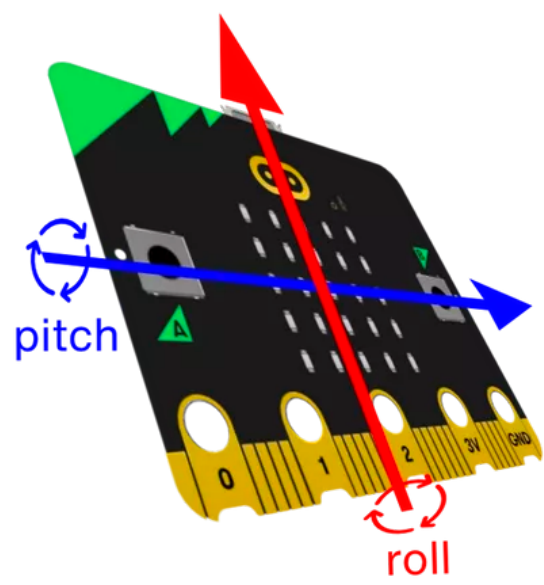


MICRO:BIT CLINOMETER

With Recycled Materials

A clinometer is a tool that is used to measure the angle of elevation, or angle from the ground, in a right - angled triangle.

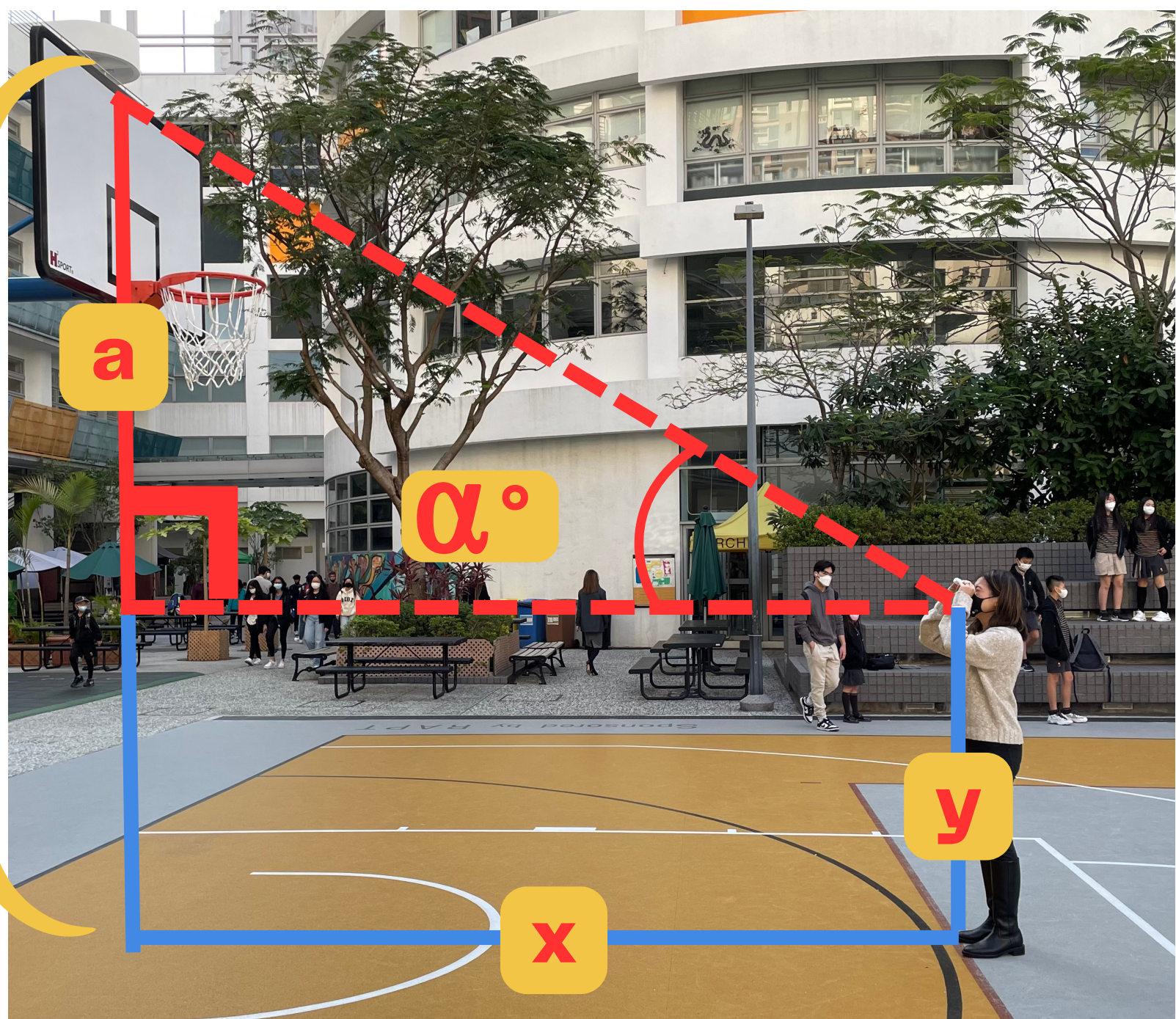
HOW IT WORKS:



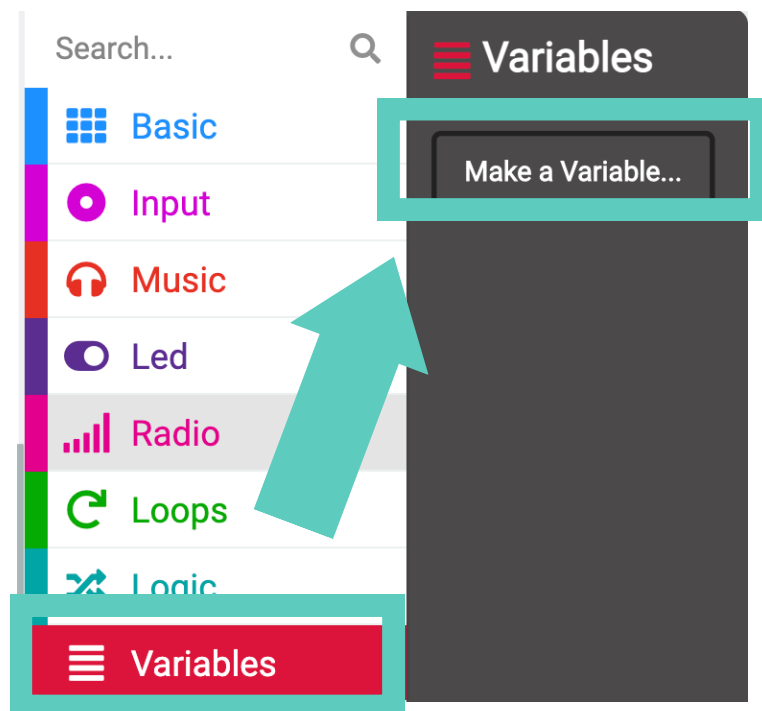
The micro:bit has a part called the **accelerometer** that can check how the micro:bit is moving. In this project, micro:bit senses the angle of rolling and show the angle on the LED screen.

rotation (°) roll ▾

Height = $a + y$



STEP 1: CODE MICRO:BIT



Create two variables named 'measure' and 'dataLog'.

dataLog ▾

measure ▾

```
on button A pressed
  set dataLog to rotation (°) roll
  set measure to true
  while measure = true
    do show number dataLog
```

Use measure to define Micro:bit is measuring the rolling angle.

Set the dataLog value as the rolling angle of Micro:bit.

Every time when button A is pressed, the angle will be recorded by Micro:bit and you can retrieve the data later.

While Micro:bit is measuring the angle, it shows the number of the angle.

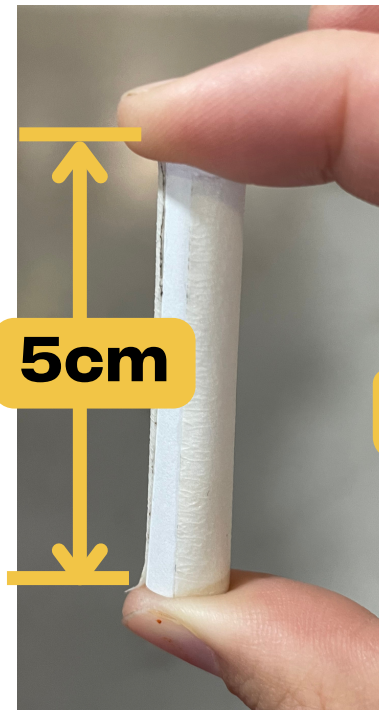
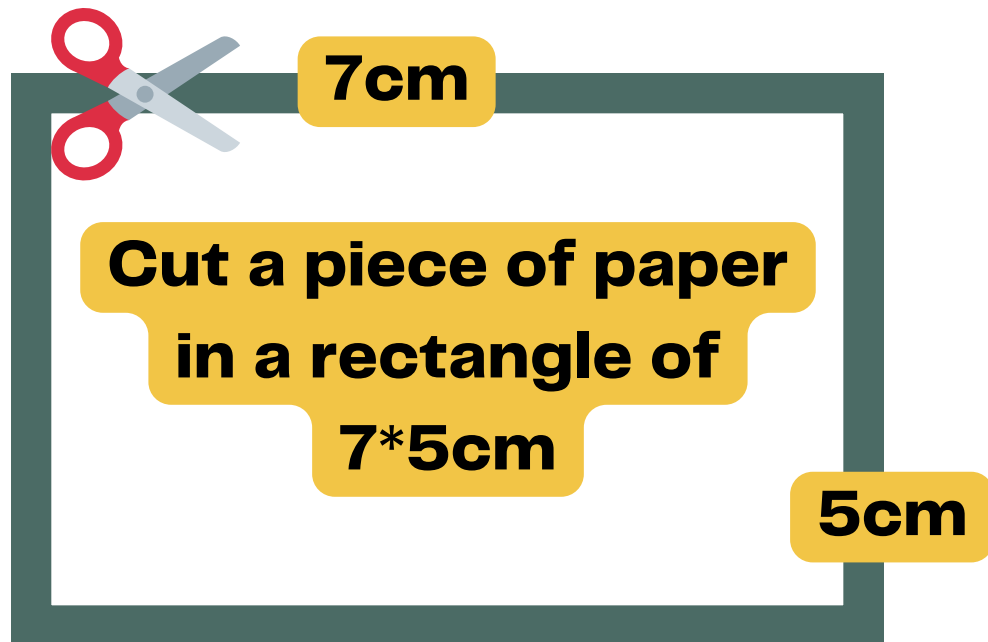
```
on button B pressed
  set measure to false
  while measure = false
    do show icon [ready to measure]
      pause (ms) 100
      show icon [ready to measure]
      pause (ms) 100
```

Use measure to define Micro:bit is NOT measuring the angle.

While Micro:bit is not measuring the angle, it has the animation to show 'ready to measure'.

Those two icons show up on the LED screen with 100 ms intervals.

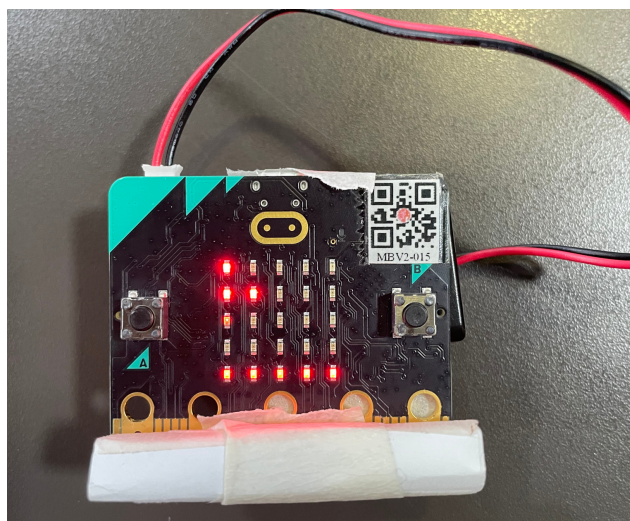
STEP 2: Make a Lense and assemble



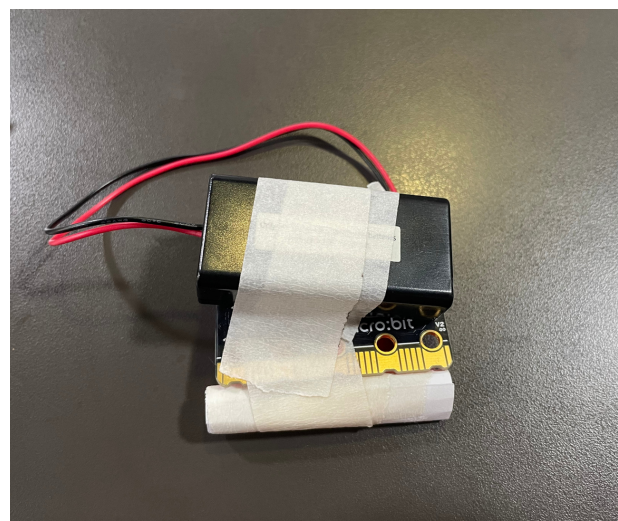
Make it a paper roll. Tape it with masking tape.

Use MASKING TAPE TO TAPE THE PAPER ROLL ON TOP OF THE PINS. TAPE THE BATTER PACK WITH MICRO:BIT.

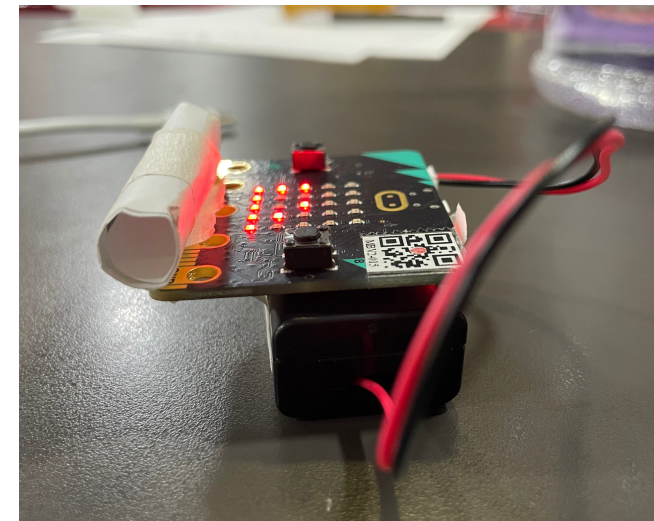
Front



Back



Side



STEP 3: RECORD YOUR DATA



GET A PENCIL AND PAPER READY, AND RECORD YOUR MEASUREMENT.

TARGET	X	Y	ANGLE