UNIVERSITY OF LIVERPOOL

Department of Computer Science
Computer Science Taster Days

Wednesday 5 March 2025
St Francis of Assisi

Programme of Activities

10.00 – 10.15	Arrival in our Lab & Welcome (including security induction & account registration)
10.15 – 11.00	**Workshop 1: Decomposition and Flowcharts (Stefan)**
11.00 – 11.30	**Giant Sorting Network** (outdoor activity)
11.30 – 12.00	Lunch Break
12.00 – 12.45	**Workshop 2: Search like a superhero, Master the art of algorithms (Samya)**
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

Decomposition and Flowcharts

Discover the power of thinking like a computer scientist and learn effective life skills by breaking big problems into small, manageable steps through decomposition. This hands-on lesson uses real-life examples, like planning your day or making tea, to teach the correct way to approach and understand a problem to create efficient algorithms to solve it – no coding experience needed! You will understand the importance of computer scientists and engage in interactive activities that will highlight how these foundational skills can lead to exciting careers in tech. By the end, you'll feel inspired and ready to explore the endless creative possibilities in computer science.

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.

Search like a superhero, Master the art of algorithms

Have you ever wondered how computers search through massive amounts of information so quickly? This lesson introduces students to the fascinating world of logical thinking, fundamental to all of computer science, through a hands-on and relatable experience. Students will learn to code using python to solve logical puzzles and understand how algorithms like linear search and binary search help computers find information efficiently. This lesson is fun, challenging and leaves students with that ‘eureka’ moment about how algorithms and logic shape the technology they use.

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.