



Wednesday 19 March 2025
Prenton

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	Workshop 1: Cybersecurity (Hannah)
11.00 – 11.30	Giant Sorting Network (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	Workshop 2: Binary system and radix sorting (Jenny)
12.45 – 13.45	Hands-on Workshop: Lego EV3 drives the warehouse
13.45 – 14.00	Closing Talk

All workshops take place in Lab 3 of the George Holt building.

Information about the Activities

Cybersecurity

Cyber Security is necessary in many areas of everyday life. Ciphers are just one of the prevention methods that are used daily to protect the systems we use and our data against various threats. In this lesson students will learn how to use ciphers effectively and how to encrypt and decrypt simple ciphers. Additionally, they will start to explore the topic of encryption and how the various levels of complexity.

Giant Sorting Network

In this outdoor lesson, pupils will play the role of the “compute nodes” in a parallel sorting algorithm. They will experience first-hand how parallelism speeds up computation, but also makes it more challenging to reason about programs.

Binary system and radix sorting algorithm

Discover the magic behind how computers think and organize data! This interactive lesson dives into the world of binary numbers, the building blocks of all computing. You'll learn how to count in binary, perform binary arithmetic, and explore the clever Radix Sort algorithm. Hands-on activities make it fun and engaging, as you build your own sorting model to see an advanced computer science concept in action!

Lego EV3 Drives the Warehouse

Robots managing large warehouses are one of the many examples where automation helps humans to solve a task faster and cheaper. For this to be effective, robots need to be at least partially autonomous, i.e., able to sense and react to the physical world without (constant) human intervention. In this hands-on lesson, pupils program Lego EV3 robots to follow a line, avoid obstacles, and ultimately navigate a warehouse safely and autonomously.