



The Oldershaw School

Wednesday 15 February 2023

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	Workshop 1: How Computers Work
11.00 – 11.30	Giant Sorting Network (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	Workshop 2: Intro to AI and Data Science
12.45 – 13.45	Hands-on Workshop: 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

How Computers Work

The lesson introduces the structure of Von Neumann processor architecture with the aim to introduce students to how computers are structured and how they work at a fundamental level. To aid in that, the main activity of the lesson will be puzzles designed to be solved using a *Little Man Computer* online simulator.

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.

Intro to Artificial Intelligence and Data Science

The lesson gives some concrete examples of how artificial intelligence can look like and its diverse applications in the world.

Lego EV3 Drives the Warehouse

Robots managing large warehouses are one of the many example 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.