

## 5. Pedometer

### 1. Learning goals

In this lesson, we will learn to use micro:bit and Wrist:bit make a pedometer.

### 2. Working principle

The micro:bit comes with an accelerometer, which can detect data changes in three directions of x,y,z. In this course, we use the data changes in the Y axis direction to realize the function of the pedometer.

In this course, we mainly use the building blocks shown in the figure below.



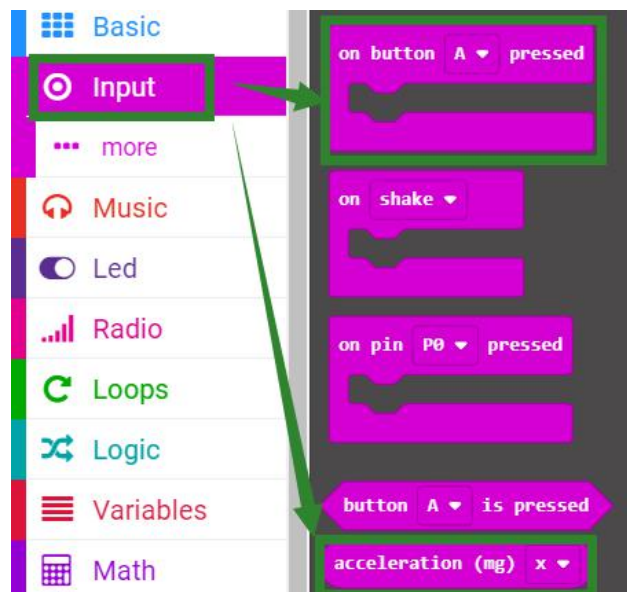
### 3. Programming method

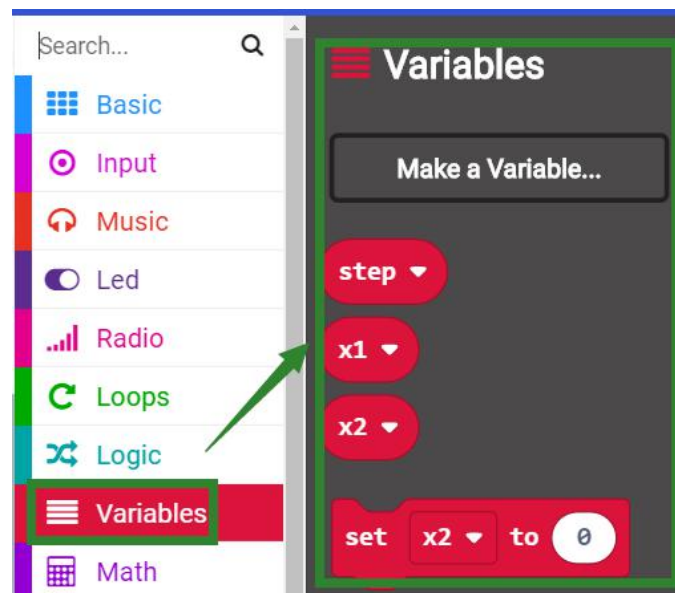
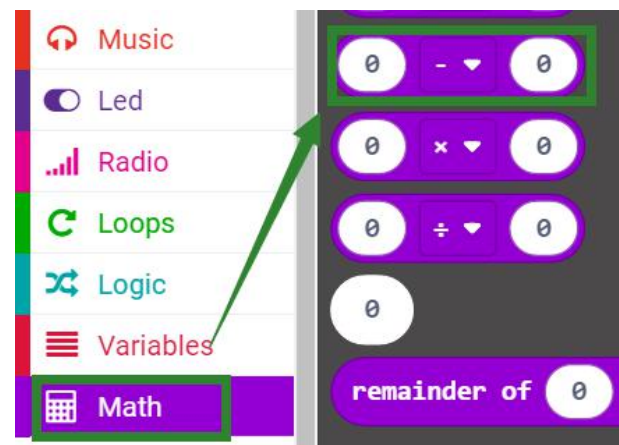
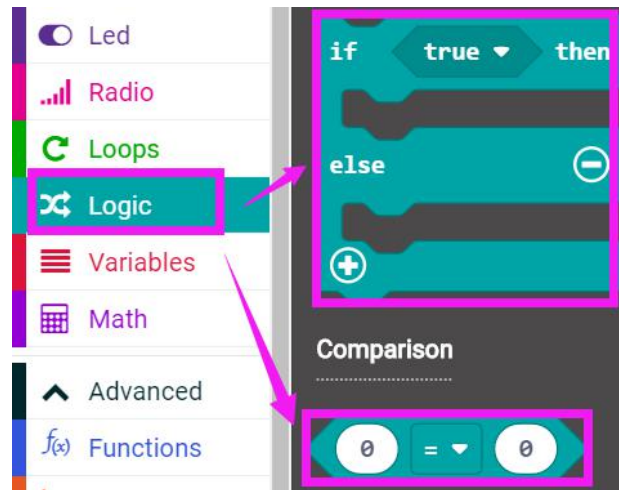
**Mode 1 online programming:** First, we need to connect the micro:bit to the computer by USB cable. The computer will pop up a USB flash drive and click on the URL in the USB flash drive: <http://microbit.org/> to enter the programming interface to program.

**Mode 2 offline programming:** We need to open the offline programming software. After the installation is complete, enter the programming interface, click 【New Project】 , you can program.

### 4. Looking for blocks

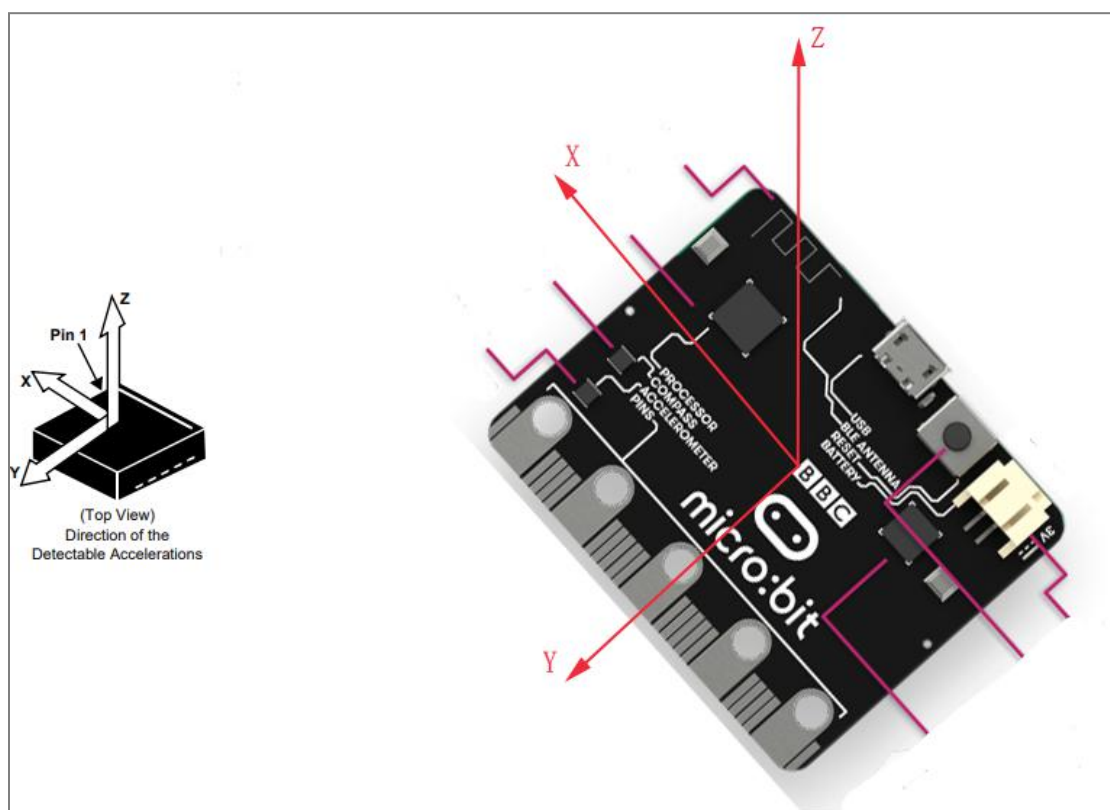
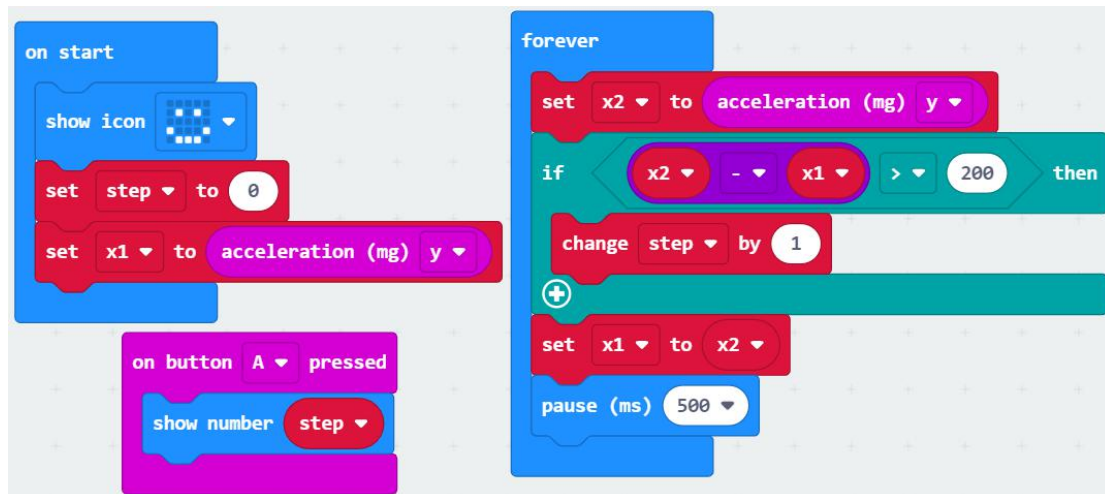
The following is the location of the building blocks required for this programming.





## 5. Combine block

The summary program is shown below.



According to the wear of the watch, the direction of the Y axis is mainly affected by the movement of the arm, so the number of steps is calculated by testing the acceleration change of the Y axis.

## 5. Experimental phenomena

After the program is successfully downloaded.

Micro:bit dot matrix will display smile pattern, wear it while walking or swinging the arm, press the button A will display the current latest steps.