

# Investigating the world around us

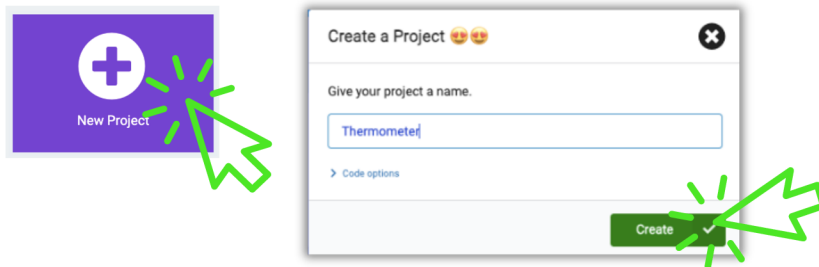
Connect the micro:bit to your computer.

In this project we are using the micro:bit's built in temperature sensor, microphone and light sensor. The thermometer is in the micro:bit's processor or CPU (central processing unit) to measure how hot or cold it is. The sound sensor is the microphone and the LEDs are used as light sensors

Let's get coding!

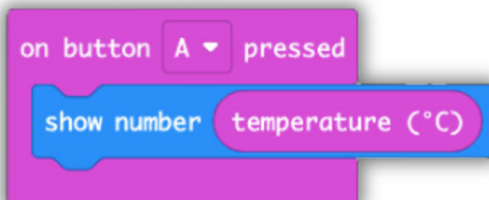
<https://makecode.microbit.org/>

Click on 'New Project' and give your project a name.

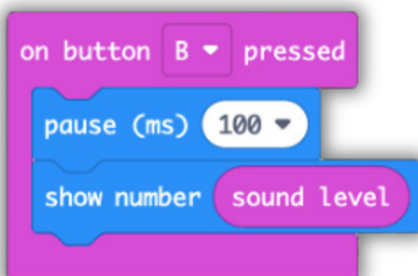


Processor / CPU

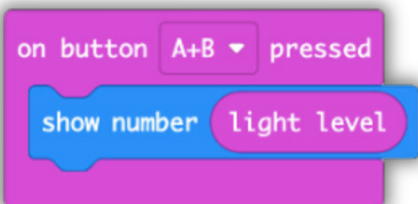
Add the following code:



When you press button A, the temperature will show on the LED display.



When you press button B, the sound level will display. The 'pause' block ensures that the results are not skewed by the sound made by clicking the button.



When you press button A and B together, the micro:bit will display the light level.

Connect your micro:bit to the computer using the USB cable and click 'download'. Test it out.

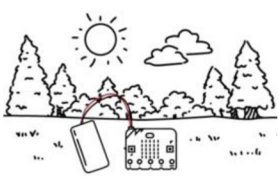

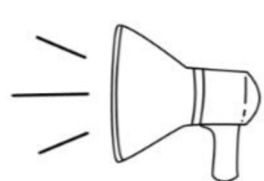
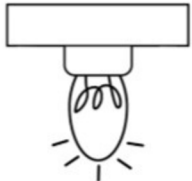
Decide on your locations, then, attach your battery pack and take your micro:bit outside!

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## DATA RECORDING SHEET

Complete the following table using your micro:bit to collect data from different locations.

			
LOCATION / TIME	TEMPERATURE (BUTTON A)	SOUND LEVEL (BUTTON B)	LIGHT LEVEL (BUTTONS A & B)

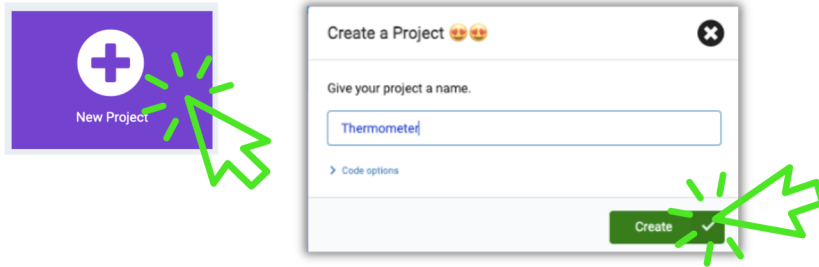
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## Level up - thermometer

Here is a more advanced thermometer program that will display a bar graph and also give you instructions for what to do in different temperature conditions!

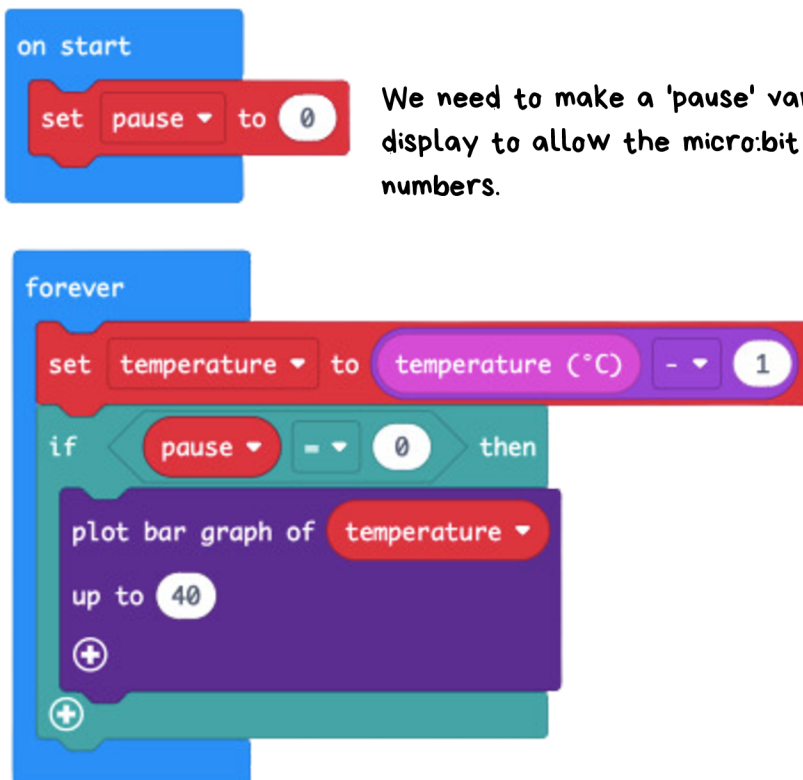
<https://makecode.microbit.org/>

Start a new project and give it a name.



If you have a thermometer, take a reading and compare it to the reading you get from your micro:bit. The longer your micro:bit has been running, the hotter it will be. Mine was 1° higher than room temperature so I added a maths block to subtract 1° to give a more accurate reading.

Add the following code:



We need to make a 'pause' variable so that we can pause the graph display to allow the micro:bit to tell us what the temperature is in numbers.

The processor's temperature is a fairly good approximation of the temperature around you in °C (Celsius) but it might get a bit warmer after it's been used for a few hours!

Continues on the next page...

