




# 1 - Collecting Data

Added libraries: Libraries + Basic Sensors Radio

Scientific discoveries involve analyzing data, so try collecting some. Open  and right-click on the graph to clear it.

Press button A to record data and B to stop.

Graph
clear graph
export data to CSV file
import data from CSV file

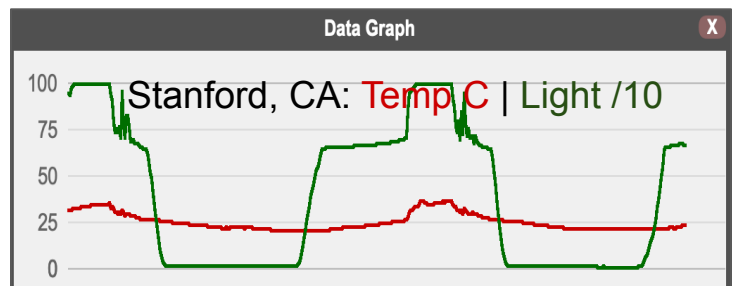
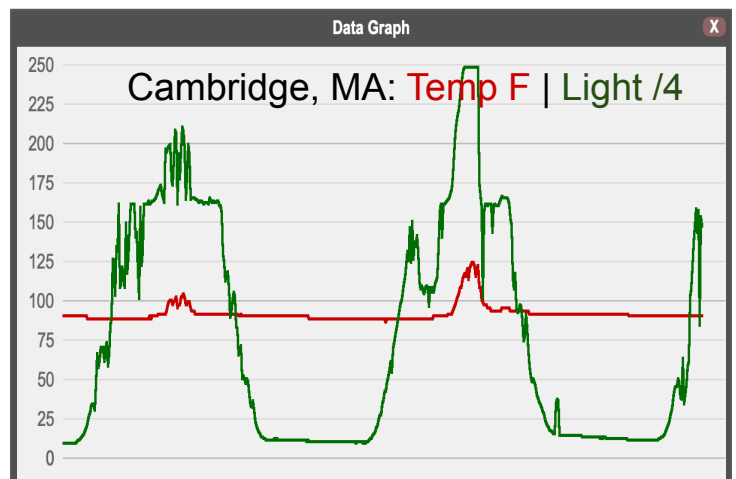
```

when button A pressed
  comment collect data until B pressed
  set user LED on
  forever
    graph temperature (°C) light level
    wait 1000 sample-seconds milliseconds
  end
when started
  set sample-seconds to 1
when button B pressed
  set user LED off
  stop other tasks
  
```

Right-click to save the data to a file.

Graph
clear graph
export data to CSV file
import data from CSV file

Challenge: Place your micro:bit near a window and record data for a few hours or until the next day (graphs at right recorded every 6 min for >2 days). Export the data to a file so you can analyze it further. What were the min and max values? Do you understand the changes?





# 2 - Remotely Logging Data

To log data from a remote micro:bit, partner with someone else. While the remote micro:bit transmits data, the receiver remains connected to MicroBlocks on a computer so it can graph and save the data.

Remote: press A to transmit tilt-x, B to transmit tilt-y, and A+B to stop.

```

when button A pressed
  stop other tasks
  set user LED
  radio send string tilt-x
  forever
    radio send number tilt x
    wait wait millisecs

when button B pressed
  stop other tasks
  set user LED
  radio send string tilt-y
  forever
    radio send number tilt y
    wait wait millisecs

when started
  comment msec between samples
  set wait to 50

when button A+B pressed
  stop other tasks
  radio send string end
  set user LED

```

Receiver: the “say” block will show the type of data being received.

The receiver code consists of the following blocks:

- when radio message received?
- set user LED
- if radio last string = end
- set user LED
- else if
- graph radio last number
- say radio last string

The Data Graph window shows a red sine wave on a grid. The y-axis ranges from -75 to 75. A callout bubble labeled 'tilt-x' points to the graph.

Challenge: Toss up then catch one micro:bit while receiving *acceleration* data on another. Can you tell from the graph when it was rising or falling?