class we worked on the poster board and found the additional resistors we needed to finish the build of the initial EEG. After school, we finished the EEG build by

soldering wires to make a new battery holder arrangement and finishing the circuit.

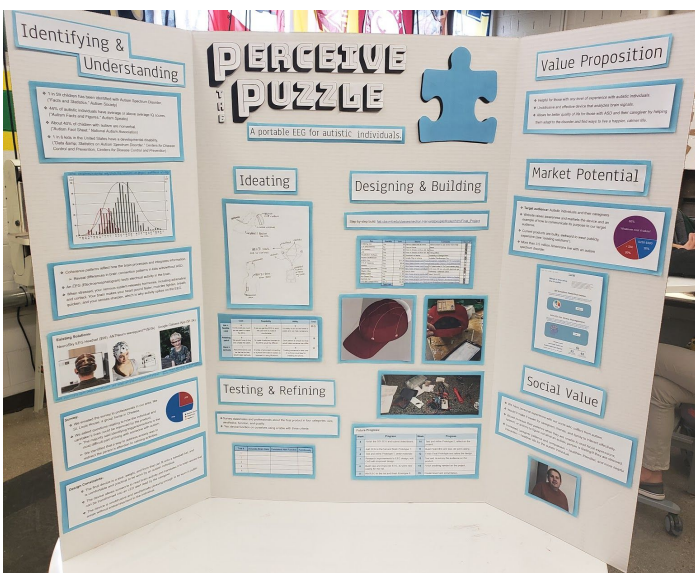


**February 11, 2020:** We tested the EEG and tried to get a reading on the Oscilloscope app on our phone. But when we didn't get a reading we used a multimeter to test the voltage and realized we had a faulty battery. We then retested and tried to fix the problem with the reading.



**February 12, 2020:** We asked Mr. Cupit to check our board and to give us recommendations on what to change. We then made our changes to the board and finished it.

**February 13, 2020:** Jadyn made the script outline for the video.



**February 14, 2020:** Siena edited the script and we practiced the video.

**February 15-16, 2020:** We bought an oscillator off of Ebay and connected it to the breadboarded EEG.

**February 17-18, 2020:** We practiced and recorded the video.

