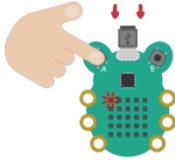


DOWNLOADING

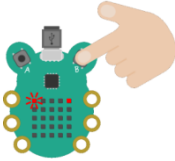
CodeBug™ www.codebug.org.uk

Step 1: remove CR2032 battery

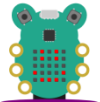
Step 2: press A and then insert micro USB cable (LED will blink)



Step 3: drag and drop your CBG file to the CodeBug "drive"

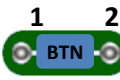


Step 4: press B to start your new program



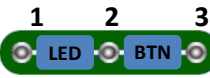
Snap Kit Parts

CodeBug™ www.kodeklix.com

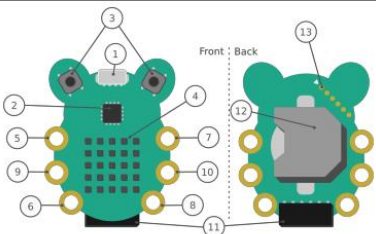
Single Button:  **Press to connect:**

LED - one direction 

LEDs – bi-directional 

LED + Button:  **Centre is GND**

Dual Button:  **Centre is GND**



- ① Micro USB socket for:
 - Programming
 - Tether mode
 - Power
- ② Microchip Technology Inc PIC 18F
- ③ 2 Push buttons for:
 - Users' program control
 - Mode selection
- ④ 5 by 5 Red LED matrix, individually addressable
- ⑤-⑧ Touch sensitive inputs/outputs croc-clips connectors
- ⑨ Power croc-clip connector
- ⑩ Ground croc-clip connector
- ⑪ Extension connector
- ⑫ Coin cell battery holder (CR2032)
- ⑬ PIC firmware programming connector


SEARCH: [kodeklix](http://kodeklix.com)

VIEW THIS PROJECT ON THE

CodeBug

WEBSITE



Tilt switch: tilting open and closes contacts 

Light Dependent Resistor:  **Centre is Signal**

Variable Resistor: Centre is Signal 

Thermistor: Centre is Signal 

SEARCH: [kodeklix](http://kodeklix.com)

VIEW THIS PROJECT ON THE

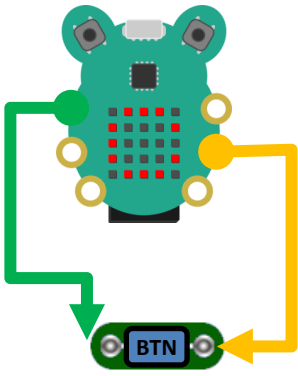
CodeBug

WEBSITE



KODEKLIX 001

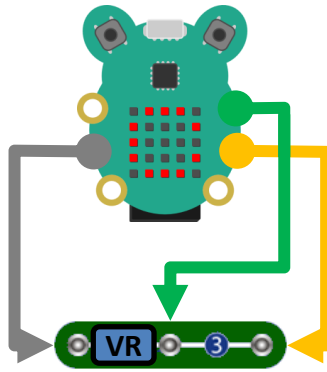
Single Button Input



www.kodeklix.com

KODEKLIX 002

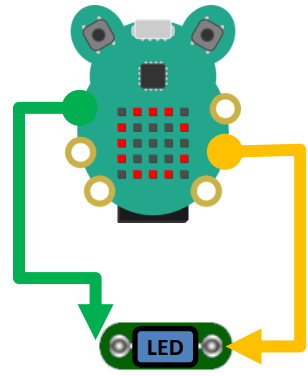
Variable Resistor Input



www.kodeklix.com

KODEKLIX 003

Single LED Output



www.kodeklix.com

Make sure the setup is correct!

Have a play! Change what character is displayed

Connect single button, 2-stud snap. Pressing the button grounds input 0 causing the code in the "if..do" statement to run.

Make sure the setup is correct!

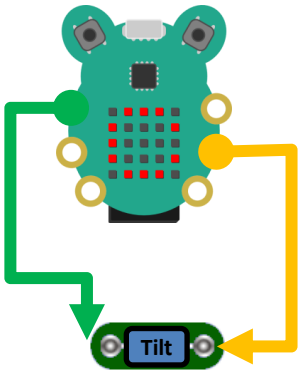
Connect variable resistor, 3-stud snap. Adjust the knob using a small screwdriver or your fingers. The voltage is divided and read at input 1 as a number between 0-255.

Make sure the setup is correct!

Connect the single LED, 2-stud snap. The code will make the LED flash on and off, with a pause of 1second in between.

KODEKLIX 004

Tilt Switch Input



www.kodeklix.com

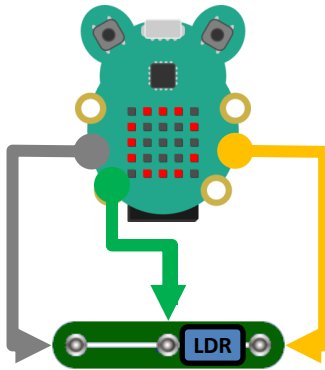
```
start
direction up
sleep after 3 minutes
leg 0 as digital input
leg 1 as analogue input
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
if leg 0 grounded
do
scroll sprite
string direction right
delay (ms) 150
scroll direction left
```

Make sure the setup is correct!

This tilt switch acts like a button in that the connected input leg is grounded when the tilt is detected.

KODEKLIX 005

Light Sensor Input



www.kodeklix.com

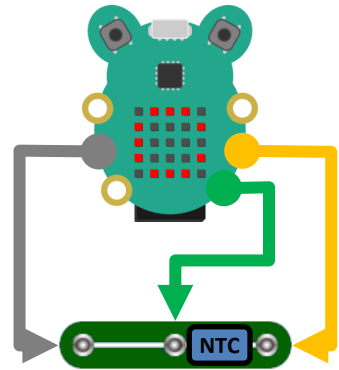
```
start
direction up
sleep after 3 minutes
leg 0 as digital input
leg 1 as analogue input
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
set LDR to read analogue leg/pin 2
scroll sprite
string direction right
delay (ms) 150
scroll direction left
scroll sprite
string direction right
delay (ms) 150
scroll direction left
```

Make sure the setup is correct!

The LDR changes resistance with the intensity of the light. The brighter the light, then lower the resistance. The CodeBug sees this as a value and outputs it.

KODEKLIX 006

Temperature Sensor



www.kodeklix.com

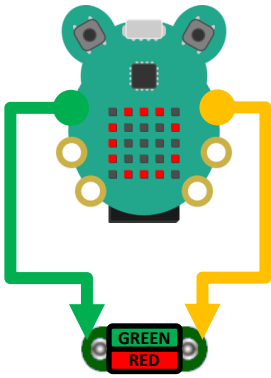
```
start
direction up
sleep after 3 minutes
leg 0 as digital input
leg 1 as analogue input
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
set NTC to read analogue leg/pin 3
scroll sprite
string direction right
delay (ms) 150
scroll direction left
scroll sprite
string direction right
delay (ms) 150
scroll direction left
```

Make sure the setup is correct!

The NTC changes resistance with temperature. The higher the temperature, the lower the resistance. The CodeBug sees this as a value and outputs it.

KODEKLIX 007

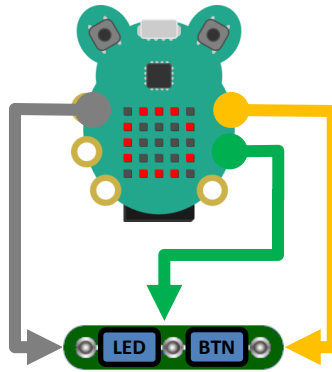
Dual LED Output



www.kodeklix.com

KODEKLIX 008

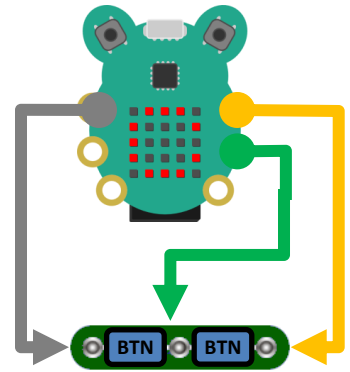
LED and Button Sensor



www.kodeklix.com

KODEKLIX 009

Dual Button Sensor



www.kodeklix.com

```
start
direction up
sleep after 3 minutes
leg 0 as digital output
leg 1 as analogue input
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
turn leg 0 on
pause for time (ms) 1000
turn leg 0 off
turn leg 1 on
pause for time (ms) 1000
```

Make sure the setup is correct!

Try to change the blink rate!

The two LEDs are operated in a push-pull manner. One output is high, whereas the other output is low. To change which LED is turned on, the outputs are toggled.

```
start
direction up
sleep after 3 minutes
leg 0 as digital input
leg 1 as digital output
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
if leg 0 grounded
do
turn leg 1 on
else
turn leg 1 off
```

Make sure the setup is correct!

This sensor combines both input and output. The LED will switch on, if the button is pressed.

```
start
direction up
sleep after 3 minutes
leg 0 as digital input
leg 1 as digital input
leg 2 as analogue input
leg 3 as analogue input
repeat while true
do
if leg 0 grounded
do
draw sprite get character sprite 0
at x 0
y 0
if leg 1 grounded
do
draw sprite get character sprite 1
at x 0
y 0
```

Make sure the setup is correct!

Each button connects to a separate input, with each displaying a unique message on the LED display.