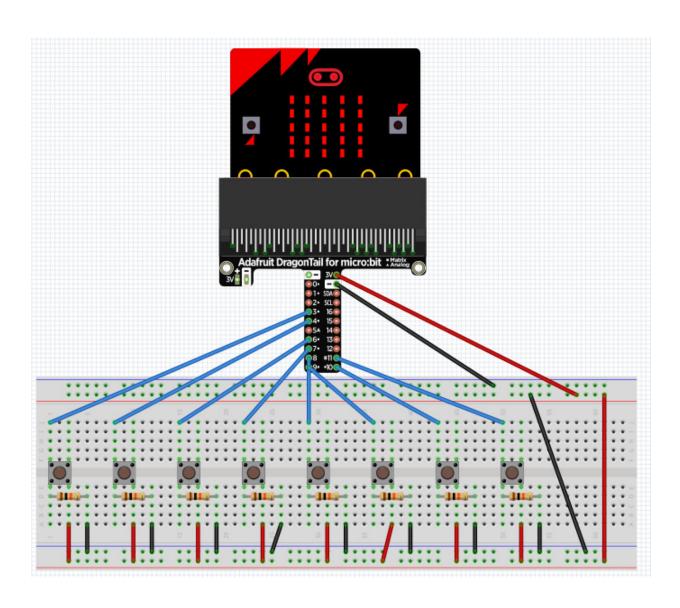
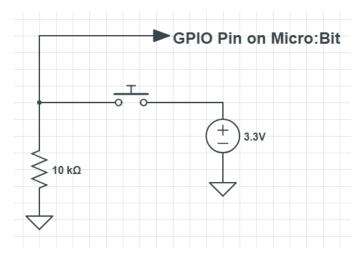
## **Building a Piano with Micro:Bit**

The Hook-Up



## **Theory**



must be pulled down to 0 V.

Pushbutton switches are connect as shown. One side of the switch is connected to 3.3 V on the Micro:Bit and the other side of the switch is connected to ground via a 10K  $\Omega$  resistor. When the switch is open, the GPIO (General Purpose Input Output) is at 0 V (logic 0). When the switch is pushed, the GPIO pin is at 3.3 V (logic 1). The Micro:Bit has 17 GPIO Pins. They are pin 0 to 16. Many of these pins are shared with other devices however a few are dedicated GPIO (pins 8 and 12). Pin 5 is shared with button A and is connected to 3.3 V so detect an external button push, it

## The Code

```
forever
                                          play tone Middle F for 1 ▼ beat
 set middleC ▼ to digital read pin P3 ▼
                                        (
      middleC ▼ = ▼ 1 then
                                              middleG ▼ to digital read pin P8 ▼
                                        set
 play tone Middle C for 1 ▼ beat
                                        if
                                                 middleG ▼
                                                             = 🔻 1
                                                                         then
 set middleD ▼ to digital read pin P4 ▼
                                          play tone (Middle G) for 1 ▼ beat
      middleD ▼ = ▼ 1 then ▼
                                        ①
 play tone Middle D for 1 ▼ beat
                                              middleA ▼ to digital read pin P9 ▼
 set middleE ▼ to digital read pin P6 ▼
                                        if
                                                 middleA ▼
                                                             = 🔻 1
                                                                           then
       middleE ▼ | = ▼ 1 | then
                                          play tone (Middle A) for 1 ▼ beat
  play tone Middle E for 1 ▼ beat
```

```
set middleB ▼ to digital read pin P10 ▼

if middleB ▼ = ▼ 1 then

play tone Middle B for 1 ▼ beat

•

set highC ▼ to digital read pin P11 ▼

if highC ▼ = ▼ 1 then

play tone High C for 1 ▼ beat

•
```