



Suggested Kick Off Activity for Student Digital Ambassadors Adrian Oldknow adrian@ccite.org

As the end of term draws nigh I very much hope you will be able to get a meeting with your SDAs before it ends. I would be very interested to know what ideas you, your colleagues and/or your students come up with for activities making use of the micro:bits facilities. I have only run one hands-on sessions myself to date! It was with a dozen retired folk belonging to our local Beta-plus Computer Club with a very mixed back of skills and experience.

I now have a set of 12 plastic wallets each with a micro:bit, battery pack and USB cable and very basic instructions. Also a collection of the various bits and pieces I have bought to go with them, illustrated in the guides posted [here](#), [here](#) and [here](#).

The main objectives of the introductory sessions might be:

1. To explore the various options for creating and uploading code to the m:b – Microsoft's editor, MicroPython, Scratch and the ARM mbed editor, so that each student and mentor can make an informed choice about which method to use;
2. To create some code for simple sensing and control – using if and then – so that they become familiar with the inputs and outputs available on-board the m:b e.g. LEDs, buttons, sensors – and interfacing to external devices e.g. buzzer, motor, Bluetooth;
3. To locate some of the main web-sites where ideas, information and support can be obtained e.g. BBC, IET Faraday, Micro:bit Foundation, STEM Learning.

I have just succeeded in hooking up the accelerometer sensors from the micro:bit through Bluetooth to a free Android and Apple App from [Bitty Software](#) for data-logging. There is a report on using it to illustrate simple harmonic motion on an iPad [here](#). So that might be something worth exploring for a science based activity, such as Galileo's inclined plane.

Another starting point might be to suggest some situation around which micro:bit projects could be developed. The one I have thinking about is what might you carry on your bike? This was prompted by my son buying a smarter rear lamp for his bike which glows brighter as you brake. So maybe you could emulate this on the micro:bit by using the accelerometers to switch on more leds? My car uses a light sensor to switch on the lights automatically – could you do this for a bike? You can wire up a buzzer to the micro:bit – so what sorts of things might you choose to make it give you an audible warning. There is a compass on the m:b which show your direction – could you use this to make an indicator of where N is on the leds? Maybe a prize for the wackiest invention?

It might also be an idea to think of making a presentation to parents and friends of the school of the scheme and to start a fund-raiser to buy additional micro:bits and accessory kit such as that on the Kitronik site.

It would also be a good idea to make contact with the local STEM Ambassador Hub to see if they can connect you to any nearby companies who could provide expertise to support the initiative. Similarly with your local IET branch and its Schools' Liaison Officers. Also with the Computing and Electronics faculties of your local HE and FE institutions to see whether any staff or students would like to help support the SDAs.