Strawbees®

ROBOTIC INVENTIONS

for micro:bit

CODING CARDS

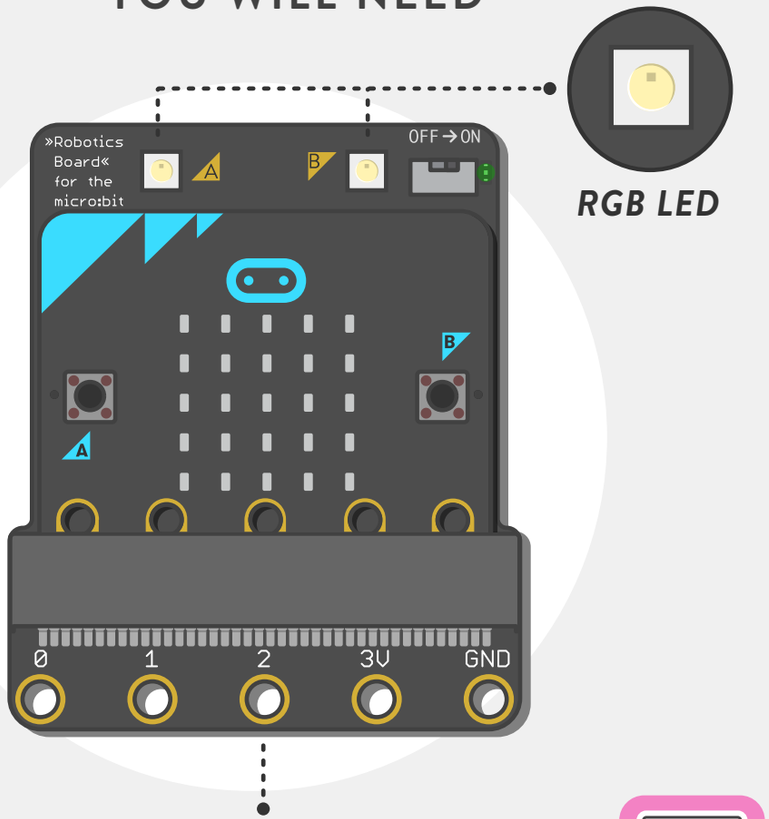
For courses, curriculum-aligned lessons, and other fun resources:

classroom.strawbees.com

BLINK

```
forever
    set RGB LED A to white
    pause (ms) 1000
    set RGB LED A to black
    pause (ms) 1000
```

YOU WILL NEED

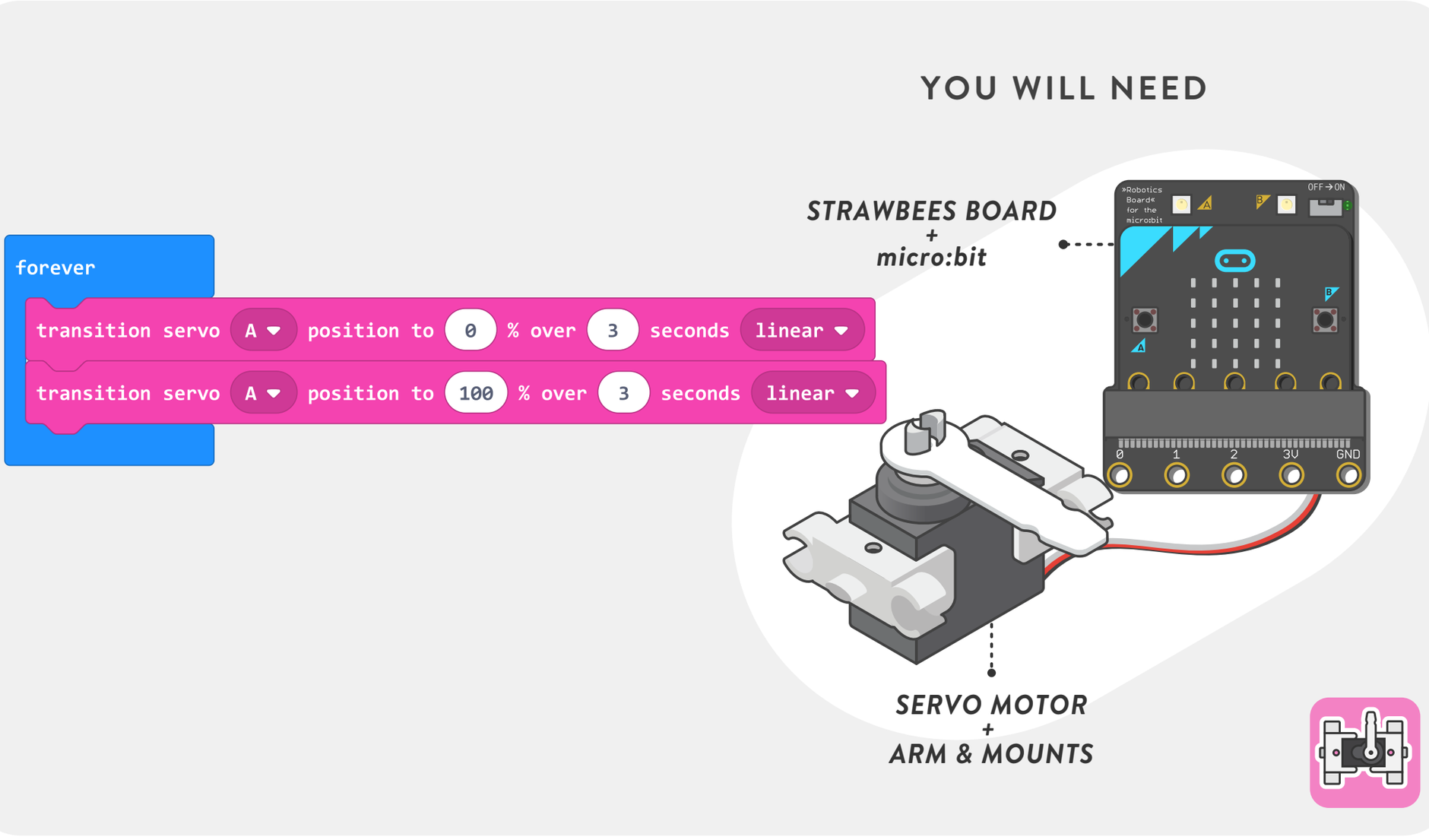


RGB LED

STRAWBEES BOARD
+
micro:bit

makecode.microbit.org

BACK AND FORTH

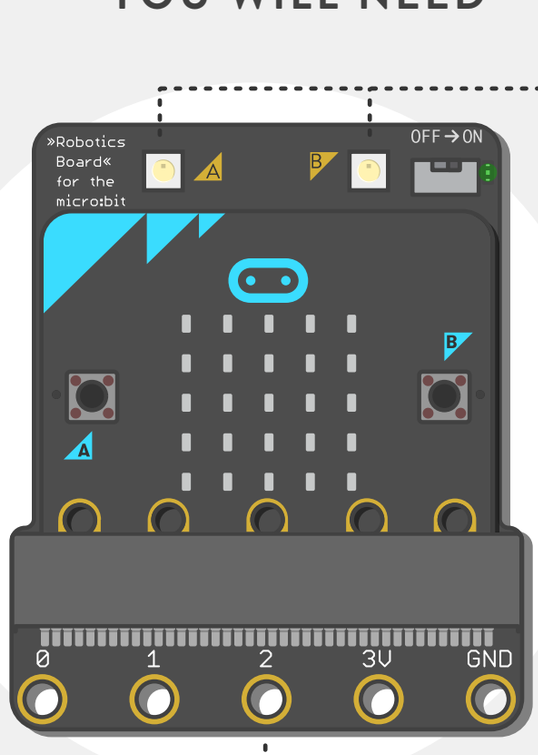


makecode.microbit.org

CHANGE COLOR 10 TIMES

```
on start
  repeat 10 times
  do
    set RGB LED A to red 100 % green 0 % blue 0 %
    pause (ms) 500
    set RGB LED A to red 0 % green 0 % blue 100 %
    pause (ms) 500
  set RGB LED A to red 0 % green 0 % blue 0 %
```

YOU WILL NEED

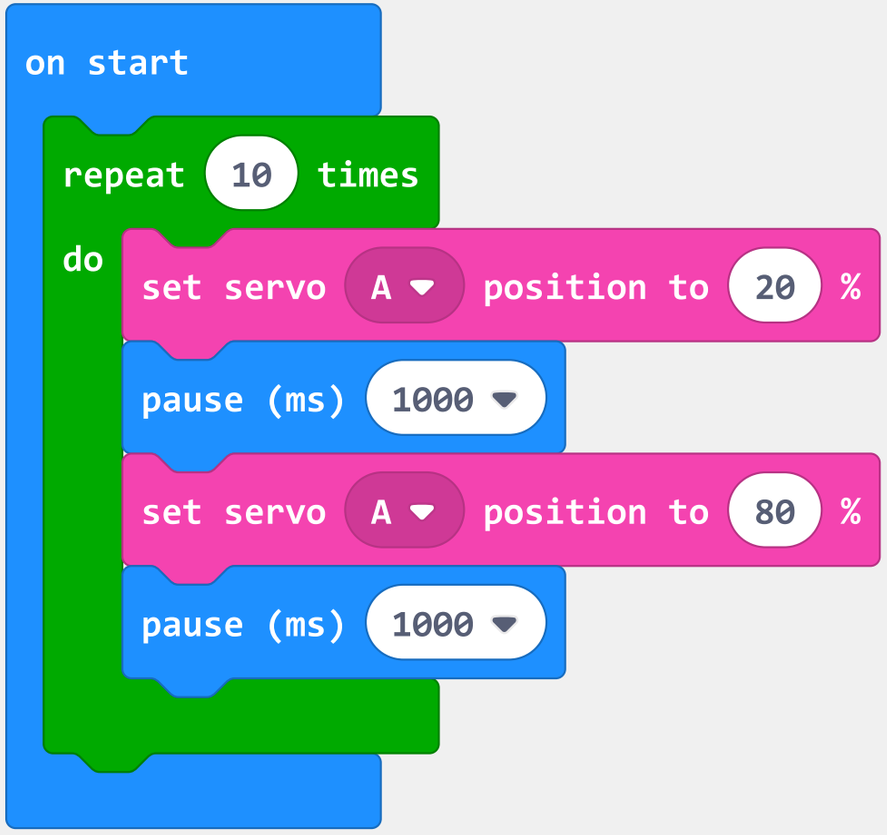


RGB LED

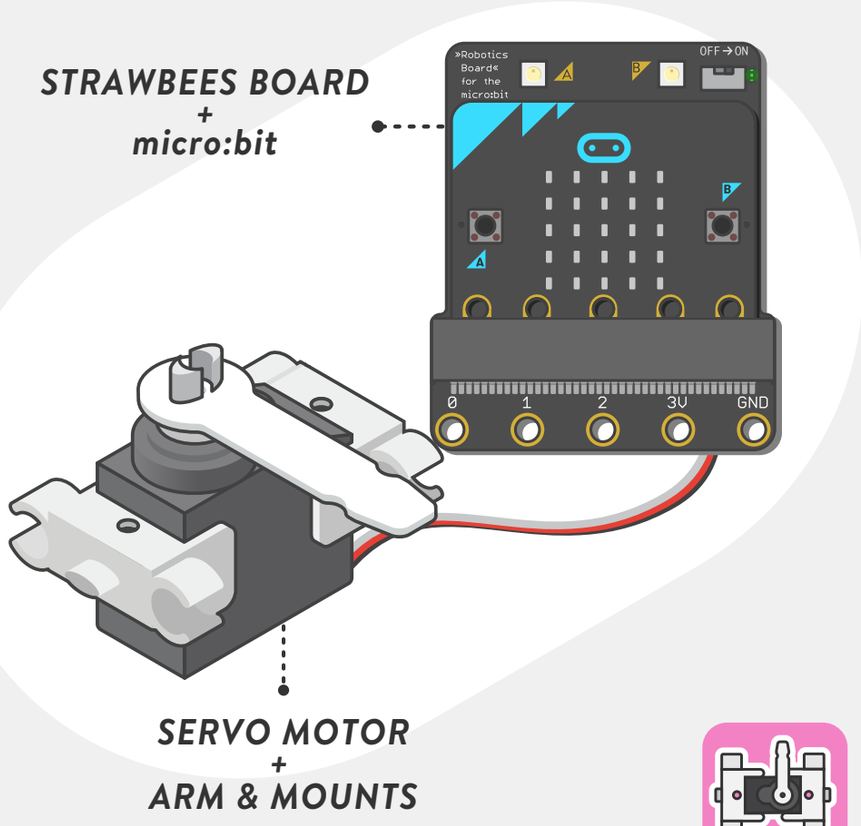
STRAWBEES BOARD
+
micro:bit

makecode.microbit.org

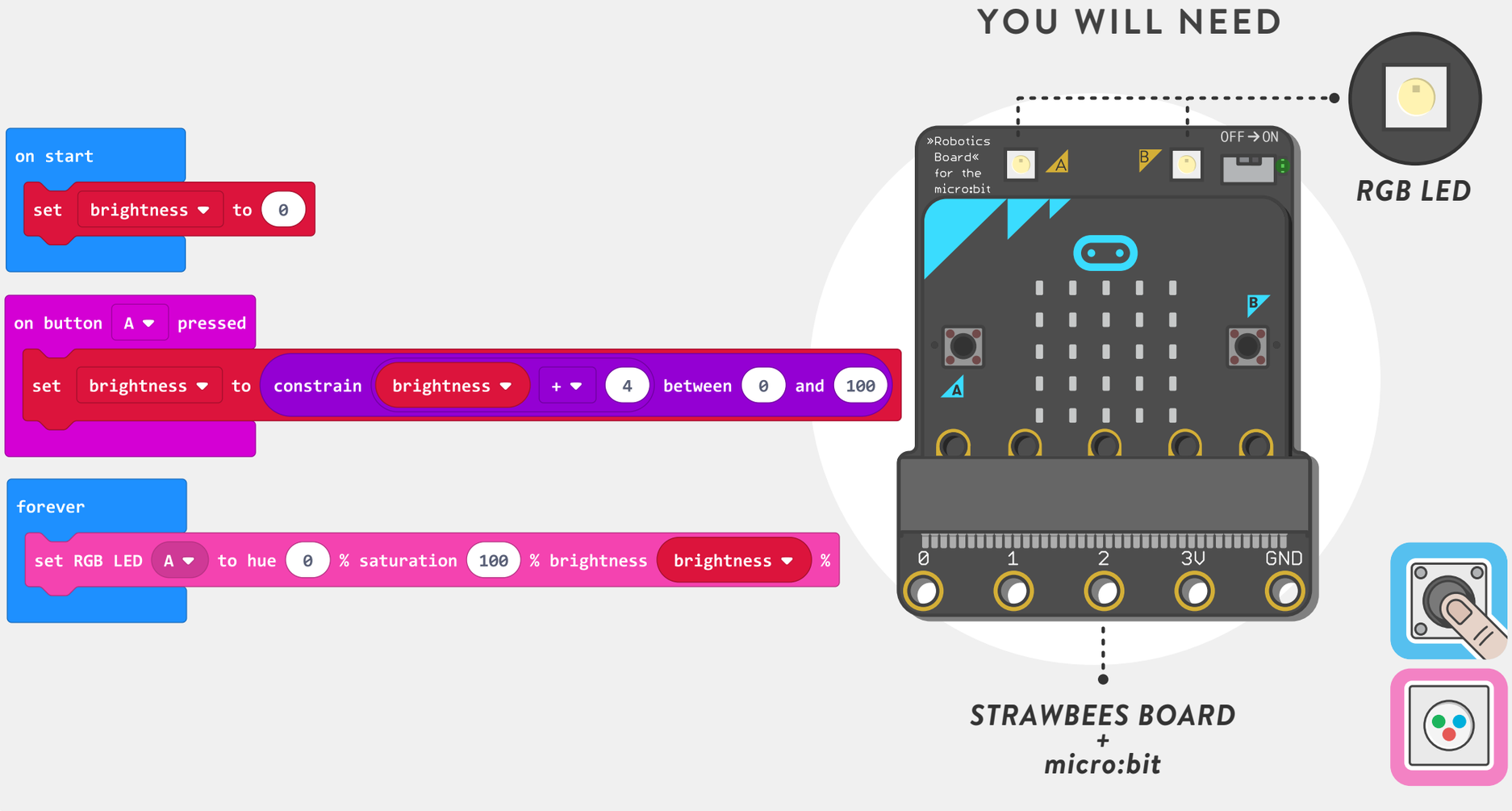
WAVE 10 TIMES



YOU WILL NEED



GRADUALLY CHANGE BRIGHTNESS

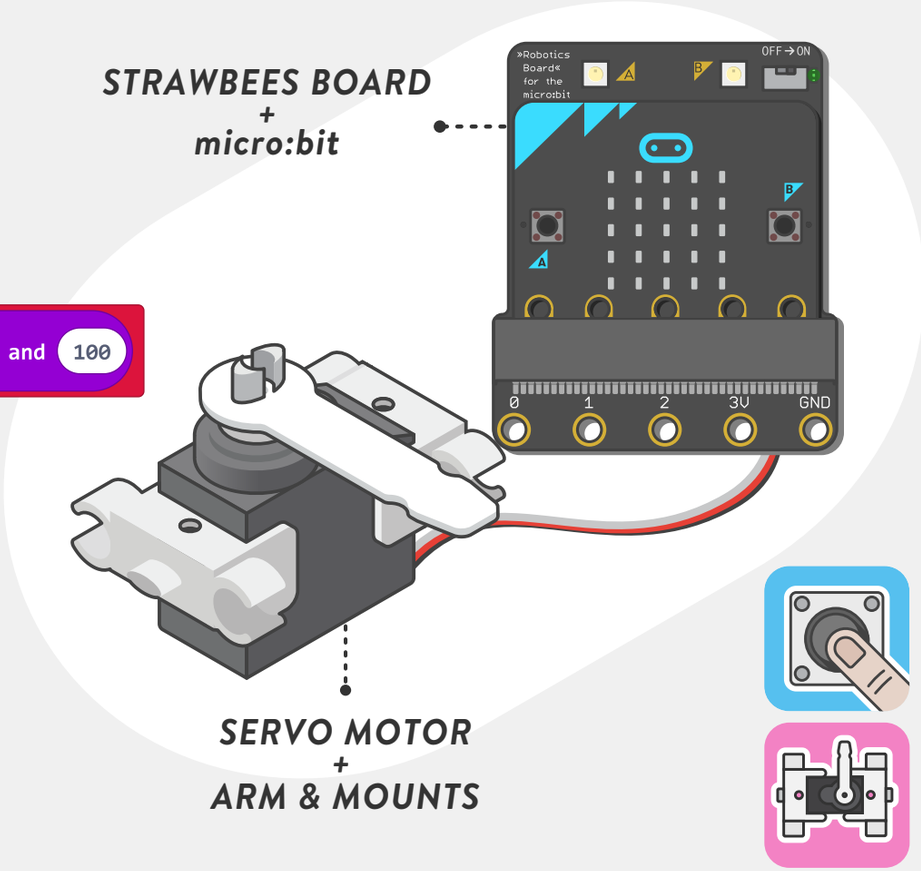


makecode.microbit.org

GRADUALLY CHANGE POSITION

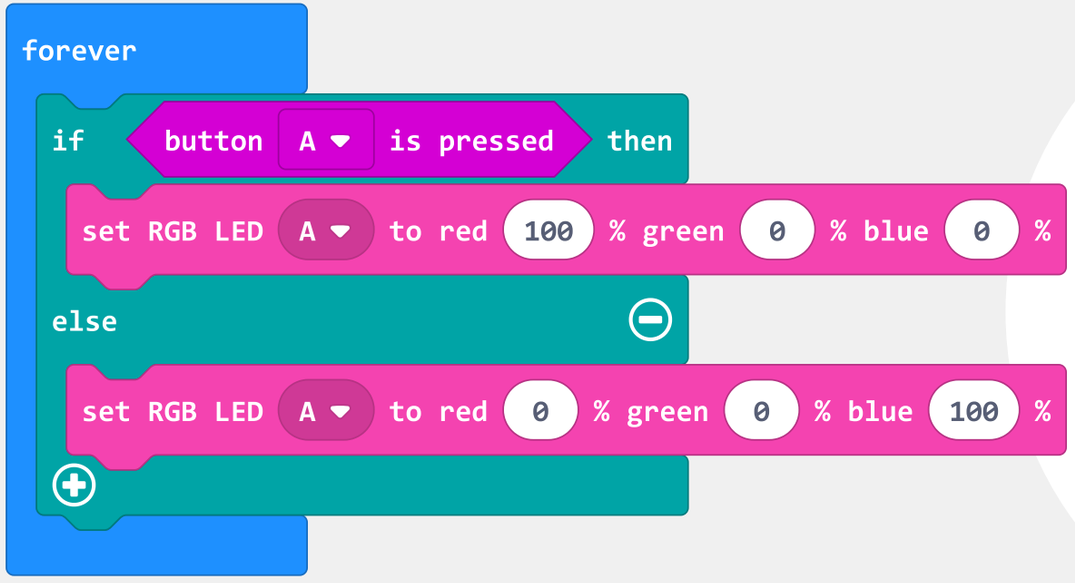
```
on start
    set position to 0

on button A pressed
    set position to constrain position + 4 between 0 and 100

forever
    set servo A position to position %
```

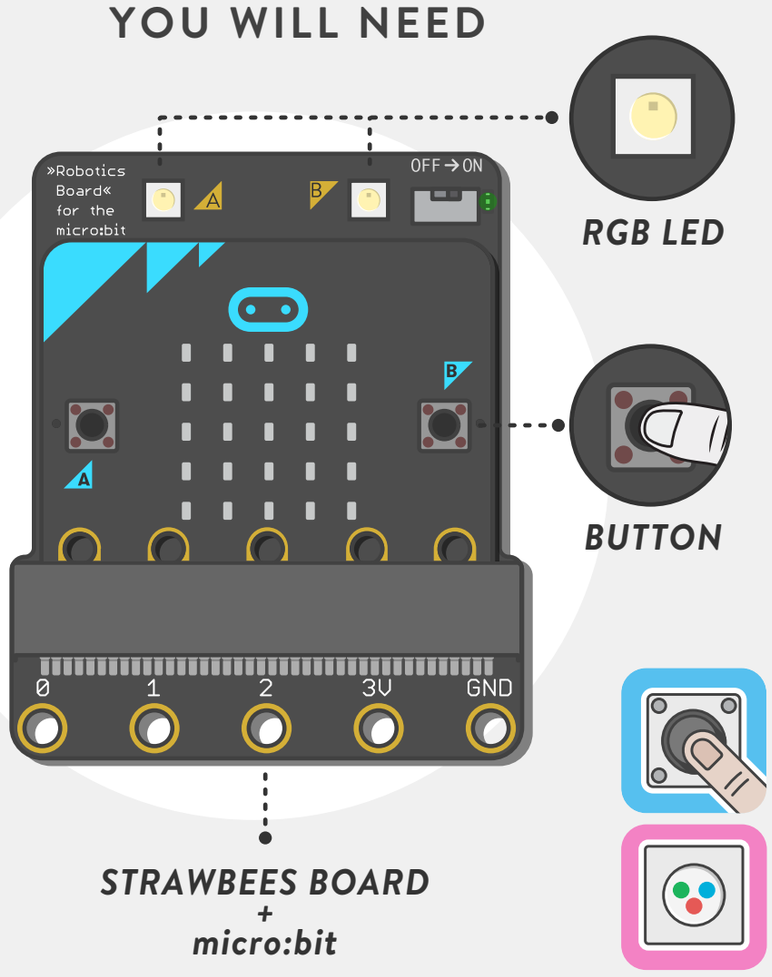
YOU WILL NEED



makecode.microbit.org

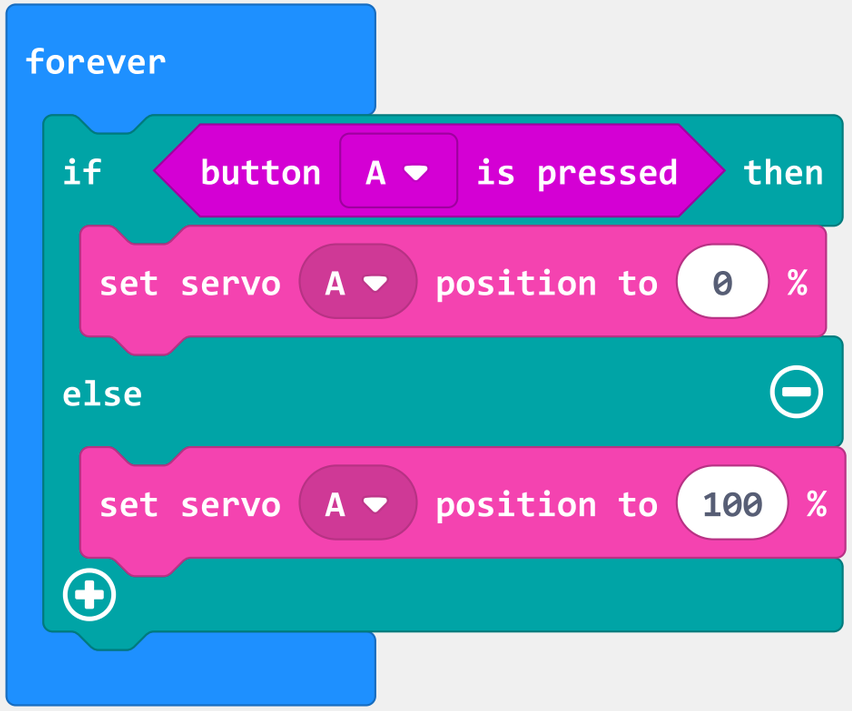
CHANGE COLOR WHILE PRESSING BUTTON



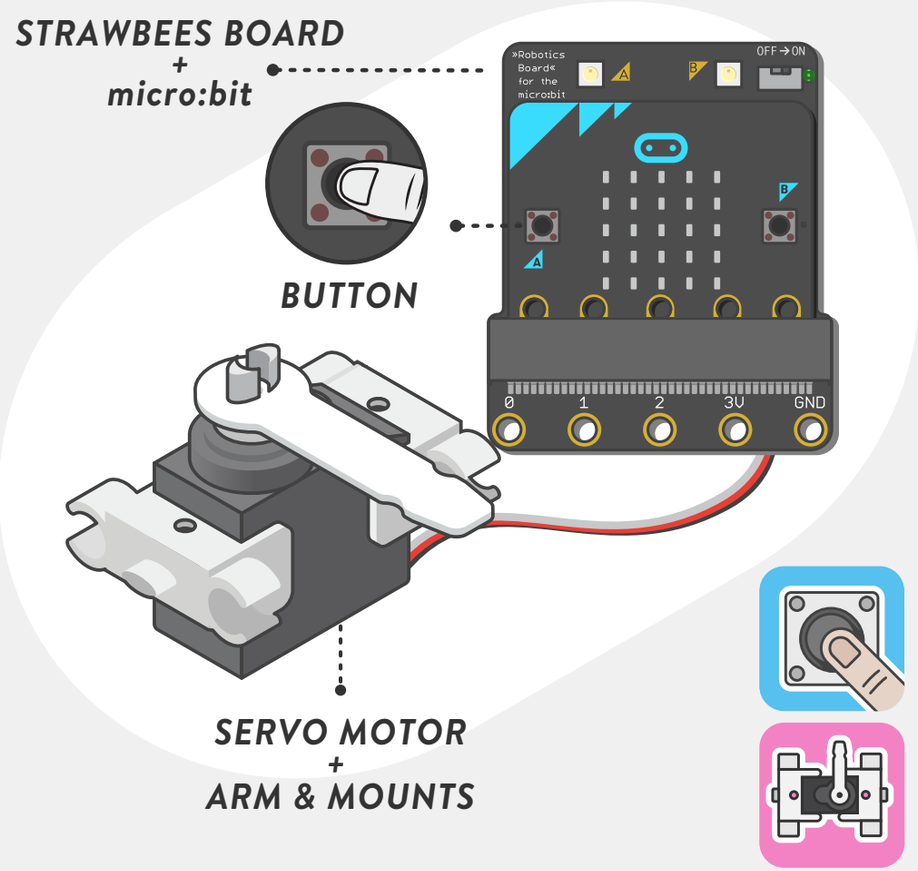


makecode.microbit.org

CHANGE POSITION WHILE PRESSING BUTTON

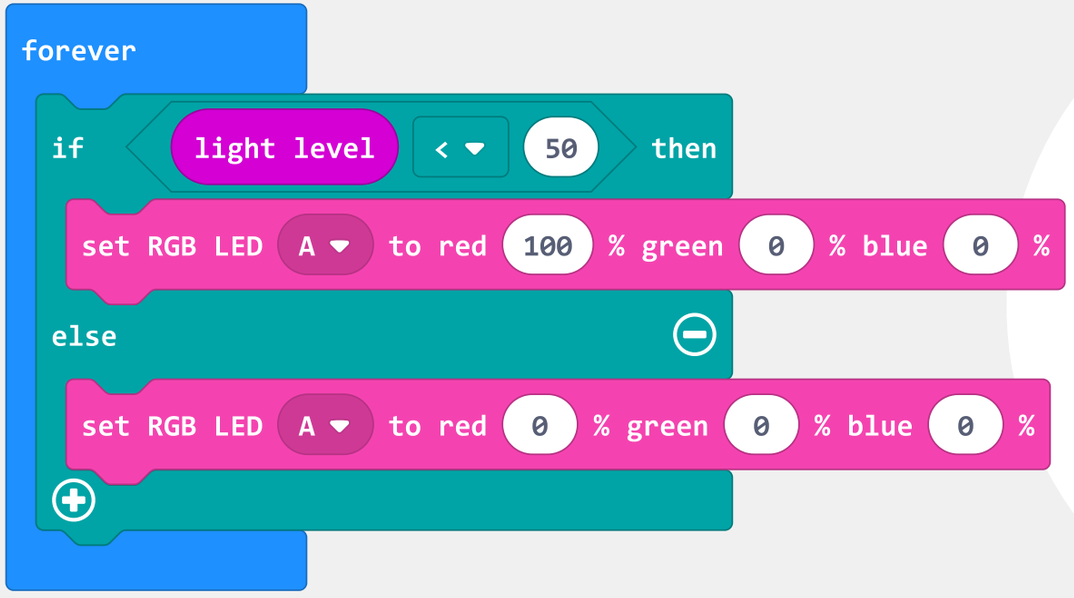


YOU WILL NEED



makecode.microbit.org

SHINE IN THE DARK



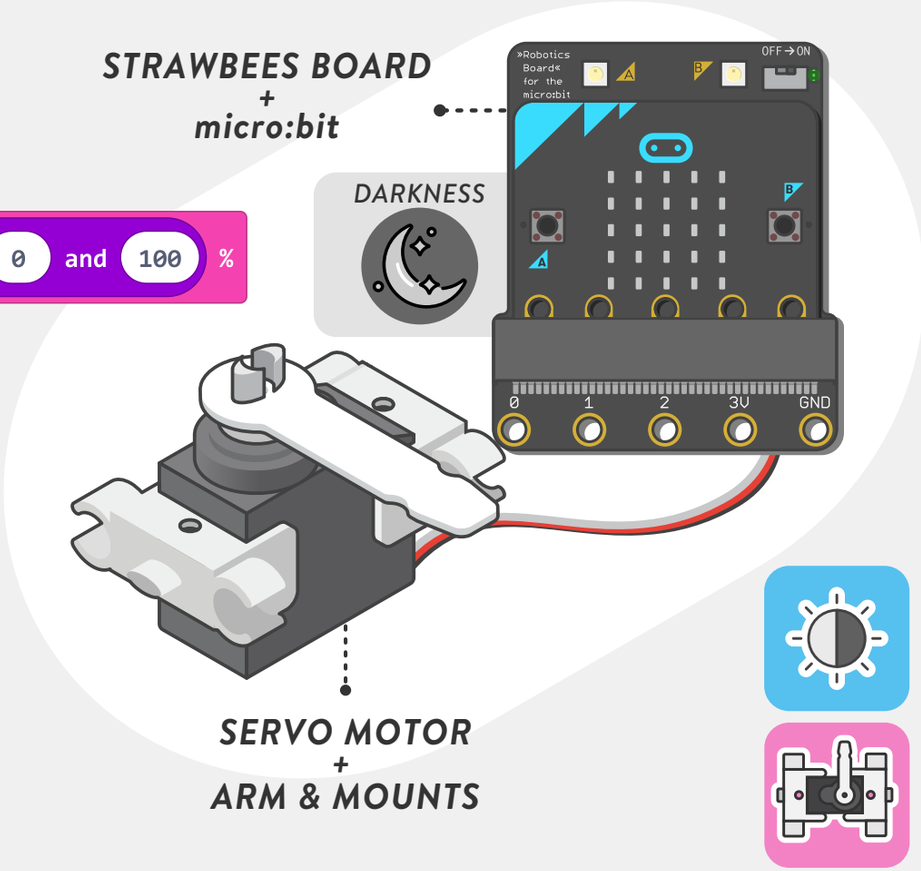
YOU WILL NEED

makecode.microbit.org

MOVE IN THE DARK

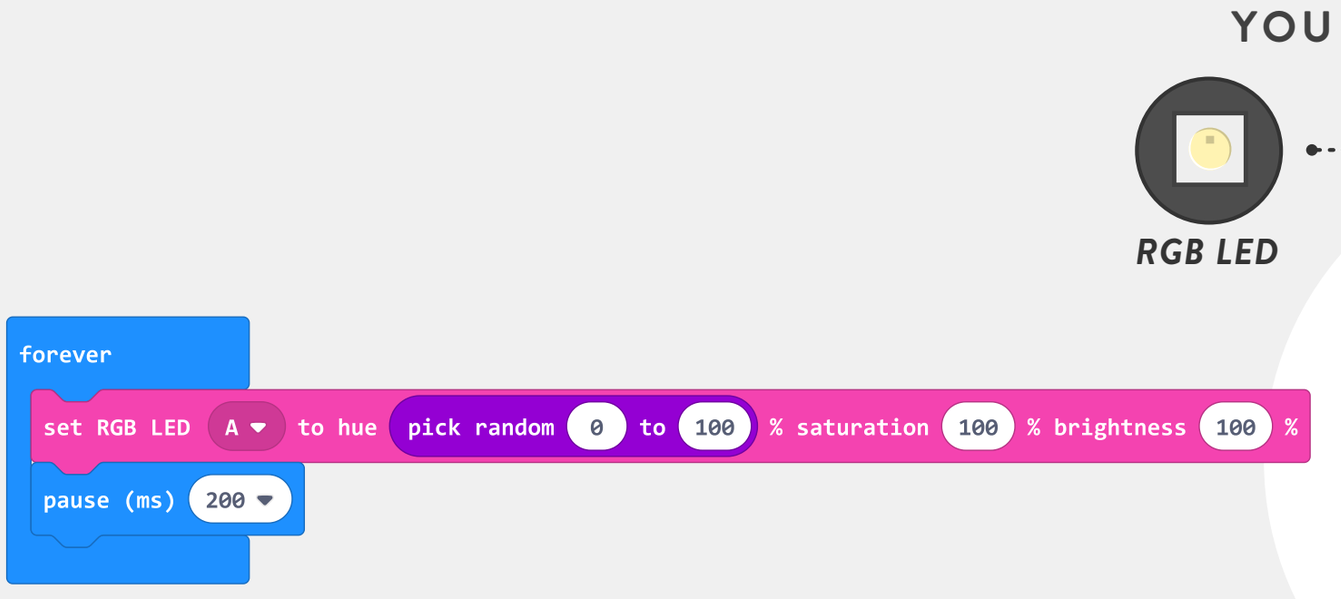
```
forever
    set servo A position to constrain light level between 0 and 100 %
```

YOU WILL NEED



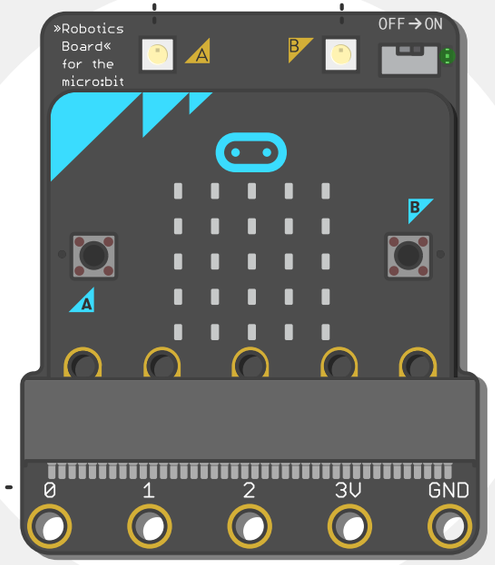
makecode.microbit.org

COLOR PARTY



YOU WILL NEED

RGB LED



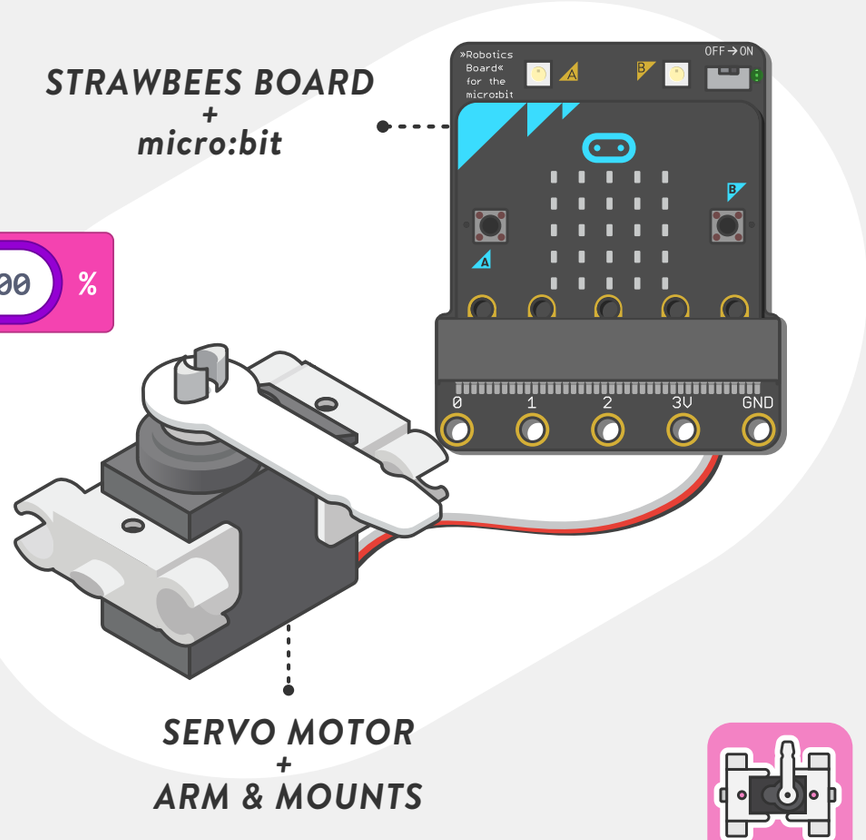
STRAWBEES BOARD + micro:bit

makecode.microbit.org

SHAKE

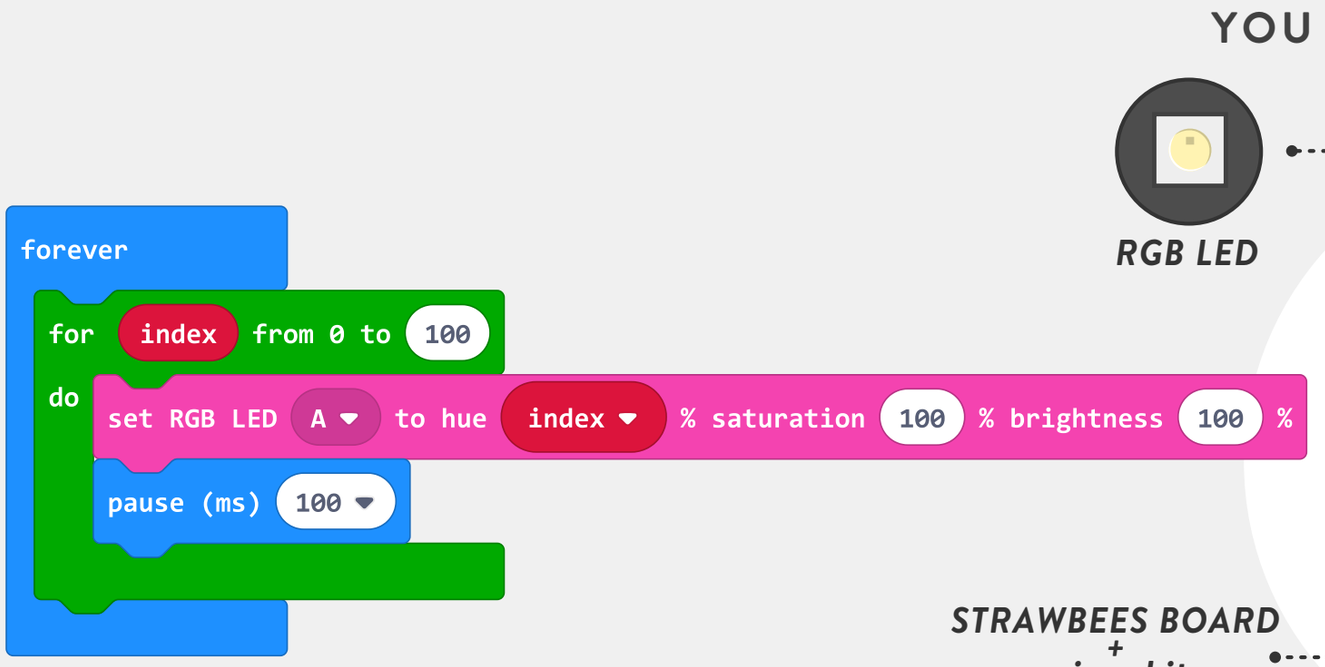
```
forever
    set servo A position to pick random 0 to 100 %
```

YOU WILL NEED



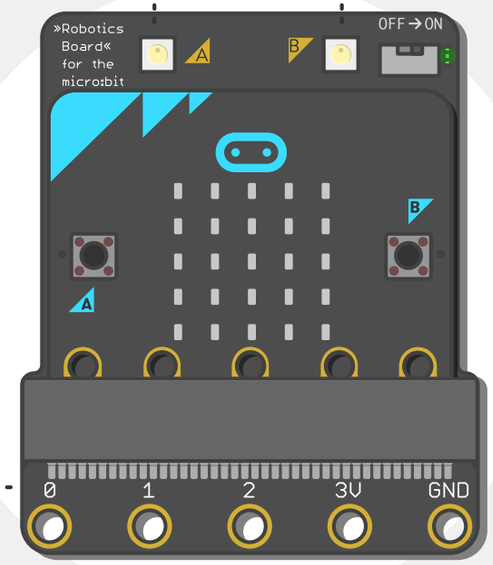
makecode.microbit.org

RAINBOW



YOU WILL NEED

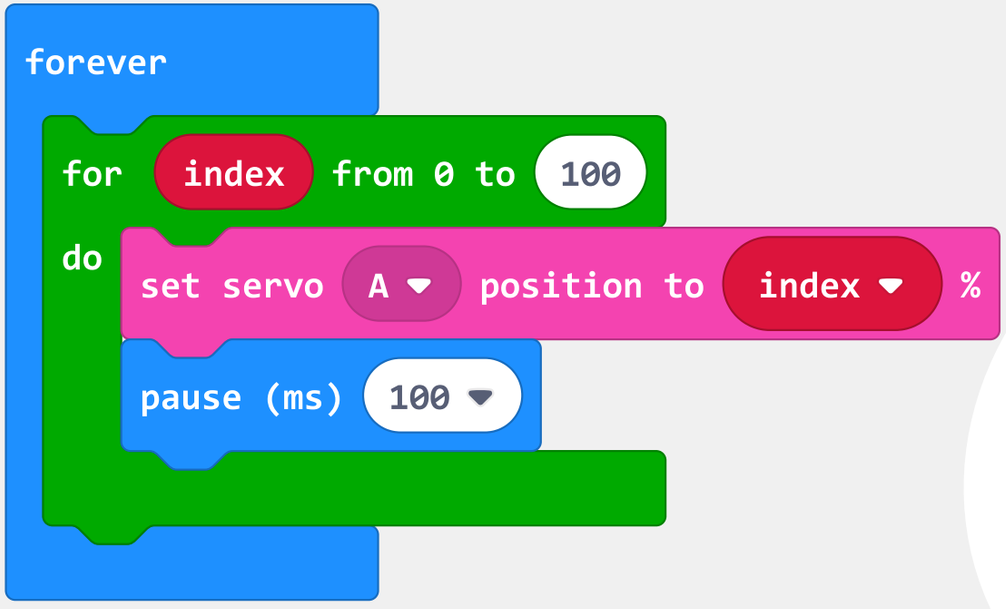
RGB LED



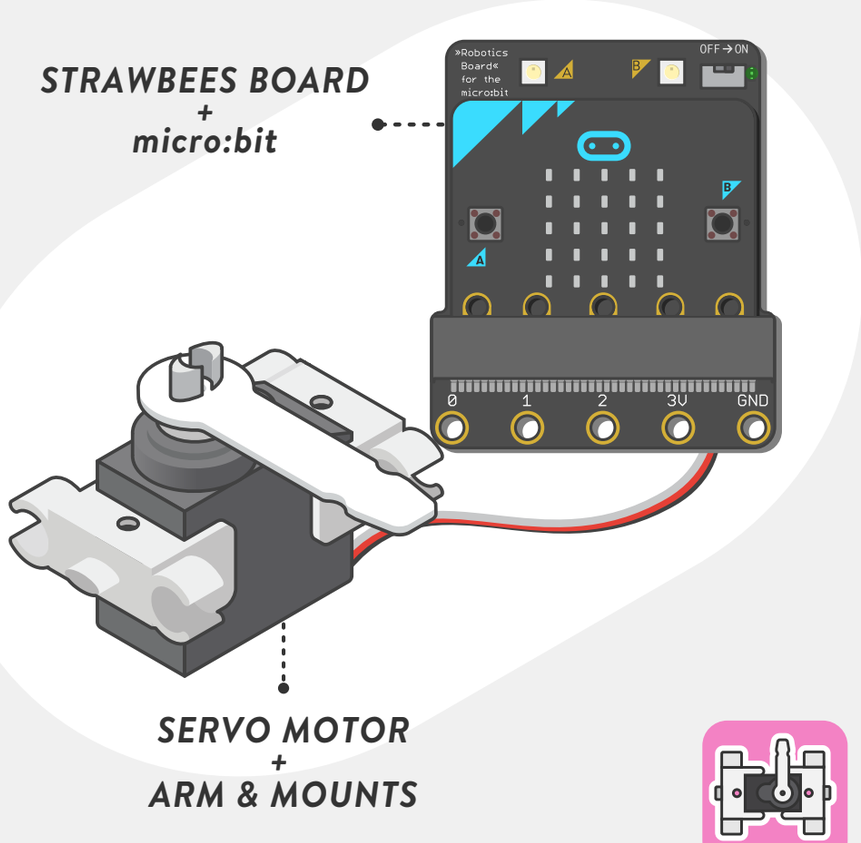
STRAWBEES BOARD
+
micro:bit

makecode.microbit.org

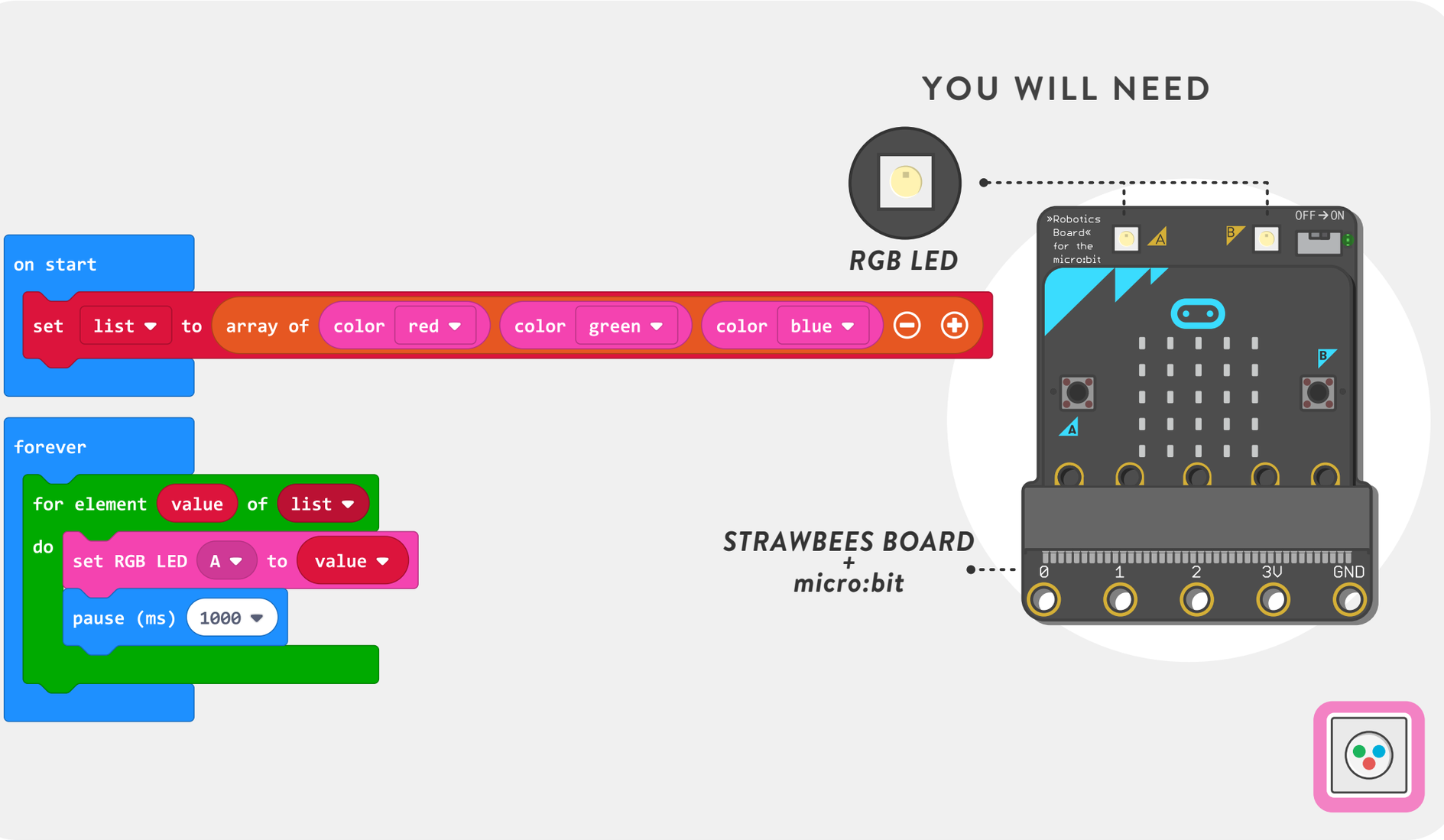
SWEEP MOTOR



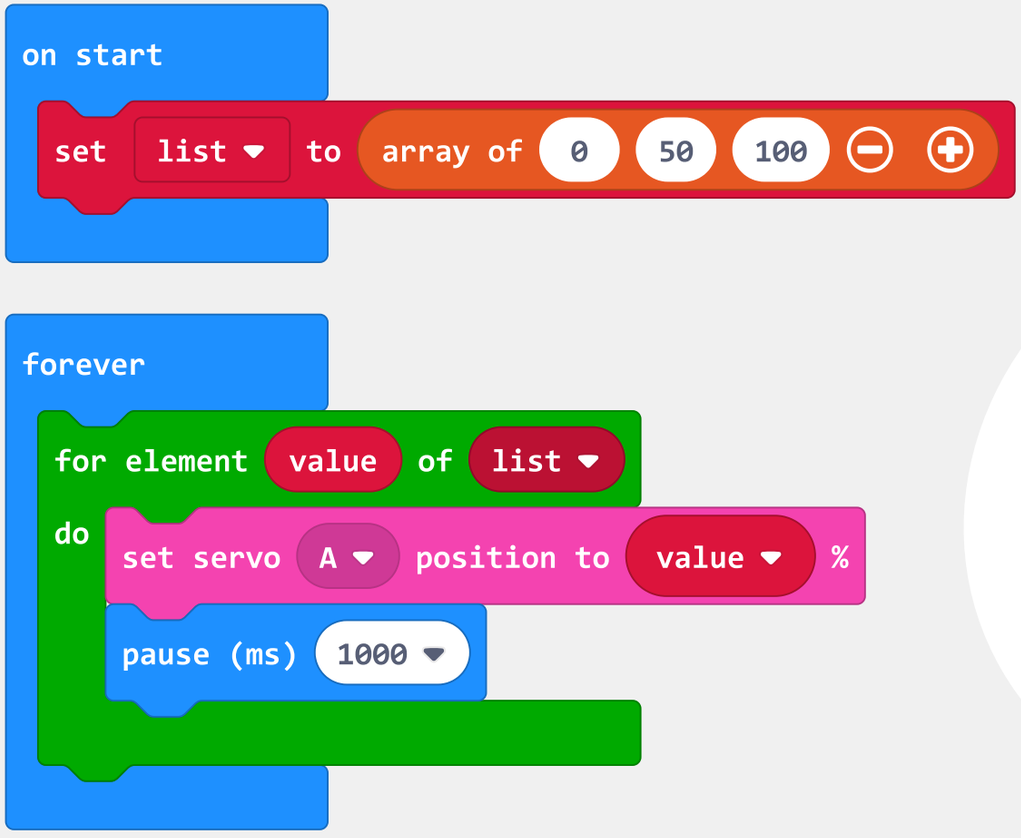
YOU WILL NEED



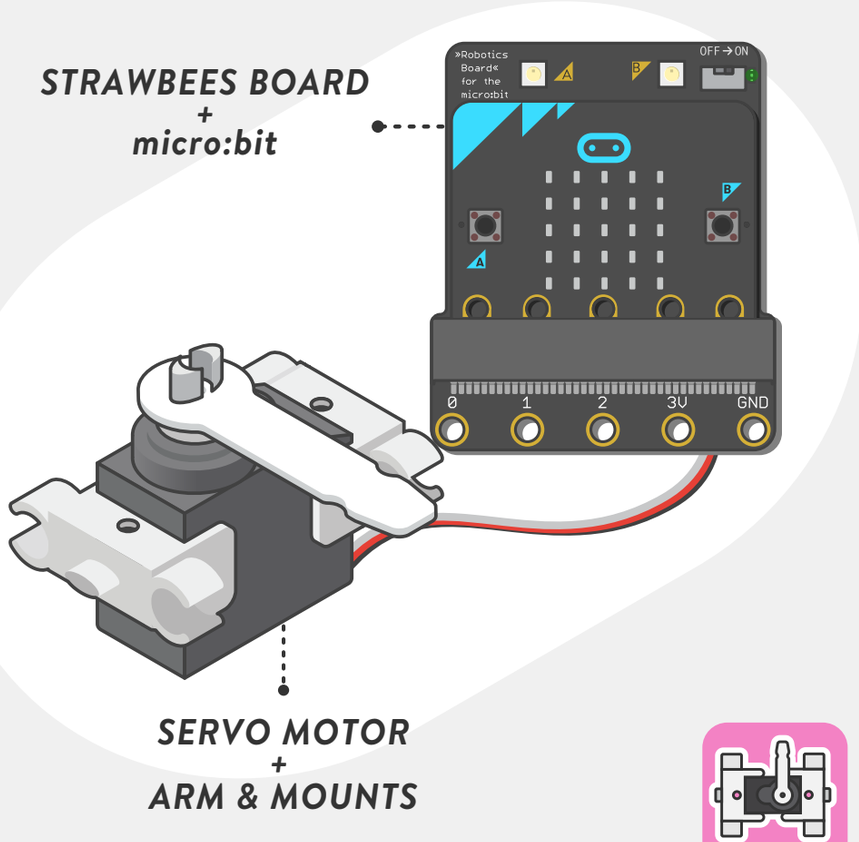
LOOP OVER A LIST OF COLORS



LOOP OVER A LIST OF POSITIONS

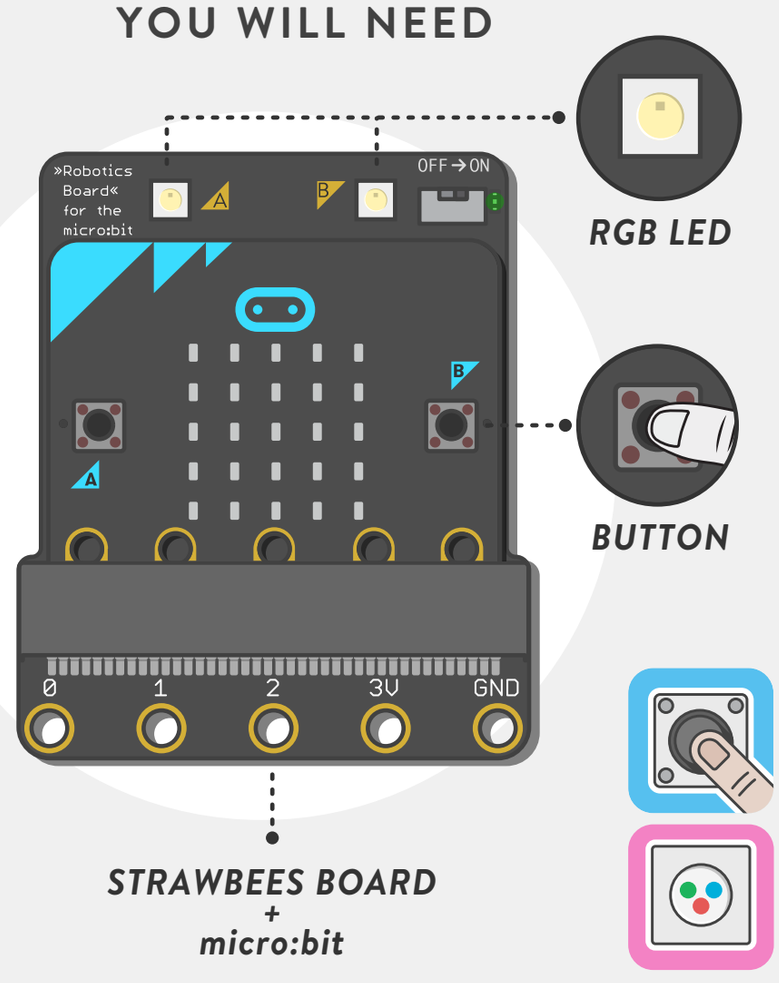


YOU WILL NEED



LIGHT SWITCH

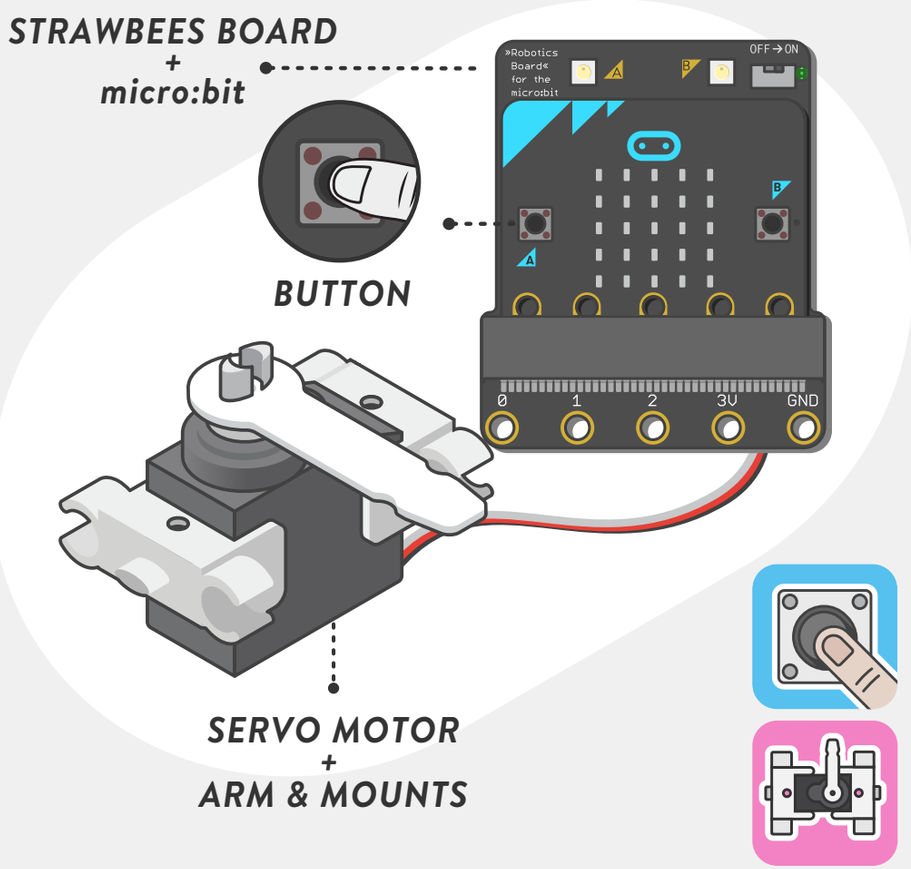
```
on button A pressed
  if toggle = 0 then
    set RGB LED A to red 100 % green 0 % blue 0 %
    set toggle to 1
  else
    set RGB LED A to red 0 % green 0 % blue 0 %
    set toggle to 0
```



PRESS BUTTON TO TOGGLE POSITION

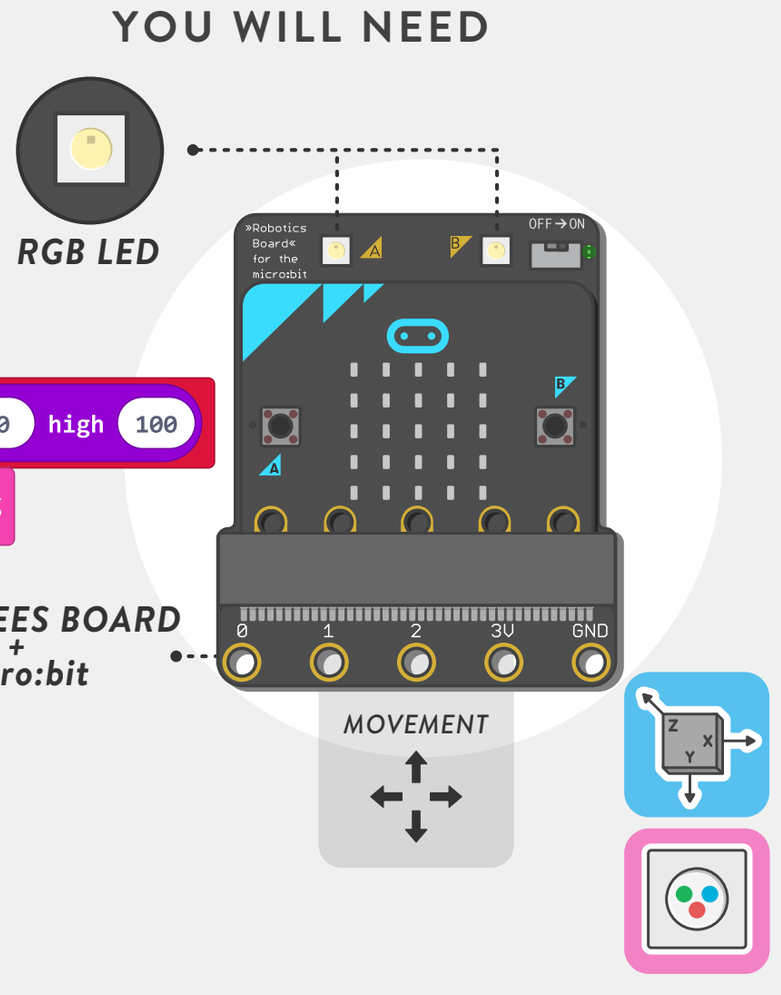
```
on button A pressed
  if toggle = 0 then
    set servo A position to 20 %
    set toggle to 1
  else
    set servo A position to 80 %
    set toggle to 0
```

YOU WILL NEED



TILT TO CHANGE COLOR

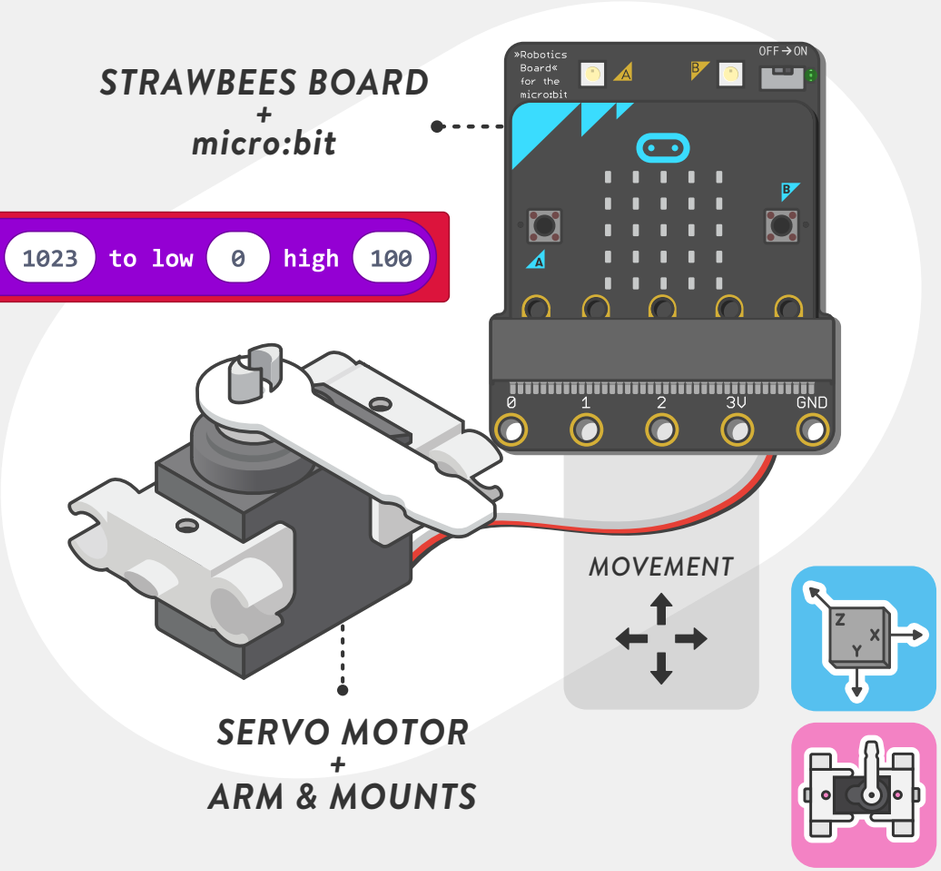
```
forever
    set movement to acceleration (mg) x
    set hue to map movement from low -1023 high 1023 to low 0 high 100
    set RGB LED A to hue hue % saturation 100 % brightness 100 %
```



TILT TO MOVE

```
forever
    set movement to acceleration (mg) x
    set position to map movement from low -1023 high 1023 to low 0 high 100
    set servo A position to position %
```

YOU WILL NEED



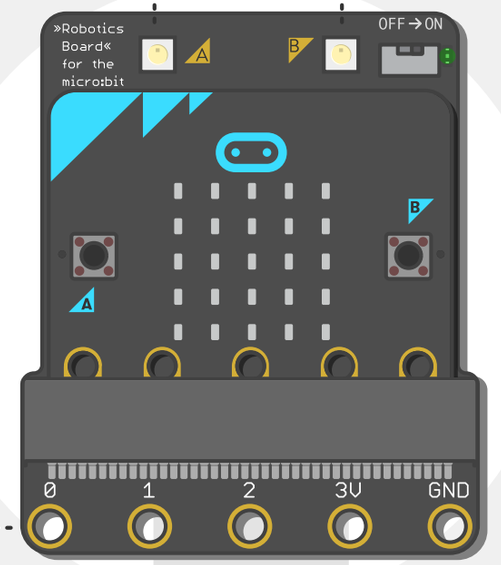
makecode.microbit.org

LIGHT ALARM

```
forever
    set RGB LED A to red 0 % green 0 % blue 0 %
    if acceleration (mg) strength > 1100 then
        set RGB LED A to red 100 % green 0 % blue 0 %
        pause (ms) 4000
```

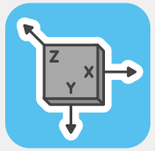
YOU WILL NEED

RGB LED

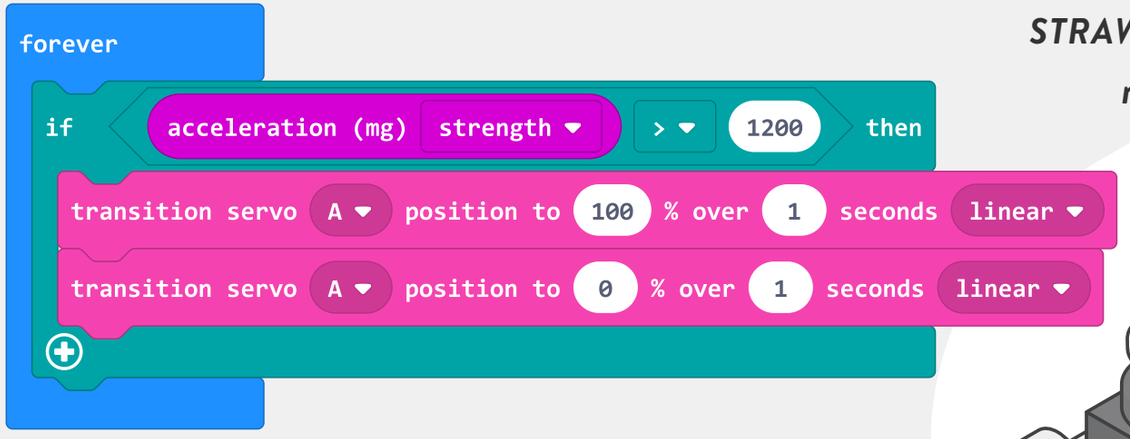


STRAWBEES BOARD
+
micro:bit

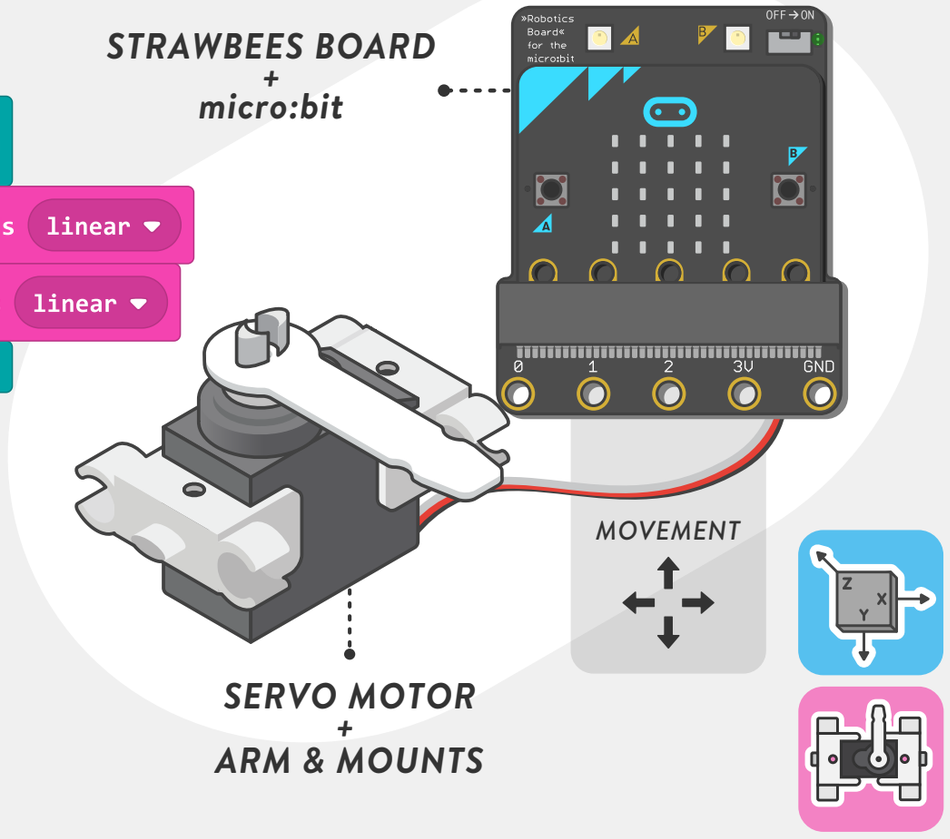
MOVEMENT



MOVE WHEN MOVED

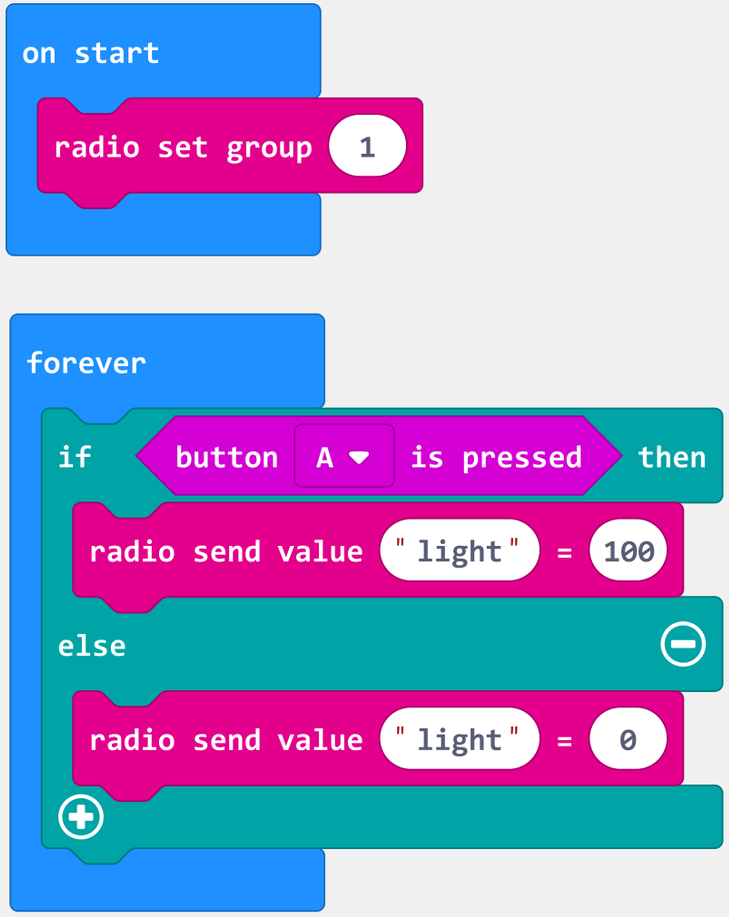


YOU WILL NEED



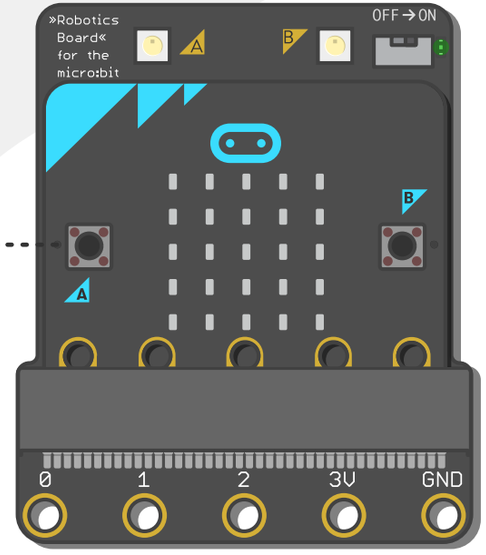
makecode.microbit.org

SEND/RECEIVE COLOR: SENDER

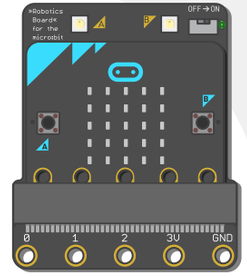


YOU WILL NEED

BUTTON



STRAWBEES BOARD
+
micro:bit

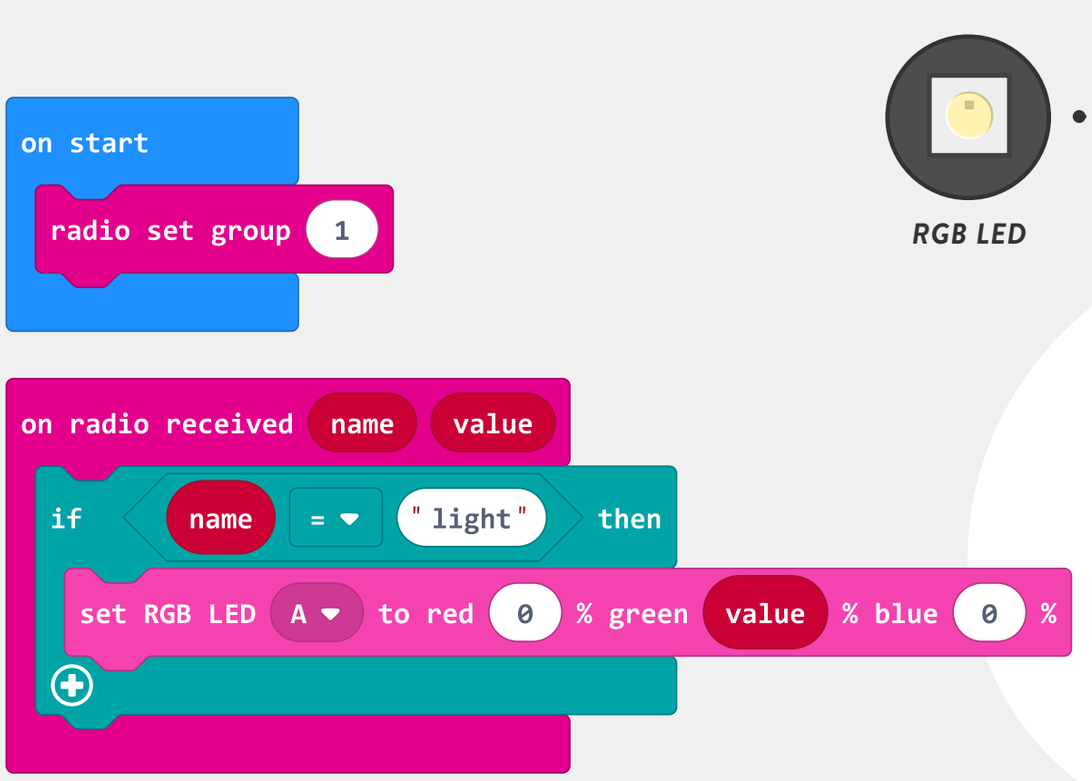


ANOTHER STRAWBEES BOARD
+
micro:bit
(FOR RECEIVING)

Check out the RECEIVER version of this card

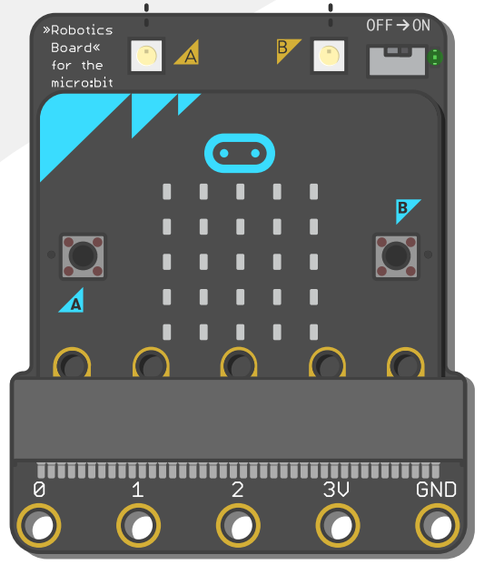
makecode.microbit.org

SEND/RECEIVE COLOR: RECEIVER

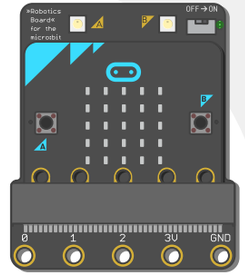


YOU WILL NEED

RGB LED



STRAWBEES BOARD
+
micro:bit



ANOTHER STRAWBEES BOARD
+
micro:bit
(FOR SENDING)

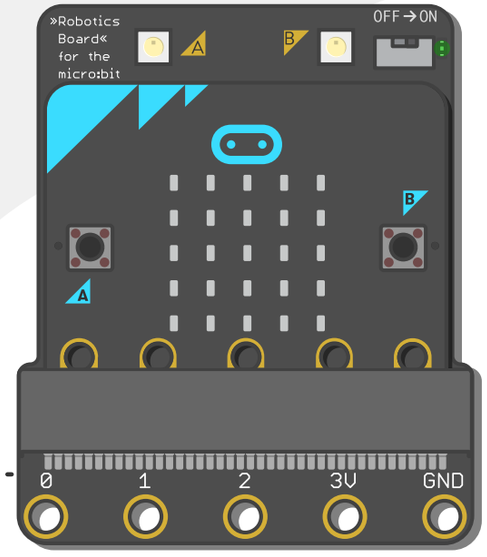
Check out the SENDER version of this card

makecode.microbit.org

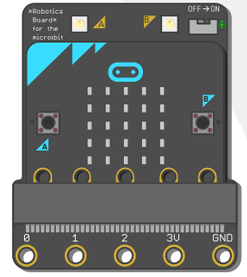
REMOTE CONTROL MOTOR: SENDER

```
on start
    radio set group 1

forever
    radio send number map acceleration (mg) y from low -1023 high 1023 to low 0 high 100
```

YOU WILL NEED



STRAWBEES BOARD + micro:bit



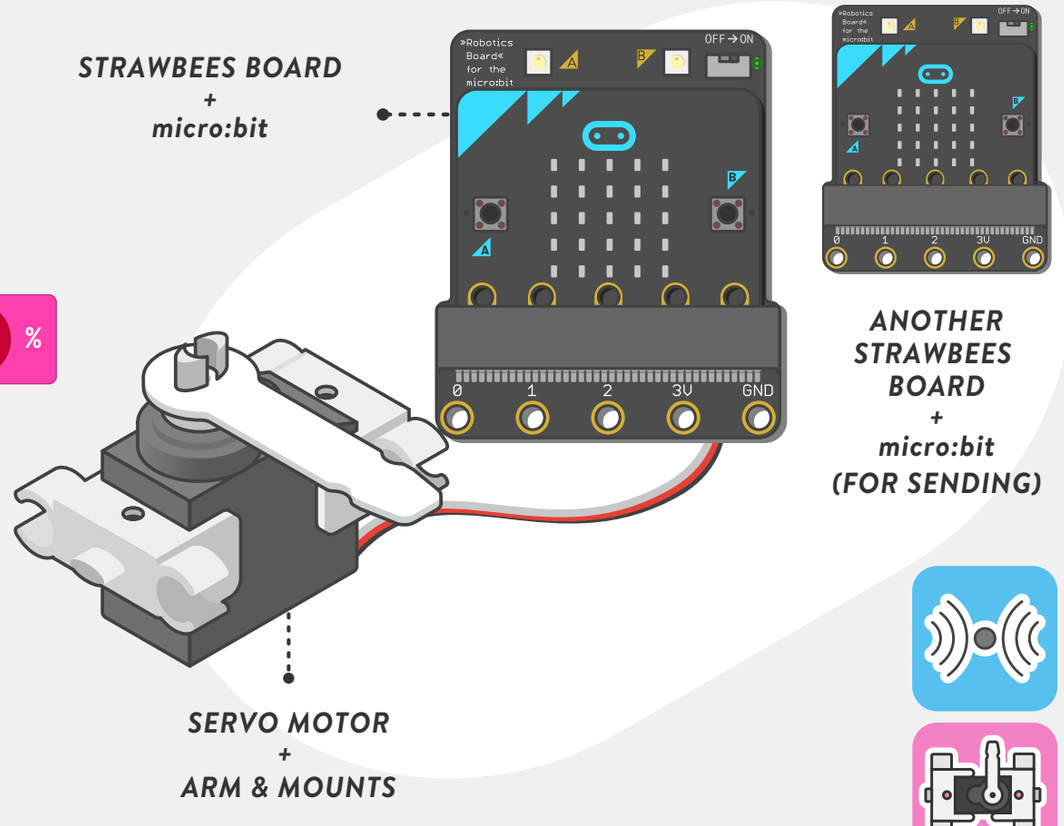
ANOTHER STRAWBEES BOARD + micro:bit (FOR RECEIVING)

Check out the RECEIVER version of this card

REMOTE CONTROL MOTOR: RECEIVER

```
on start
    radio set group 1

on radio received receivedNumber
    set servo A position to receivedNumber %
```

YOU WILL NEED



Check out the SENDER version of this card