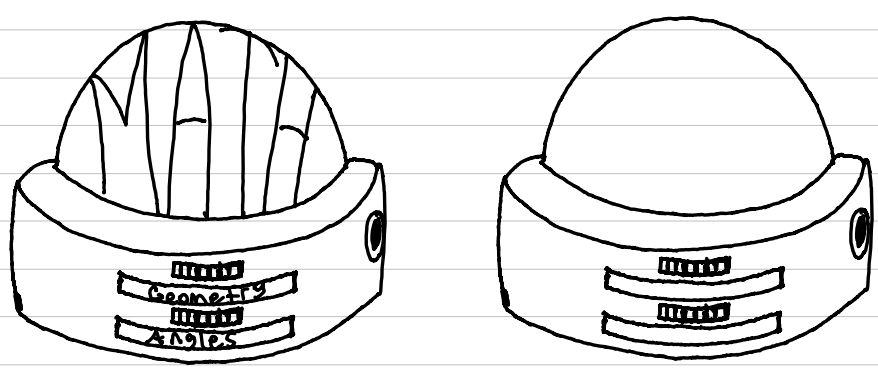
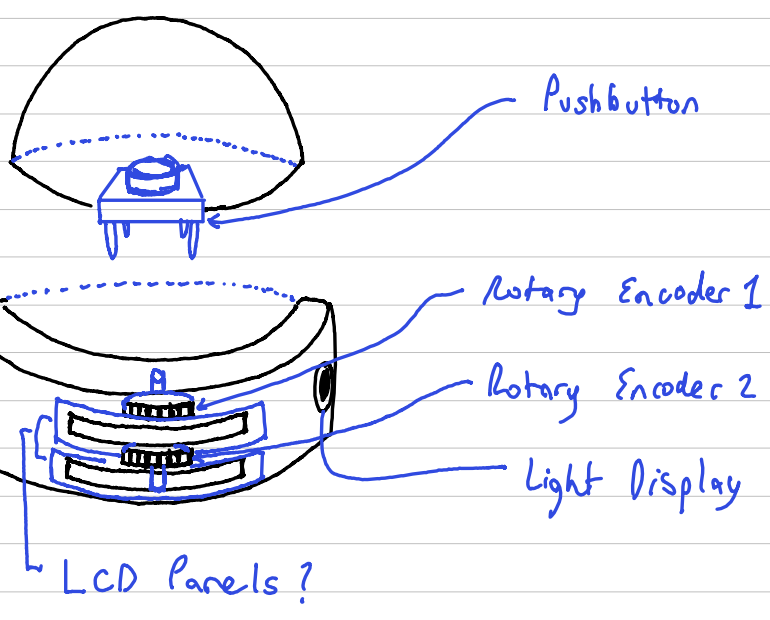
10/1/24

Pcomp Study:





User selects subject using Rotary Encoder 1

User selects topic using Rotary Encoder 2

Timer

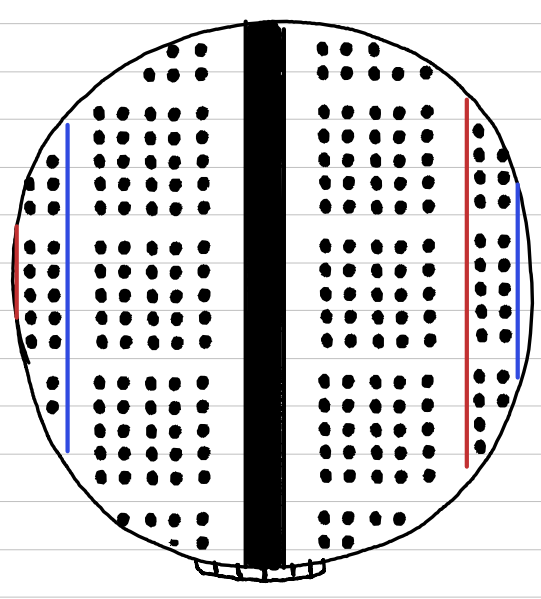
Question Sets

Feedback Loop

Digitize an answer key

How will user interact with this?

How will I actually make this?

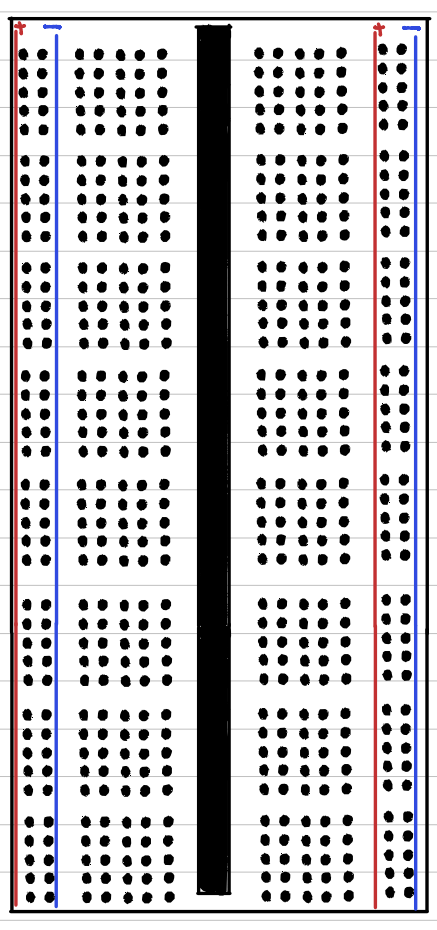


Top view

- Gotta have a bread board

Do you want it to be wireless?

— Its gonna need batteries.



Develop Arduino Logic to work with button that generates math questions.

Also develop dial to encode what questions are generated As in what subjects will they be pulled from.

Logic:

1- Develop code that ask a question with every button press. So you need to set up a circuit with button, next you need to ensure that arduino is sensing the mechanical information.

So arduino needs to sense button presses to be able to cycle through questions. But what does that logic look like? How do you implement cycle in an infinite loop?

You need a listener for when the button is pressed.

You need a counter that will increment by 1 when but is pressed. But you dont want it to keep incrementing if the button is held.

```
button = false
hold = false
pressed = false

if (button is being pressed) {
    counter ++
    if (button is being held) {
        The button is being held;
    } else {
        The button was pressed;
    }
} else {
    button is not pressed
    }
```

I have to play around with button to see how long a button click reads in arduino. So I have to map how long a button click looks like vs. how long a hold looks like.

So I got a raw measure of how long button clicks record for in arduino:

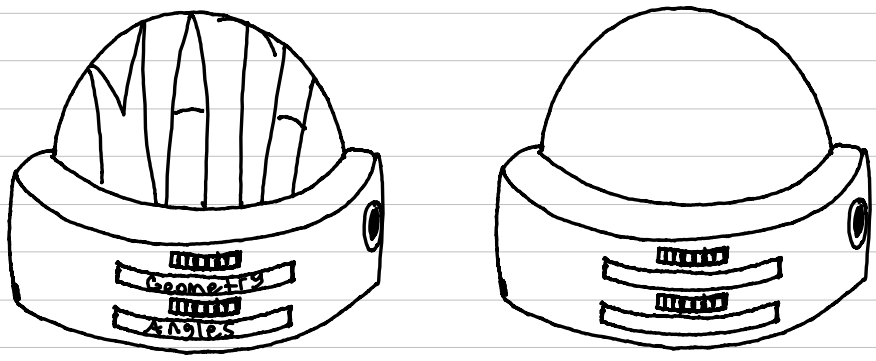
The counter increases very fast so I measure clicks based off the counter/50.

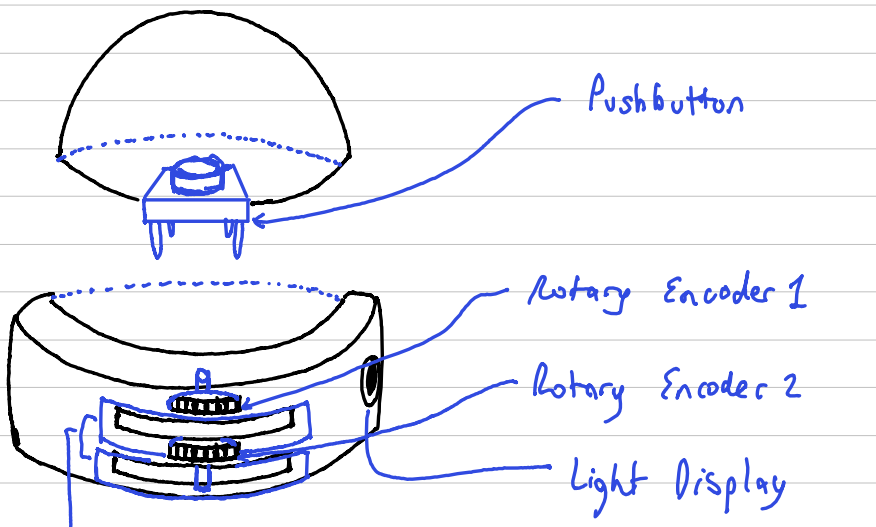
Now that I somewhat have control over the clicks, I have to think about button states.

One click turns question on

Click again question goes off

Two clicks goes to next question


Geometry
Angles


Pushbutton
Rotary Encoder 1
Rotary Encoder 2
Light Display
LCD Panels ?