1. Explaining Baseline Capacitance Using CPX (A1 Pin + Alligator Clip

Step 1: Setup

- Connect an alligator clip to pin A1 on the Circuit Playground Express (CPX)
- Attach the other end of the clip to a small piece of aluminum foil.
- Make sure the CPX is connected to your computer via USB.-
- Open the Mu Editor and make sure the CIRCUITPY drive is visible.-
- Do not touch the foil when the board starts — let it settle.

Step 2: What is Baseline Capacitance?

- The CPX uses capacitive sensing to detect touch.
- It sets a 'baseline' capacitance value automatically at startup.
- This baseline represents the normal state when no one is touching the foil.
- When your finger touches the foil, it adds a small amount of charge.
- If the new value is higher than the baseline, CPX detects a touch

Step 3: Code Example

```
from adafruit_circuitplayground import cp
import time
while True:
    if cp.touch_A1:
    print("Touched A1!")
    cp.play_tone(262, 0.2
```

Step 4: Testing and Reset

- Once the code is saved and running, try touching the foil.
- You should hear a tone if the touch is detected.
- If the tone plays even without touching, reset the board.
- This helps CPX re-establish the correct baseline.

Learning Outcome

- ***Understand how capacitive touch works on CPX.***

- ***Learn the importance of the baseline in detecting touch accurately.***

- ***Be able to create a touch triggered sound project using alligator clips and foil .***