Instructions:

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WARNING

This relay must NOT be used to switch high voltage AC. The maximum voltage for this product is 16V!

INTRODUCTION

The MonkMakes Relay for micro:bit is a solid-state (no moving parts) relay that allows an output of a micro:bit to turn things on and off.

A micro:bit can turn an LED on and off directly, but anything more powerful requires something like a relay or a transistor. Using a transistor to switch something on and off requires a shared ground connection with the micro:bit and a knowledge electronics that you or your students may not be ready for. The MonkMakes Relay for micro:bit is much easier to use, acting like a simple micro:bit controlled switch.

This relay can be used to switch low voltage devices such as light bulbs, a motor, a small heating element or even a string of 12V LED lighting. The voltage needs to be kept under 16V, but the relay will automatically protect itself against too much current.

- Solid-sate relay (up to 1 Amp continuous, 2A for short periods less than a minute)
- Love voltage (< 16A) DC or AC
- Active LED indicator
- Resettable 'polyfuse' to protect against over-current

CONNECTING YOUR MICRO:BIT

The Relay requires just two connections to the micro:bit. One to GND (ground) and one to whatever pin is to be used to control the relay's switching action.

When attaching the alligator clips to the micro:bit, make sure that the clips are perpendicular to the board so that they are not touching any of the neighbouring connectors on the micro:Bit edge connector.

Here's an example of how you could wire up a MonkMakes Relay for micro:bit to turn an old fashioned light bulb on and off.
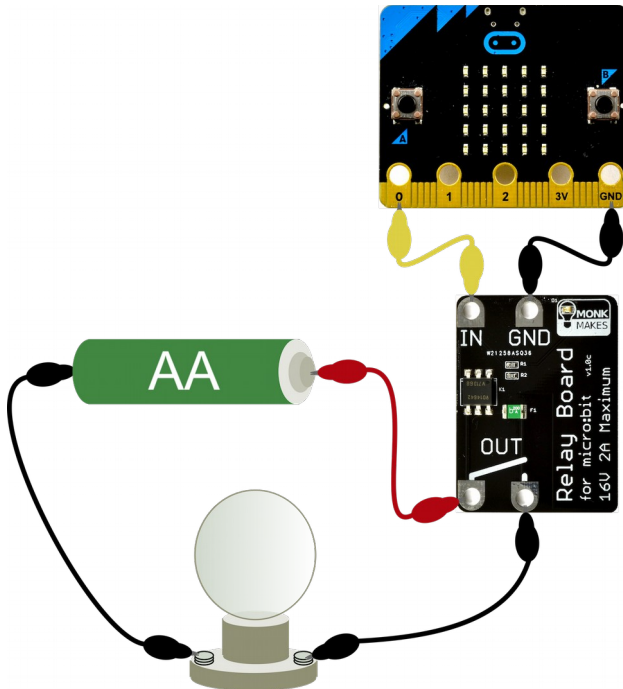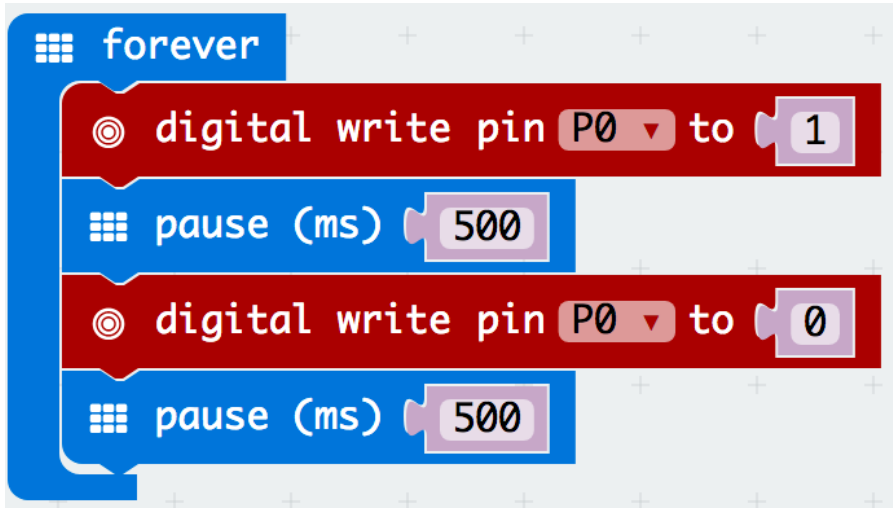
Switching Inductive Loads

If you plan to use your relay to switch inductive loads, such as solenoids or motors, then there is a risk that 'back EMF' voltage spikes may damage the Relay for micro:bit.

When driving inductive loads, a 'flyback' or 'kickback' diode across the terminals of the solenoid or motor, as shown below.
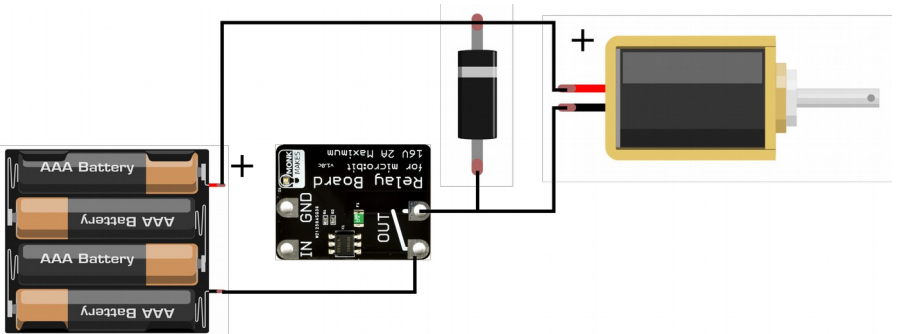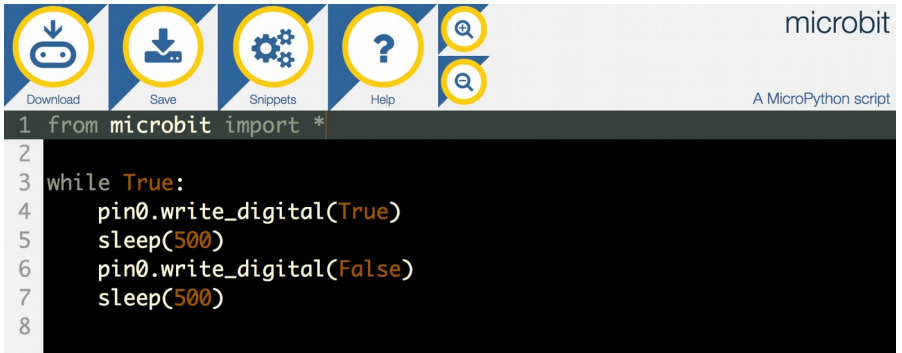
BLOCKS EXAMPLE

To control things with the Relay for micro:bit you need to turn the GPIO pin of the micro:bit using code like this. This example turns the relay on for half a second, off for half a second and then repeats.

```
forever
    digital write pin P0 ▾ to 1
    pause (ms) 500
    digital write pin P0 ▾ to 0
    pause (ms) 500
```

MICROPYTHON EXAMPLE

Here's how you would do the same thing in MicroPython.

```python
from microbit import *

while True:
    pin0.write_digital(True)
    sleep(500)
    pin0.write_digital(False)
    sleep(500)
```

SUPPORT

You can find the Product's information page here: https://monkmakes.com/mb_relay and if you need further support, please email support@monkmakes.com.

MONKMAKES

For more information on this kit, the product's home page is here:
https://monkmakes.com/mb_charger

As well as this kit, MonkMakes makes all sorts of kits and gadgets to help with your micro:bit and Raspberry Pi projects. Find out more, as well as where to buy here: https://monkmakes.com you can also follow MonkMakes on Twitter @monkmakes.