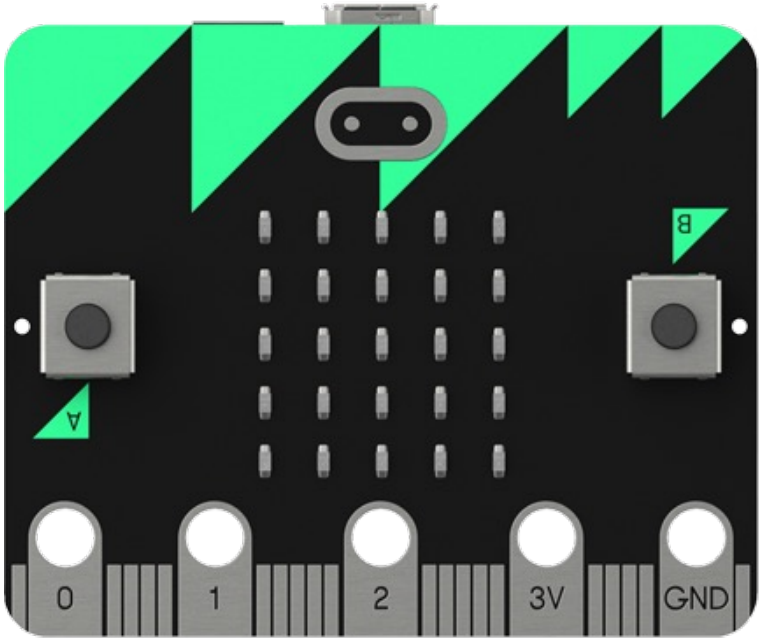
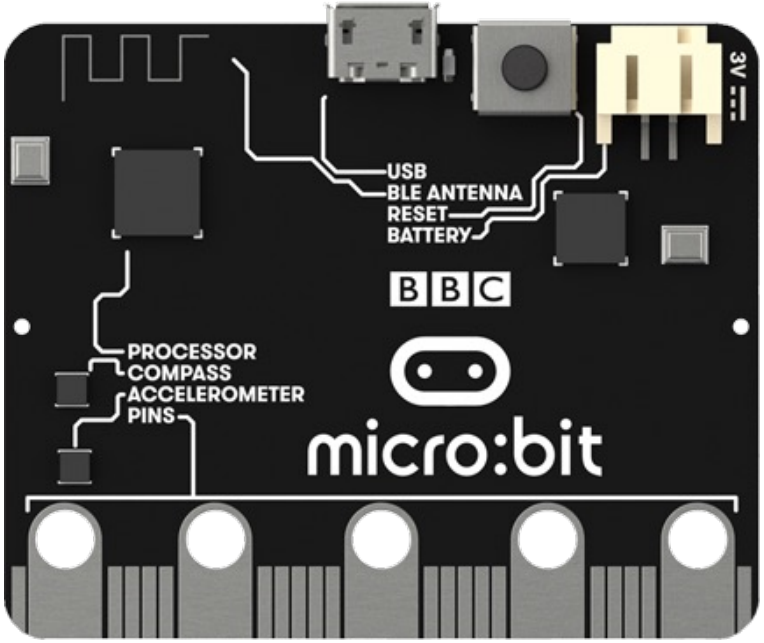
BBC Micro:bit





BBC

micro:bit

Lesson 5

Music

Example

Here is an example program that makes the micro:bit play music. Try it for yourself:

```
from microbit import *
import music

music.play(music.NYAN)
```

This is a list of all the built-in melodies, try some of them out.

```
music.DADADADUM
music.ENTERTAINER
music.PRELUDE
music.ODE
music.NYAN
music.RINGTONE
music.FUNK
music.BLUES
music.BIRTHDAY
music.WEDDING
music.FUNERAL
music.PUNCHLINE
music.PYTHON
music.BADDY
music.CHASE
music.BA_DING
music.WAWAWAWAA
music.JUMP_UP
music.JUMP_DOWN
music.POWER_UP
music.POWER_DOWN
```

Activity 5.1

Creature a program that makes the micro:bit play different melodies when buttons A and B are pressed. Use this program for displaying different images as a starting point:

```
from microbit import *

while True:
    if button_a.is_pressed():
        display.show(Image.YES)
    elif button_b.is_pressed():
        display.show(Image.NO)
```

Place a screenshot of your code here.

Writing Your Own Melodies

You can also write your own melodies for the micro:bit to play.

Each note has a name like C or C#, an octave (how high or low the note should be played) and a duration. For example “A1:4” refers to note A in octave 4 played for a duration of 4.

Notes can be placed in a list to create a melody as shown in the example below:

```
from microbit import *
import music

tune = ["C4:4", "D4:4", "E4:4", "C4:4", "C4:4", "D4:4", "E4:4", "C4:4",
        "E4:4", "F4:4", "G4:8", "E4:4", "F4:4", "G4:8"]

music.play(tune)
```

Try it for yourself.

Activity 5.2

Here are the notes that make up the melody for Twinkle Twinkle Little Star. Create a program to play the melody on the micro:bit. Use 4 as the octave and 4 as the duration of each note. (The last note of each line should be twice as long as the others. Can you work out how to do that?)

C C G G A A G
F F E E D D C
G G F F E E D
G G F F E E D
C C G G A A G
F F E E D D C

Place a screenshot of your code here.

Activity 5.3

There are only three unique sets of notes in the Twinkle Twinkle Little Star melody. Make your program more efficient by creating a separate list for each unique set of notes and playing each list when needed.

C C G G A A G
F F E E D D C
G G F F E E D
G G F F E E D
C C G G A A G
F F E E D D C

Place a screenshot of your code here.

Accelerometer

You can make use of the accelerometer to play random notes as the micro:bit moves.

This program uses the reading from the y axis as the pitch. Try it for yourself.

```
from microbit import *
import music

while True:
    music.pitch(accelerometer.get_y(), 10)
```

Extension

Find the notes for another song on the internet and create a program to play it.

Place a screenshot of your code here.