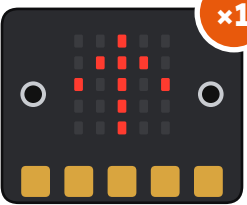


1 What you need

- 

×1

Micro:bit

the brain: it runs your program
- 

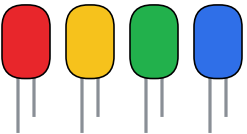
×1

Breakout board (pin:bit)

the Micro:bit slides in; its pins go into the breadboard
- 

×1

USB cable

power and the program from the laptop
- 

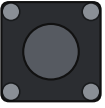
×4

LEDs

red, yellow, green, blue. Long leg = +
- 

×4

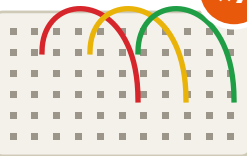
Resistors 220 Ω

red, red, brown, gold
- 

×1

Push button

for the pedestrians (level 4)

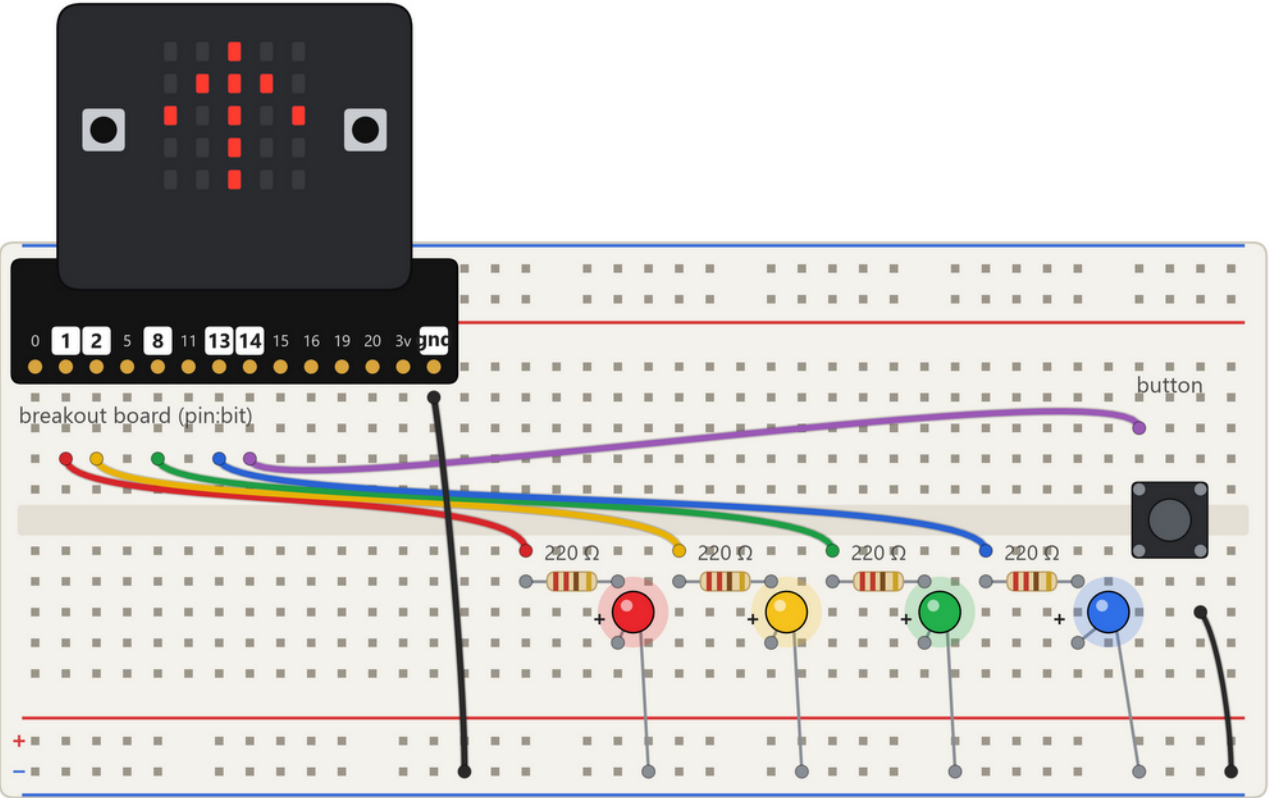


×7

Breadboard and wires

jumper wires

2 Wire it: Micro:bit



pin 1 → red LED

pin 2 → yellow LED

pin 8 → green LED

pin 13 → blue LED

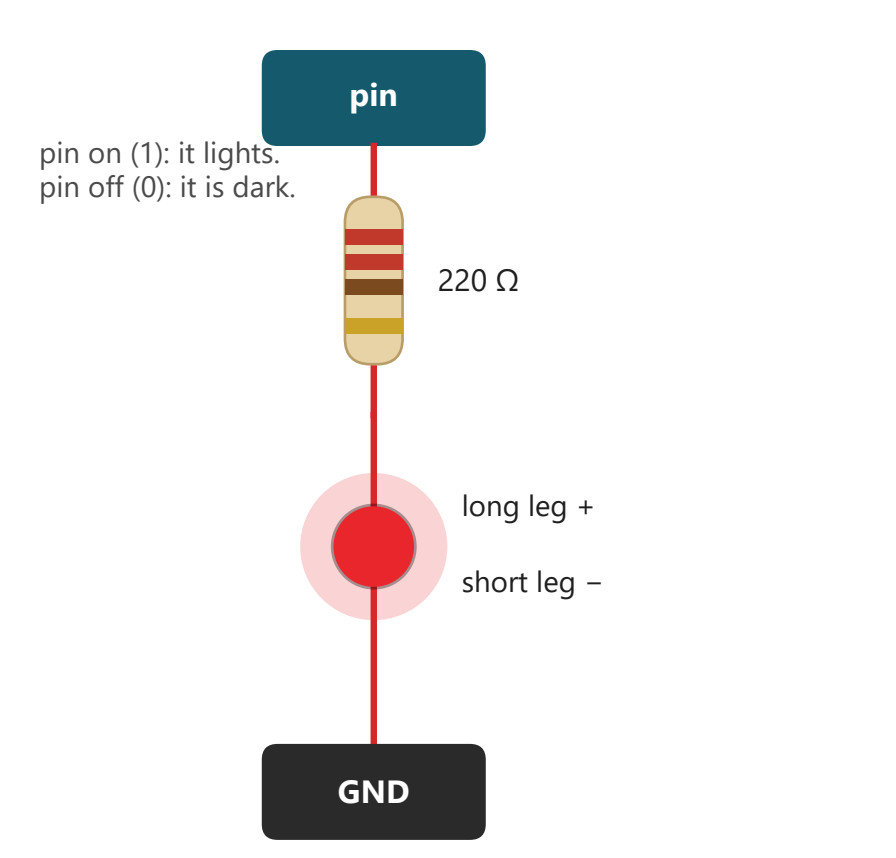
pin 14 → button

gnd → - rail

Each LED: long leg (+) to the resistor, short leg in the - rail.

Unplug the USB cable while you wire.

4 The LED circuit



3 Program it, level by level

MakeCode: Advanced → Pins

Level 1: One LED

forever

digital write pin P1 to 1

pause (ms) 500

digital write pin P1 to 0

pause (ms) 500

Level 2: Police lights

forever

digital write pin P1 to 1

digital write pin P13 to 0

pause (ms) 300

digital write pin P1 to 0

digital write pin P13 to 1

pause (ms) 300

Level 3: Traffic lights

function lights red yellow green

write P1 to red

write P2 to yellow

write P8 to green

forever

lights 1 0 0

pause (ms) 3000

lights 1 1 0

pause (ms) 1000

lights 0 0 1

pause (ms) 3000

lights 0 1 0

pause (ms) 1000

Level 4: Pedestrian button

on start

set pull pin P14 to up

forever

lights 0 0 1

while read P14 = 1

pause 20

pause (ms) 1000

lights 0 1 0

pause (ms) 1000

lights 1 0 0

pause (ms) 4000

lights 1 1 0

pause (ms) 1000

Scan: guide + lights lab