STEM Kits Inspire Young Cubs at 2nd Caldicot Group to Explore the World of Electronics

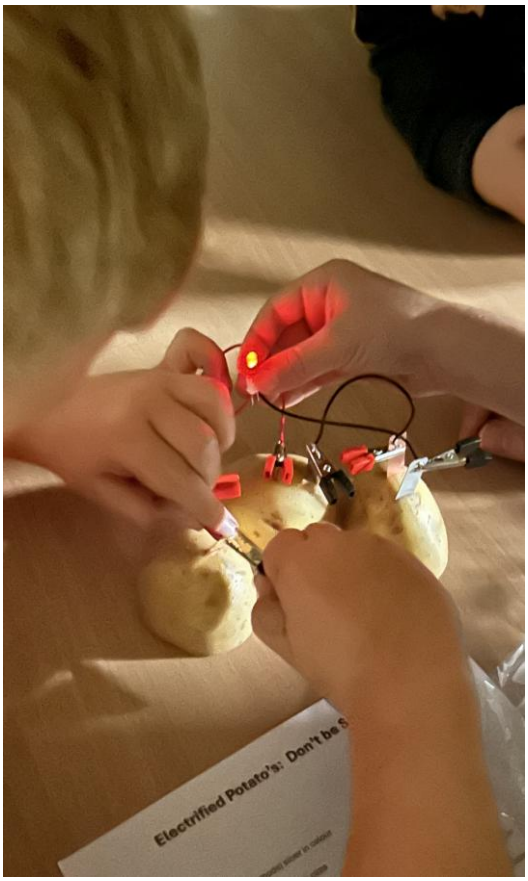
Darren Harvey of Accelonix recently hosted an exciting STEM session for the 2nd Caldicot Cub Group (ages 8–10), where our young Cubs explored the fascinating world of electronics and everyday devices through hands-on experiments.

The session kicked off with a short, interactive talk on “What are electronics!? Cubs learned where electricity comes from, how it powers devices, and discovered basic components like resistors, capacitors, and transistors. To make things relatable, water flow was used as an analogy for electricity. Highlights included examining an 8” scrap wafer donated by Microchip, inspecting old SMT transistors, and exploring the inside of a stripped-down iPhone. The Cubs were amazed to learn that a modern mobile phone contains over 10 billion transistors—a real wow moment!

Hands-on Silicon Wafer containing Semiconductor Chips

To maximise participation, the group was split into two teams of six. One team worked with the Hotwires electronics kit donated by IMAPS-UK and the Centre for Power Electronics, while the other powered a light bulb using potatoes. Each activity encouraged teamwork, with Cubs taking turns reading instructions, finding parts, and building circuits. Afterward, the teams swapped so everyone could try both experiments.

Creating Circuits with Hot Wires Kit



Using Potatoes to Generate Electric Currents

The session was wrapped up with a fun True & False quiz on electricity and electronics. While there isn't an official "Electronics" badge, this session counts towards the Cubs' Science and Teamwork badges.

Overall, the event was a great success! The Cubs were enthusiastic, engaged, and especially curious about how their game consoles and everyday devices work. It is hoped that this experience sparks a lifelong interest in electronics and inspires some future engineers.

If you are interested in encouraging primary school students to explore the world of electronics, IMAPS-UK can offer electronics kits and books to assist in the learning process. Simply contact office@imaps.org.uk for more information.