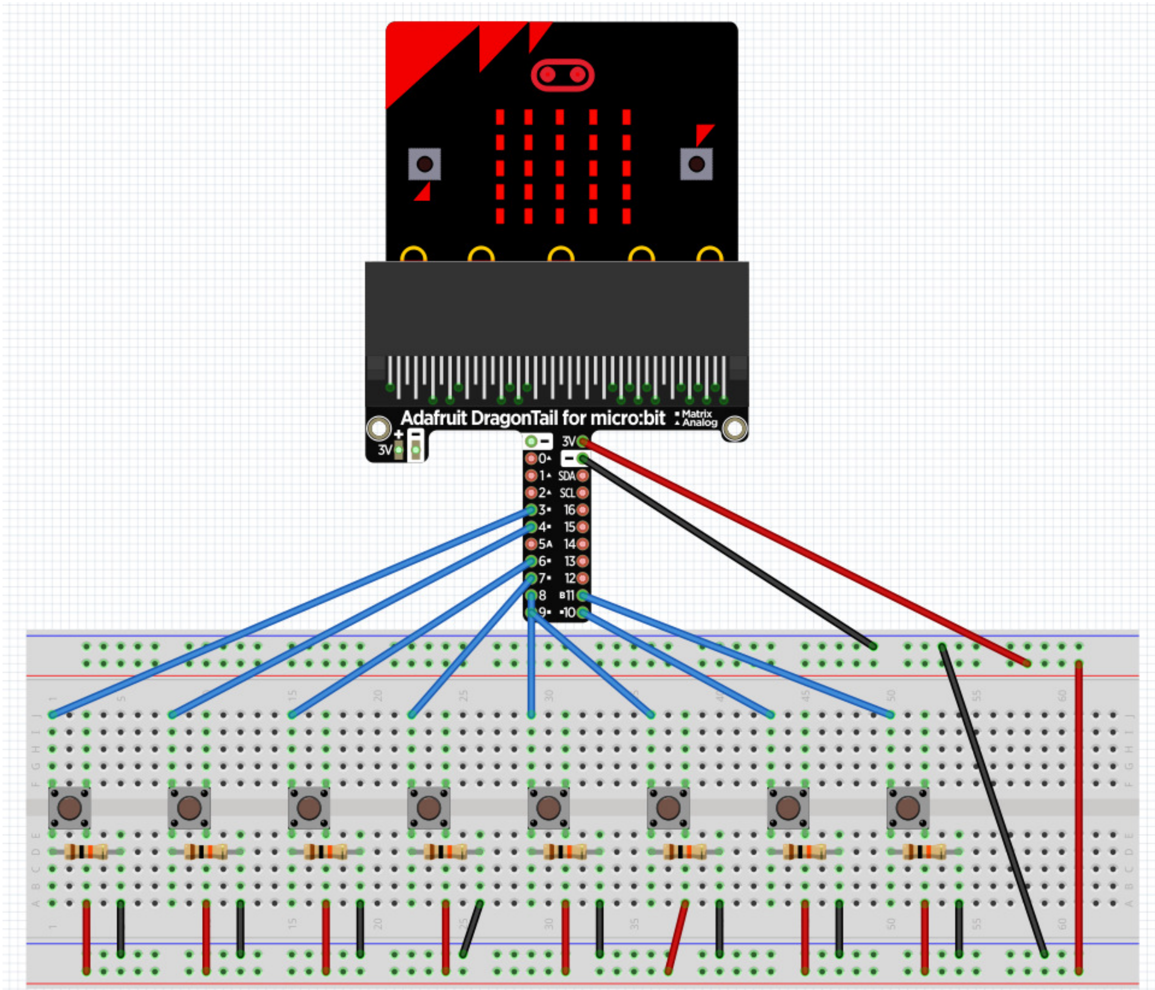
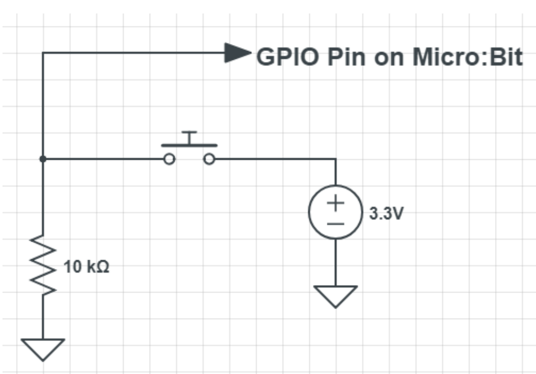
Building a Piano with Micro:Bit

The Hook-Up

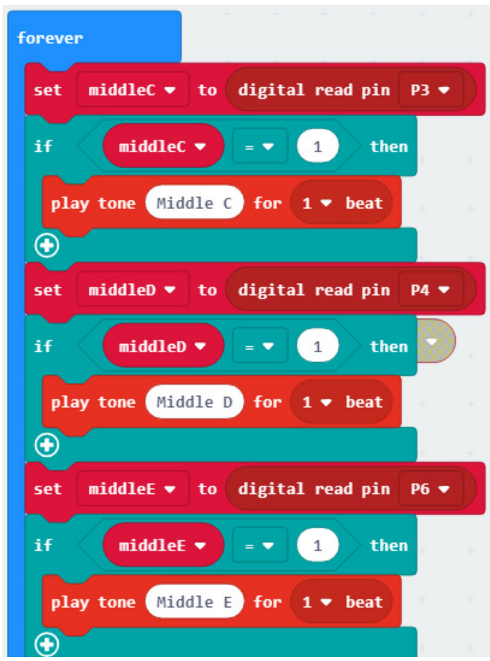


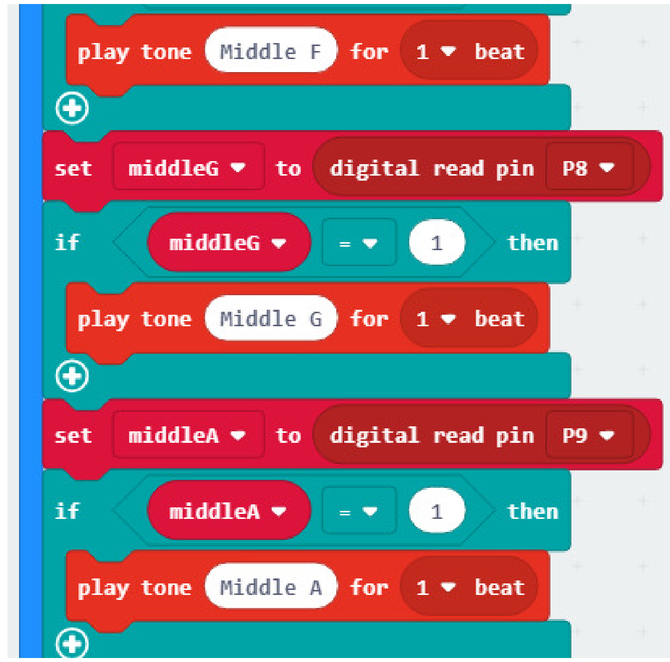
Theory

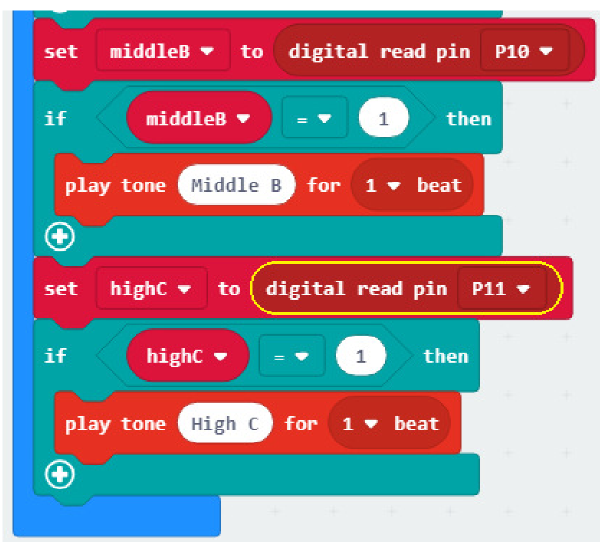


Pushbutton switches are connect as shown. One side of the switch is connected to 3.3 V on the Micro:Bit and the other side of the switch is connected to ground via a 10K Ω resistor. When the switch is open, the GPIO (General Purpose Input Output) is at 0 V (logic 0). When the switch is pushed, the GPIO 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 must be pulled down to 0 V

The Code


forever
set middleC to digital read pin P3
if middleC = 1 then
play tone Middle C for 1 beat
set middleD to digital read pin P4
if middleD = 1 then
play tone Middle D for 1 beat
set middleE to digital read pin P6
if middleE = 1 then
play tone Middle E for 1 beat


play tone Middle F for 1 beat
set middleG to digital read pin P8
if middleG = 1 then
play tone Middle G for 1 beat
set middleA to digital read pin P9
if middleA = 1 then
play tone Middle A 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