

## Music

### Learning goals

In this lesson, we mainly learn how to control buzzer on the Super:bit expansion board to play music.

### Code

```
1 from microbit import *
2 import music
3
4
5 def Merry_Christmas():
6     tune = ["C4:4", "D4:4", "E4:4", "C4:4", "C4:4", "D4:4", "E4:4", "C4:4",
7             "E4:4", "F4:4", "G4:8", "E4:4", "F4:4", "G4:8"]
8     music.play(tune)
9
10 display.show(Image.HAPPY)
11 Merry_Christmas()
12 sleep(2000)
13 music.play(music.ODE)
14
```

Importing the music library, and calling the built-in music.ODE melody from the library, the following is a complete list of melody:

- 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

In addition to the above melody list, you can create a melody by making a note list. For example, G4: 2 in the list means that the G4 tone is played at a beat of 2 and C4: 4 means that the C4 tone is played at a beat of 4.

Followed by the same analogy.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>C4</b>	<b>D4</b>	<b>E4</b>	<b>F4</b>	<b>G4</b>

How to make the beat?

Just like the above picture, if the number is underlined, we set its beat to 2; if there is a horizontal bar after the number, we set its beat to 8; if it is a single number, the beat is 4. If there is no pause in the song, we can also put an E1 tone in the middle, and the phrase of 4 is used as a pause.

### Assembly steps

Please refer to the **1.Omnibit installation steps** in the **1.Assembly steps** folder for building blocks assembly steps.

### About wiring

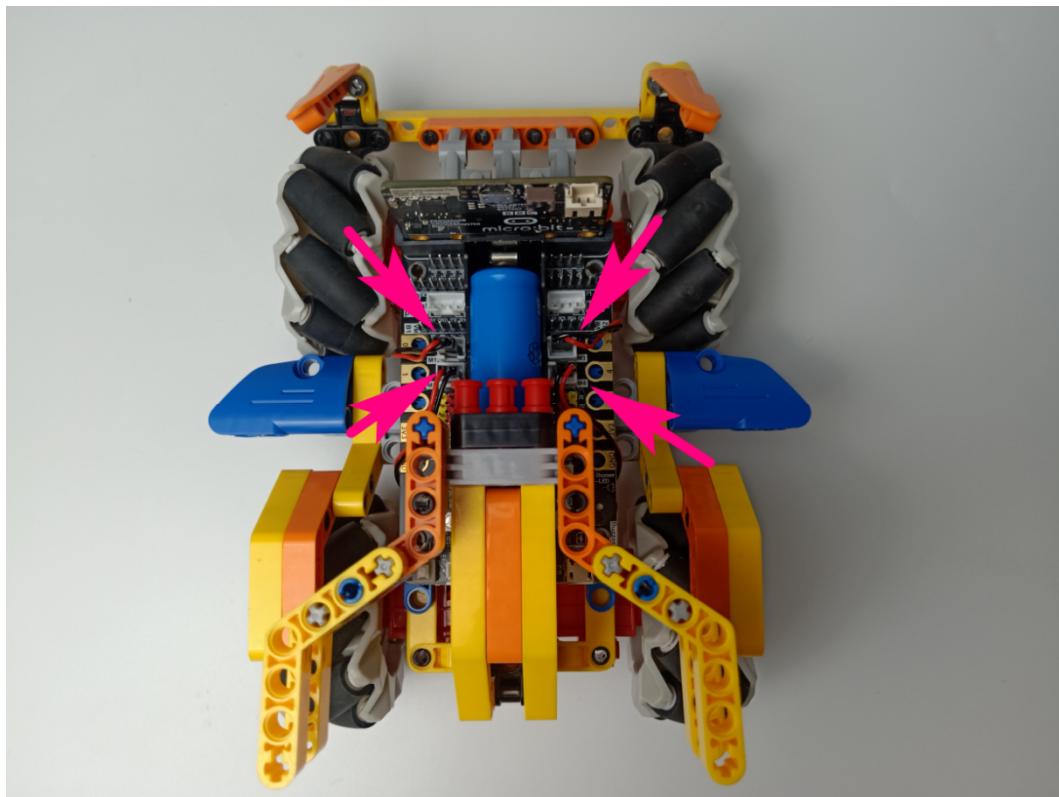
The left front motor is connected to the M1 interface of the Super:bit expansion board. The black line is on the battery side;

The left rear motor is connected to the M2 interface of the Super:bit expansion board, The black line is on the battery side;

The right front motor is connected to the M3 interface of the Super:bit expansion board, The black line is on the battery side;

The right rear motor is connected to the M4 interface of the Super:bit expansion board, The black line is on the battery side.

As shown below.



### Programming and downloading

1. You should open the Mu software, and enter the code in the edit window, , as shown below.

**Note! All English and symbols should be entered in English, and the last line must be a space.**

```

Mode New Load Save Flash Files REPL Plotter Zoom-in Zoom-out Theme Check
Voice control light.py ✘
6
7 np = neopixel.NeoPixel(pin12, 2)
8 np.clear()
9 tinybit.car_HeadRGB(0, 0, 0)
10 display.show(Image.HAPPY)
11
12 item = 0

```

2. You can click the “Check” button to check if our code has an error. If a line appears with a cursor or an underscore, the program indicating this line is wrong.

```

6
7 np = neopixel.NeoPixel(pin12, 2)
8 np.clear()
9 tinybit.car_HeadRGB(0, 0, 0)
10 display.show(Image.HAPPY)
11
12 item = 0
13
14
15 while True:
16     voice = tinybit.getVoicedata()
17     if voice > 100:

```

3.Click “REPL” button,check whether the tinybit library has been downloaded.  
If not, please refer to the [preparation before class]---> [Python programming]

```

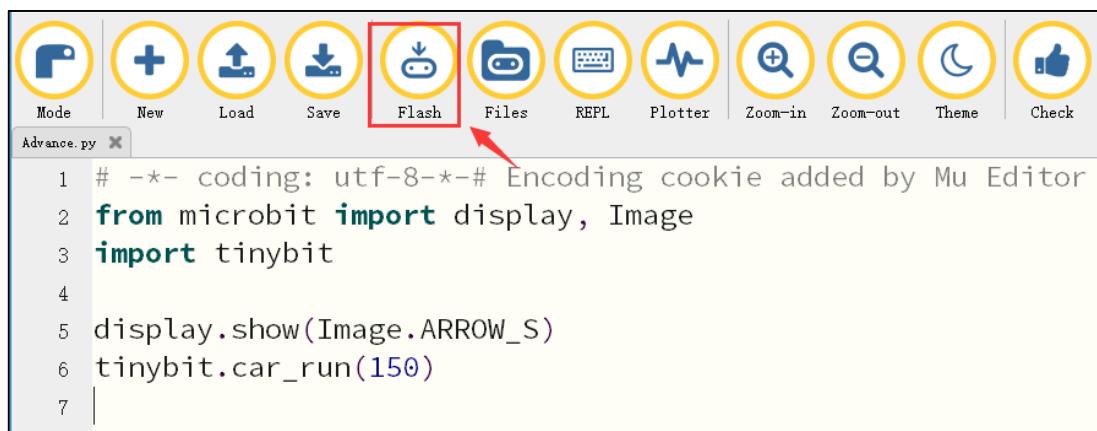
# Write your code here :-)

BBC micro:bit REPL

MicroPython for Tinybit V1.1 Modified by Yahboom Team
Type "help()" for more information.
>>>
>>> |

```

4.Click the “Flash” button to download the program to micro:bit board.



If the program is wrong or the experimental phenomenon is wrong after downloading, please confirm whether you have downloaded the Superbit library hex file we provided to the micro: bit board.

For the specific method of adding library files, please refer to 【1.Preparation before class】---【Python programming】

### Experimental phenomena

After the program is successfully downloaded, micro:bit dot matrix will display “smile” pattern and we can hear that buzzer will play music <Merry Christmas>. After 2 seconds, buzzer will play <ODE>.