

MICRO:BIT & AI

COLOR INDICATOR

INTRO

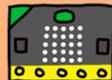
Use micro:bit and AI to create a color indicator that helps people who struggle to recognize colors by giving real-time feedback and making it easier for them to distinguish between different colors.

WHAT WE NEED

Micro:Bit AI: <https://microbitai.inventor.city/>

MakeCode: <https://makecode.microbit.org/>

Micro:Bit

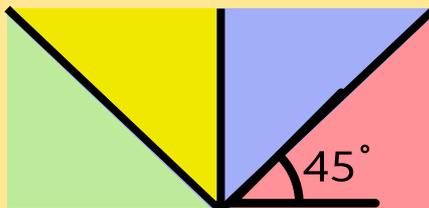


ANGLE CALCULATION

We split the cardboard into four parts to display four colors. We use a positional servo (180) to ensure that each section is at a 45 degree angle.



Positional servo
(0-180 deg)



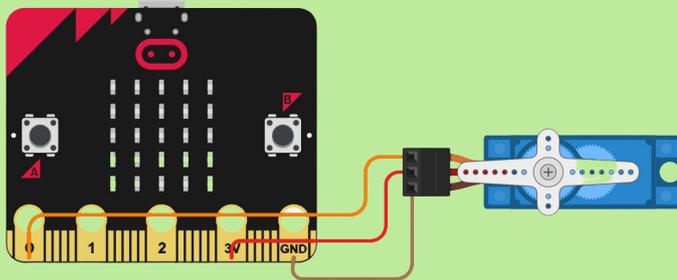
Red: 22.5°

Blue: 67.5°

Yellow: 112.5°

Green: 157.5°

PHYSICAL SETUP



Connect to Pin 0



CODE

- Step 1:
Create an image recognition model via Google Teachable Machine Site.
- Step 2:
Go to the provided MakeCode Starter to adjust the code. The class names should be aligned with your AI model.
- Step 3:
Follow instructions on Micro:Bit AI site and connect to your AI models.

serial on data received new line ()

set SerialData to serial read until new line ()

play tone Middle C for 1/8 beat

if SerialData = red then

set servo P0 angle to 23 °

show string 'R'

else if SerialData = blue then

set servo P0 angle to 68 °

show string 'B'

else if SerialData = yellow then

set servo P0 angle to 113 °

show string 'Y'

else

set servo P0 angle to 158 °

show string 'G'

on start

serial redirect to USB

The names should be the same with class names in your AI models.

You need to add the servo extension. Angles have been calculated based on four different color sections.

Extensions

servo
A micro-servo library

Initial letter of each color showing on Micro:Bit