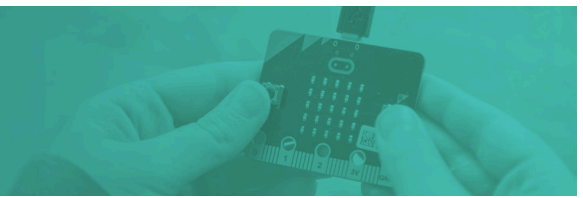


TECH IN THE LAB

Example solutions



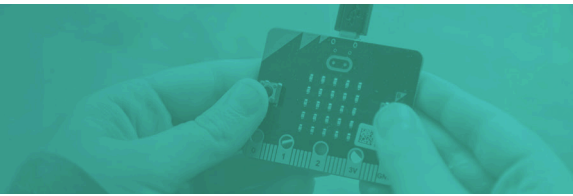
Well done for having a go at completing the tasks! There are many different solutions to the two different tasks, here are just a few examples.

There is never a single correct solution to any coding challenge. If you are alerting the scientist, that is a successful outcome. Below are some possible solutions to the tasks you have gone through.

FRIDGE ALERT

There are many ways to alert the scientist that the fridge door has been left open. The code below will make a noise when the light level around the micro:bit is greater than the reading 128. Please note that your light level reading may be a different number! Pressing button A will stop the noise.

```
forever
  if light level > 128 then
    play melody [color bar] at tempo 500 (bpm)
on button A pressed
  stop melody background
```



FLAT FLASK

There are two possible ways to make the micro:bit sound on tilt. Version 1 uses the tilt gesture, and version 2 (more advanced) uses the acceleration input. This version required the micro:bit to be tilted over 90 degrees.

Version 1

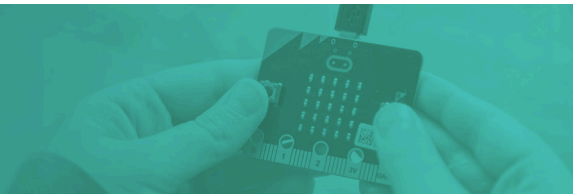
This version makes a flat sound no matter how steep the tilt is.

a)

```
on tilt right ▼  
  show string "R"  
  
on tilt left ▼  
  show string "L"  
  
on screen up ▼  
  show icon [grid icon]
```

b)

```
forever  
  if is tilt right ▼ gesture then  
    show string "R"  
  else if is tilt left ▼ gesture then  
    show string "L"  
  else  
    show icon [grid icon]
```



Version 2

This version makes a varying sound depending on how steep the tilt is.

Acceleration (the amount of tilt) ranges from -1024 (when tilted left), to +1024 (when tilted right). The sound tone (measured in hertz) can only be a positive number, so when using the acceleration, the variable acceleration value requires + 1024, so a sound is played when tilted both left and right.

```
forever
  if acceleration (mg) x > 200 then
    play tone acceleration (mg) x + 1024 for 1 beat
  else if acceleration (mg) x < -200 then
    play tone acceleration (mg) x + 1024 for 1 beat
  else
    stop melody all
```