SUNBEAMS ROBOTICS ECA CX - SEPT 3 2023

STEP ONE: (0)
> things to take

1. one arduino board
2. one arduino cable
3. two jumper wires (preferably of different colours)
4. one LED

> raise your hand once you've taken your gear

STEP TWO: (0)
> place your LED on the breadboard. make sure its two legs are on different rows. once that's done, insert your jumper wires on the same rows as the legs of your LED's

CHALLENGE ONE: (1)
> connect the jumper wire on the same row as the shorter leg to a GND pin on the arduino (GND = ground, like makey-makey)
> connect the other jumper wire to any of the "DIGITAL" pins on the right side of your arduino board

CHALLENGE TWO: (1)
> open up the arduino IDE on your computer and type in this code:

```
int LED = [the digital pin you put your jumper wire in]];

void setup() {
  pinMode(LED, OUTPUT);
}
void loop() {
  digitalWrite(LED, HIGH);
}
```

> verify the code with the tick button on the top left. if you don't find any errors, connect your arduino board to your pc and upload your code

CHALLENGE THREE: (1)
> add these lines to your void loop

```
delay(200);
digitalWrite(LED, LOW);
delay(1000);
```

> upload the code and see what happens
> make it so that the LED stays on for longer and stays off for a shorter amount of time

CHALLENGE FOUR: (1)

> change your void loop() to void dot()

> create a new void loop() and call your void dot() from there with...

```
        dot();
```

> what difference do you see?

> add a delay after calling the variable to show a difference

CHALLENGE FIVE: (1)

> create another function with void dash()

> make it so that the led stays on for longer. interval should be the same length as dot

> add it to your loop

result should be: dot dash dot dash dot dash dot dash dot dash ...

CHALLENGE SIX: (2)

> signal something in morse code

> (show morse code chart)

> you have the freedom to write whatever you want

> recommend putting delays between words

(while this is happening someone from our end should try making an LED say hello world)