technocamps

Inspiring | Creative | Fun
Ysbrydoledig | Creadigol | Hwyl

Programme Outline

C3

The Cross Curricular Coding (C3) programme offers a variety of topics to get students engaging in Computer Science activities across a range of subjects. The programme begins with Computational Thinking, then progresses to include programming through Scratch, Python and Greenfoot integrating Chemistry, Mathematics and Biology respectively. Wider topics are then available to choose from such as Cryptography; Technology Ethics and the Future; Machine Learning and more.

Programme Structure

This programme offers a variety of workshops. The Computational Thinking workshop is compulsory. Workshops after this point can be chosen by the school based on areas they want to study.

After Computational Thinking there are three programming workshops available. Two must be selected from the green list.

Following this there is a pic 'n' mix style of interesting topics listed in raspberry, of which two must be selected.

Schools must select five or more workshops to complete the programme.

Curriculum Links

- Enhancing digital competencies and problem-solving.

- Simulating a Biology ecosystem via Greenfoot.

- Using Mathematics to draw shapes in Python.

- Modelling atoms and molecules through Scratch.

- Enhanced logical thinking skills.

- Developing an electronic circuit simulating a smart light.

How does the programme work?

The program consists of five (or more) workshops that we will deliver to a class of students throughout the academic year. Each workshop lasts one whole school day, with delivery either in your school or at one of our partner university campuses.

Why should I get involved?

The workshops help enhance your students knowledge and understanding of a wide range of subjects. The workshops include activities relating to other STEM subjects whilst demonstrating the links to Computer Science.

Who should get involved?

The workshops are aimed at KS3 students.

What is provided in the workshop?

Each workshop includes a wide range of resources including presentation slides, a session plan, student workbook and solutions as well as example programs that can be demonstrated if necessary.

How can I get involved?

You can request a Technocamps Delivery Officer to deliver the programme to your students' by emailing us at info@technocamps.com.
You can also download the resources from our website:
http://technocamps.com/en

Computational Thinking

This is a compulsory topic to begin with. In this workshop, pupils will be looking at the concept of Computational Thinking and applying it to solve problems and simulate real-world sequences in Scratch.

Greenfoot - Food chain

This workshop develops students' knowledge of ecosystems, in particular, the food chain. Students then develop their knowledge on the Java-based Greenfoot environment by producing a game which is a simulation of an ecosystem.

Python - Mathematics

This workshop develops students' knowledge of programming, focusing on Python. With the help of Turtle Library, students will strengthen their understanding of geometry and learn how to program various shapes using the Python.
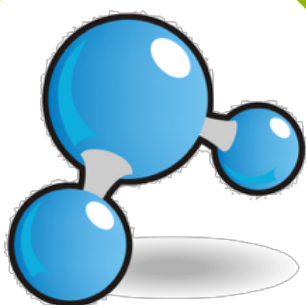
Scratch - Modelling Molecules

This workshop will develop pupils' knowledge of atoms and molecules and their behaviour as well as using Scratch to model different states of matter and simple chemical reactions.

Cryptography

This workshop introduces students to cryptographic techniques used both in ancient history and during the modern era. By understanding and implementing these techniques, students will strengthen their logical thinking and mathematics skills.

Technology, Ethics and The Future

This workshop focuses on the evolution of technology, ethical issues surrounding technology and future developments. Students will build electronic circuits replicating smart lights and also use Lego Mindstorms to imitate autonomous vehicles whilst considering ethical concerns.

Machine Learning

This workshop develops students' understanding of what Machine Learning is. Students develop their knowledge regarding appropriate and non-appropriate data when training a machine. Students will implement their own Machine Learning Scratch game.