**A Quick Introduction**

I am Darragh Corvan, better known as Dr C! I am a physicist providing services as an educational consultant to help the region upskill its teachers and students in computer programming and electronics. I offer classes for learners that will guide them from the basics of coding and electronics, up to a point where they can feel confident to create their own devices and robots. I also can help them build apps that can help them to organise work or camping trips, as well as helping with data visualisation. This is not exclusive to schools, but can be provided for learners in a wide range of settings. I also run bespoke INSET days/evenings for teachers who may not feel confident in this area of the curriculum, and are motivated apply these skills to their own subject area.

What is on offer

Dr C's Electro Labs limited has a full suite of some of the latest innovations in educational technology. There are a huge range of activities that can be selected from to suit differing levels of skills. My basic principle is "If you can type, you can code." This is applicable to staff as well. Many teachers are apprehensive about coding and do not have the time to sit down and learn by themselves. Moreover, technology is expensive, and schools need to justify their spending. The two problems often result in either technology not being there, or if it is, it sits in a cupboard being ignored. Dr C's Electro Labs solves this problem by providing the skill and the tech. In addition, I can offer schools the opportunity to host camps during half terms, as completed at Sir Henry Fermor in February 2022. Equipment provided includes, but is not limited to:

1. Raspberry Pi 400s
   a. These microcomputers are incredible learning tools, contained in a portable keyboard.
   b. An entire class worth of these computers can be easily set up in a hall or classroom, limiting the need for pre-existing tech or facilities being needed onsite.

2. Raspberry Pi Picos
   a. These little microcontrollers are excellent for controlling sensors and devices.
   b. The Pico is cheap enough so learners will not run the risk of burning out an expensive device and are therefore able to make mistakes without worrying about expensive consequences.
   c. Dr C has a full array of sensors and output devices for the learners to get to grips with the concepts.
   d. A range of solderless breadboards help learners follow the diagrams easily to success.
   e. The flexibility of these devices means that projects are limited only by their imaginations
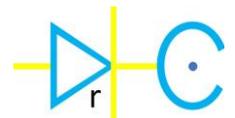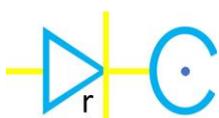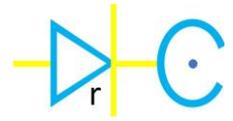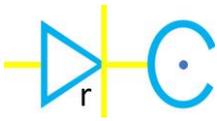
3. Kitroniks robots
   a. These little driverless car robots are ideal for demonstrating automation.
   b. Learners drive around dedicated maps or code for line following .
   c. Ultrasonic sensors are used for object avoidance.

4. Circuit Playground Expresses
   a. These microcontrollers contain a full set of devices that mean they are even easier to use than the picos.
   b. Younger learners can skip the fiddly electronics and get straight to coding.
   c. Crocodile clips make it easier to set up peripherals.
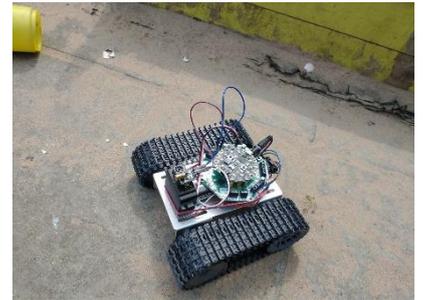
5. Circuit Playground Crickits
   a. These boards extend work on the Circuit Playground Express and clip easily onto them.
   b. The Crickits make it easier to set up robotics projects.

6. Robotic arms
   a. An absolute favourite of the learners, the robotic arms are built to pick up blocks.
   b. Additional sensors can be added in so that the robot can detect colours and decide where the loading can occur.
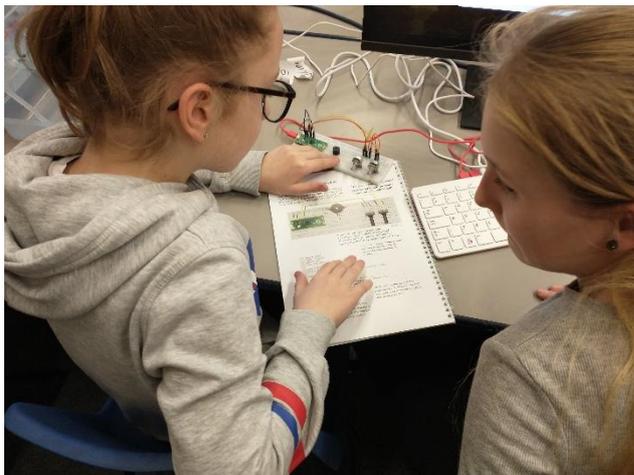

As well as the hardware that is available, often schools or organisations such as the Scouts will want an application based offering. Dr C's Electro Labs can run courses on app building in Python, using the tkinter module.

As a physicist, data visualisation is very important to me; I can train staff or learners in how to use the matplotlib module for graph drawing and simulation.

A huge array of activities are available, all with booklets to enhance the learning. The offering is being expanded all the time. It is hoped that the region can be upskilled significantly by the operation of Dr C's Electro Labs.
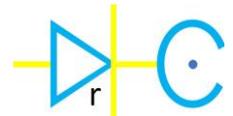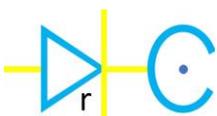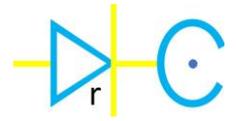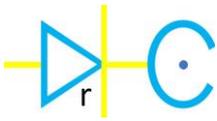
An example

Following the success of our October Half Term Holiday Camp and Weekend Sessions, Dr C's Electro Labs is delighted to offer another Half-Term Coding Camp. Your son or daughter will be introduced to the skill of coding in Python, as well as gaining practical experience in making electronic circuits. There are options available for them to learn robotics, or to create a unique device or item that is automated, such as a castle. The camp will run from:

**May** 31st to **June** 2nd

Time: 9:00 am - 3:30pm

What's on offer this time?

● Dr C provides all of the equipment for the learners to build their creations.

● No prior experience is required; learners will be guided through the basics. Those will more experience will find something exciting to push them.

● Coding is in Python and gives learners experience of controlling a robot.

● Crafting creations that allow learners to explore the future of technology.

● Coding and building obstacle courses that their inventions will have to navigate.

The camp is suitable for those at Year 5 and above. If a learner can type, then they can code.

For bookings or to request more information contact Dr C at drcselectrolabs@gmail.com or visit the website at www.drcselectrolabs.com