



Hack your bedroom – Interactive piano wall art

Transform a blank canvas into an interactive piano for your wall or desk using a BBC micro:bit and some conductive paint.

Everything is housed in the back of the box canvas, allowing you to easily mount it on your wall.

Step 1: Gather the materials

Components

- 1 x BBC micro:bit
- 1 x BBC micro:bit breakout board
- 1 x box canvas 10" by 10"
- 1 x breadboard
- 1 x buzzer
- 7 x 22M ohm resistors
- 8 x male to female jumper cables
- 14 x male to male jumper cables
- 50cm six core wire
- 2AAA battery holder
- 2 x AAA batteries

Equipment

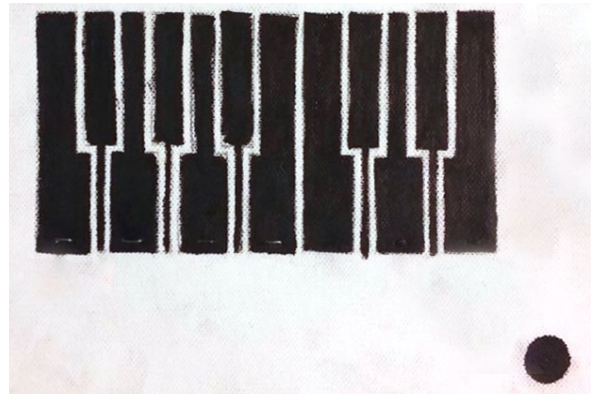
- Tub of conductive paint
- Small paintbrush
- Sewing needle

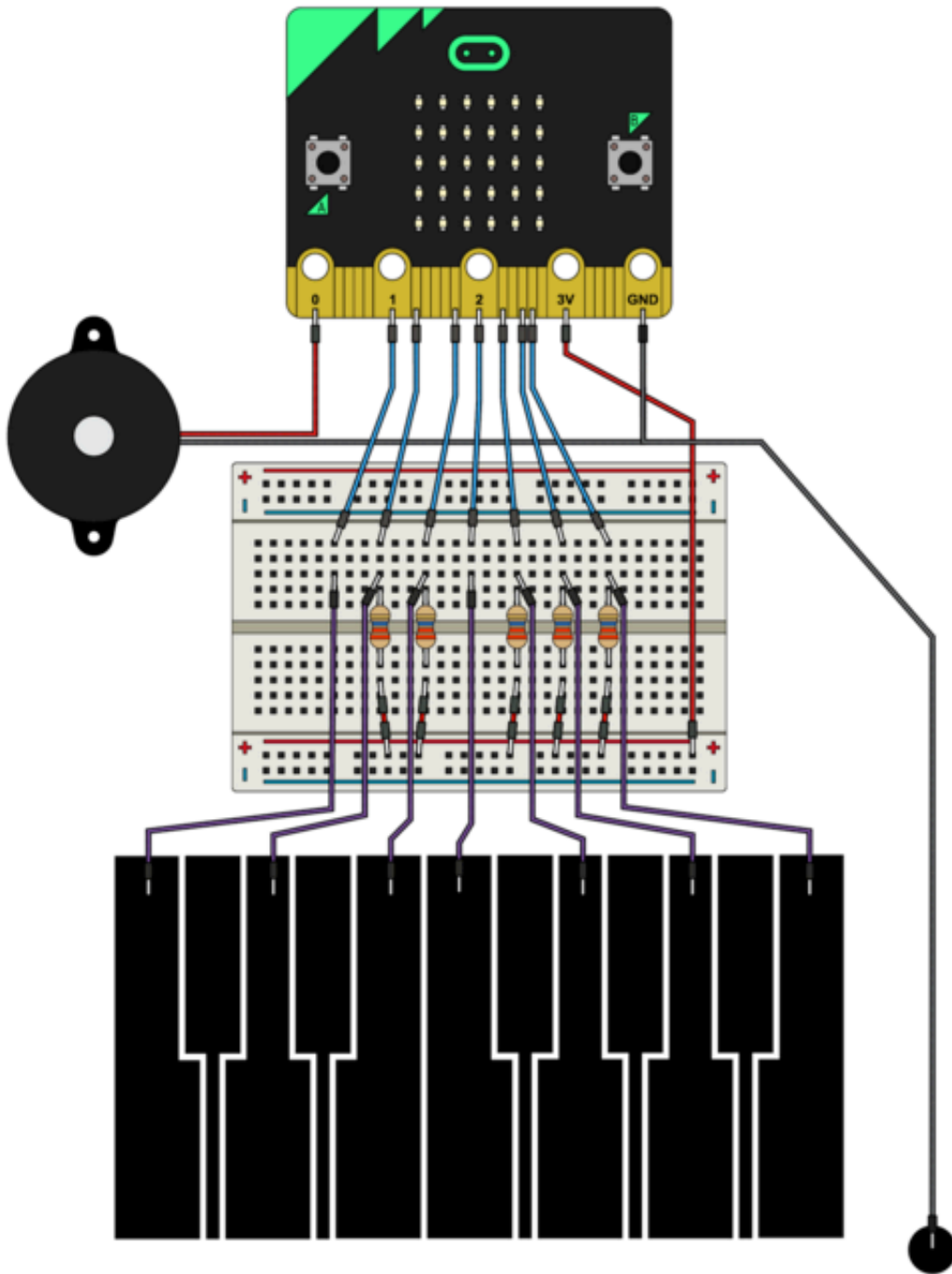
Step 2: Create your piano

Using your paintbrush and conductive paint, draw your keys onto the canvas. Don't worry if they turn out a little messy, conductive paint can be a little hard to work with.

Step 3: Create the circuit

Wire up your BBC micro:bit using the diagram below.





Because we need more than three pins for this project, we need to use the other pins on the edge connector, using the breakout board.

We will be using the pin numbers 0, 1, 2, 8, 12, 13, 15, 16, 3V and GND for this project.

To attach to the conductive pads, use a needle to thread your wire through each of the pads.

You can use a bit of conductive paint to secure the joints.

Step 4: Download the code

Connect the BBC micro:bit to your computer using the USB cable.

Download the hex file from our Live Lessons website and drag it onto your BBC micro:bit.

If you're familiar with Python, you can also download the Python file and edit it to change the notes on your 'piano'.

Test and play

Disconnect the BBC micro:bit from your computer and plug in the battery pack (with the batteries inside).

Hold one finger on the ground circle and touch the notes using your other hand. The notes should now play when you touch the keys.