

Girls into Electronics

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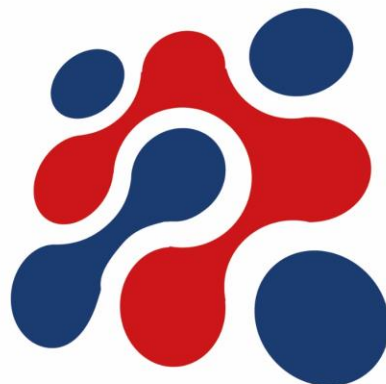


**UK Electronics
Skills Foundation**

Connecting the most capable students from top universities with leading employers



University



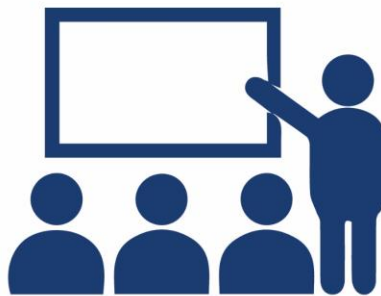
UK Electronics Skills Foundation



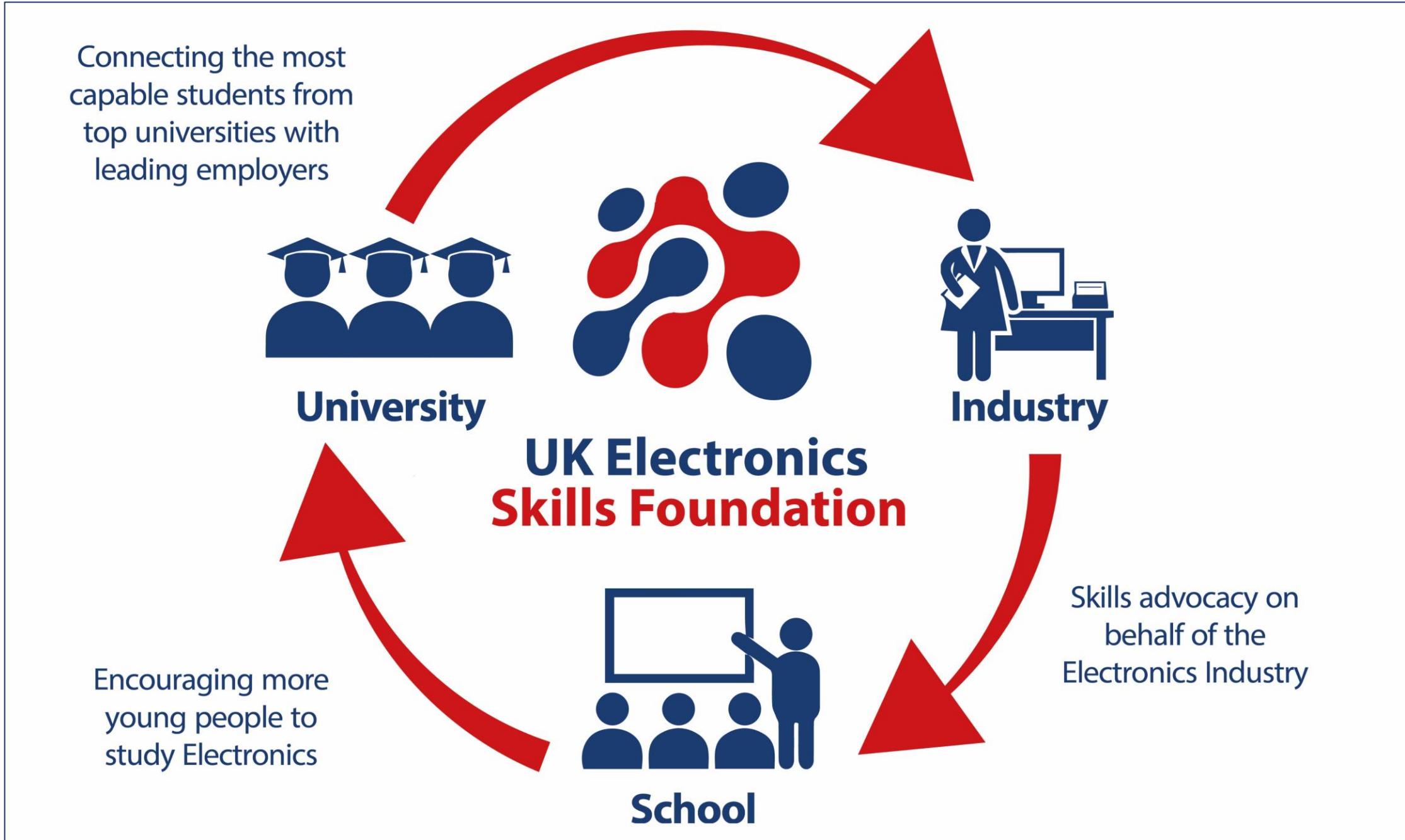
Industry

Skills advocacy on behalf of the Electronics Industry

Encouraging more young people to study Electronics



School





UK Electronics
Skills Foundation

“Electronics is a fundamental enabling technology that helps make our lives and societies better.

A strong Electronics and ‘deep tech’ industry is essential to the health of the UK economy but we know that the UK has a skills shortage in this critical sector. **That’s why it’s great to see the work that the UKESF is doing encouraging more young people to pursue careers as Electronics Engineers.**

In particular, their **Girls into Electronics initiative has the potential to make a real difference and it is something that I strongly support.**

As the only organisation linking schools, universities, students and industry to address Electronics skills, the UKESF is poised to be an important contributor to the long term success of the industry in the UK.”



Chi Onwurah MP Shadow Minister for Science, Research & Digital



Tim Cook: 'No good excuse' for lack of women in tech

"I think the the essence of technology and its effect on humanity depends upon women being at the table," Mr Cook says.

"Technology's a great thing that will accomplish many things, but unless you have diverse views at the table that are working on it, you don't wind up with great solutions."

He said while companies including his own had made progress on diversity, there were "no good excuses" for the tech sector not to employ more women.



Getty Images

BBC News 27 September 2022



Agenda for Girls in Electronics

- What is Electronics?
- What is it like to study Electronics/Engineering at university?
- What is like working as an Engineer in the Electronics sector?

During the day you will hear from female engineers and interns working at Electronics companies, and from lecturers and female students at your host university.

You will be able ask questions and find out more about them and their work and studies.

You will also get an introduction to microcontrollers with the Grove Beginner Kit for Arduino. This is yours to keep.

Our Sponsor



Our Host Universities



Girls into Electronics

"The course was so insightful and made me consider a sector which I hadn't necessarily thought about before. It was amazing talking to so many inspirational women in Electronic engineering"

The *Girls into Electronics* programme provided 230 girls between the ages of 15-18 with a unique opportunity to develop an interest in Electronics.

Hosted by 10 of our partner universities, and with support from our sponsors CSA Catapult, the UKESF held one-day events that showcased Electronic Engineering as a degree and a career. Participants had the opportunity to:

- Attend a sample undergraduate lecture from a senior academic
- Hear from current female students about their experiences
- Tour the university department and see research facilities
- Learn about working the sector by hearing from UKESF Scholars
- Take part in an 'hands on' introduction session to learn about microcontrollers.

97%

of respondents rated the *Girls into Electronics* day as 'Good' or 'Excellent'

89%

of respondents felt more enthused about Electronics after attending

84%

of respondents who weren't considering a career in Electronics prior to attending, now are



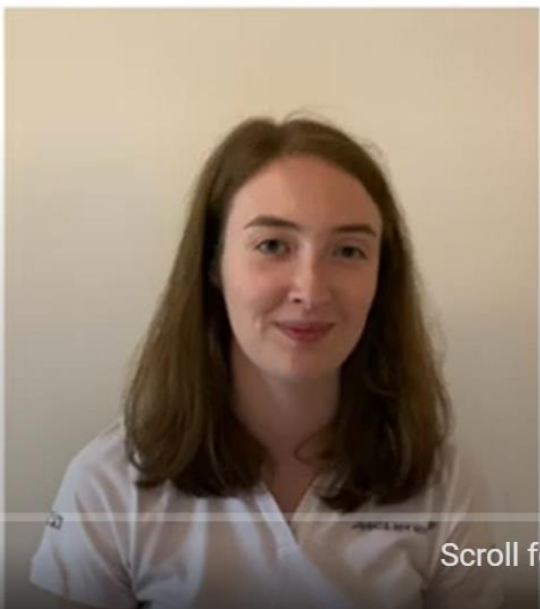
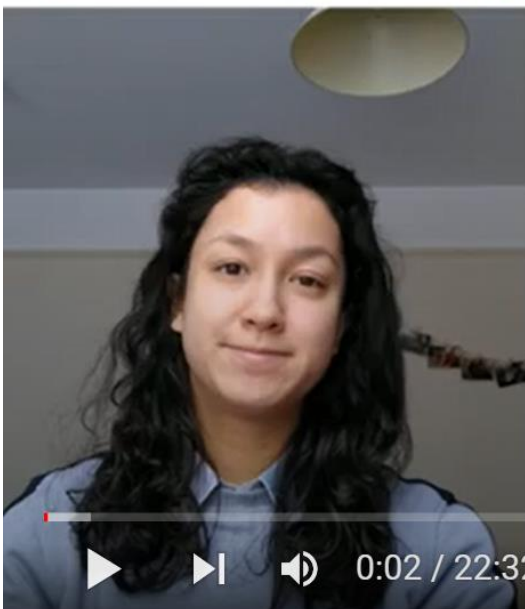


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UKESF Girls into Electronics interviews 2022



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A Journey into Electronics: Interviews with Five Female Engineers

UKESF, Girls into Electronics 2022

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Scroll for details



Aston
6th July



Imperial
12th July



Bath
4th July



Kings College
5th July



Bristol
13th July



Lancaster
4th July



Heriot Watt
14th June



Leeds
4th July



Liverpool
10th July



Royal Holloway
4th July



Newcastle
12th July



Sheffield
6th July



Nottingham
6th July



Southampton
5th July



Queen's
12th June



Strathclyde
14th June





THE EVENT

During the day, participants will experience a sample lecture from a senior academic, input from current students, a department tour, a Q&A, and an introduction to microcontrollers. This introduction will be a 'hands on' practical session using the Grove Beginners' Kit, including Arduino, which participants are provided with and is theirs to keep (find out more about the kit on our [Insight into Electronics page](#)). As well as the event, there will be the opportunity to gain further insight through follow-on activities, including online sessions to guide participants through further practical activities with the microcontrollers.

INCLUSION

The UKESF is committed to ensuring participation on the course is inclusive. Therefore, pupils from state-sector schools will be given priority. Course material and delivery is checked to avoid any unconscious gender bias, and as many of the contributors as possible are female.

*As a charity, we want our courses to be accessible to all, so if the administrative fee is a barrier or if you need support for travel costs, please get in touch via info@ukesf.org.

BOOK YOUR PLACE

If you are an individual student interested in attending, please book [here](#). The course is fully sponsored by Apple, with the exception of a small booking fee of £20.*

If you are a teacher interested in bringing a group of students, please use the booking form [here](#). A discount on the booking fee can be arranged if you would like to bring a group of 5 or more students.

If you are not in a position to book yet, but would like to register your interest, please provide your details [here](#). When you're ready to secure places, the booking form can be completed. Your place at the event is not reserved until you have completed the booking form and been invoiced. However, if places are becoming limited for the event, we will contact you.

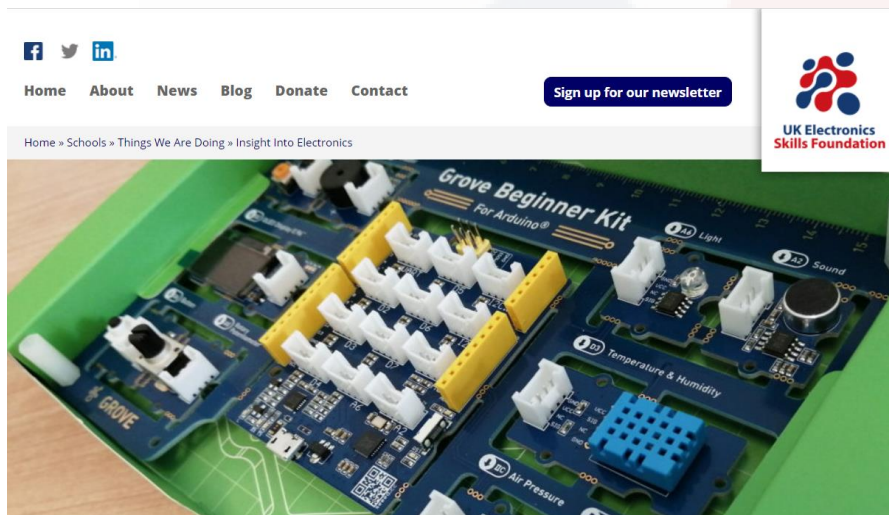
Please note, bookings will close 2 weeks before each event.

Girls into Electronics - UKESF



UK Electronics Skills Foundation

Insight Into Electronics



WATCH THE VIDEO

The following video introduces the kit and covers everything you need to know to get started with programming and uploading your own code to the board.



INSIGHT INTO ELECTRONICS

'Insight Into Electronics' is an exciting new initiative from the UKESF. It is a self-paced, interactive and **FREE** course that provides young people with a hands-on introduction to microcontrollers, Electronics and programming. A collaboration between the UKESF and **Aston University**, the course is specifically designed for UK-based sixth formers and KS4 pupils (S3 in Scotland) interested in Engineering, Electronics and Computer Science. It will provide a fascinating insight into these technologies, for those thinking about studying these subjects at college or university.

Many thanks to the **Scotland 5G Centre** for their support of this initiative.



SIGN UP

There is currently a waiting list to receive a kit. If you are an individual UK student in Year 10-13, please register your interest [HERE](#).

LINKS

- [ROBOKID](#)
- [PEOPLE LIKE ME](#)
- [GIRLS INTO ELECTRONICS](#)
- [ELECTRONICS EVERYWHERE](#)
- [INSIGHT INTO ELECTRONICS](#)

OTHER LINKS

- [HOME](#)
- [NEWS](#)
- [BLOG](#)
- [UNIVERSITIES](#)
- [EMPLOYERS](#)
- [SCHOOLS](#)



A-LEVEL COMPUTER SCIENCE SYLLABUS

- A-Level Computer Science (and Scottish Highers) contains a lot of computer engineering. Including:

Logic Gates

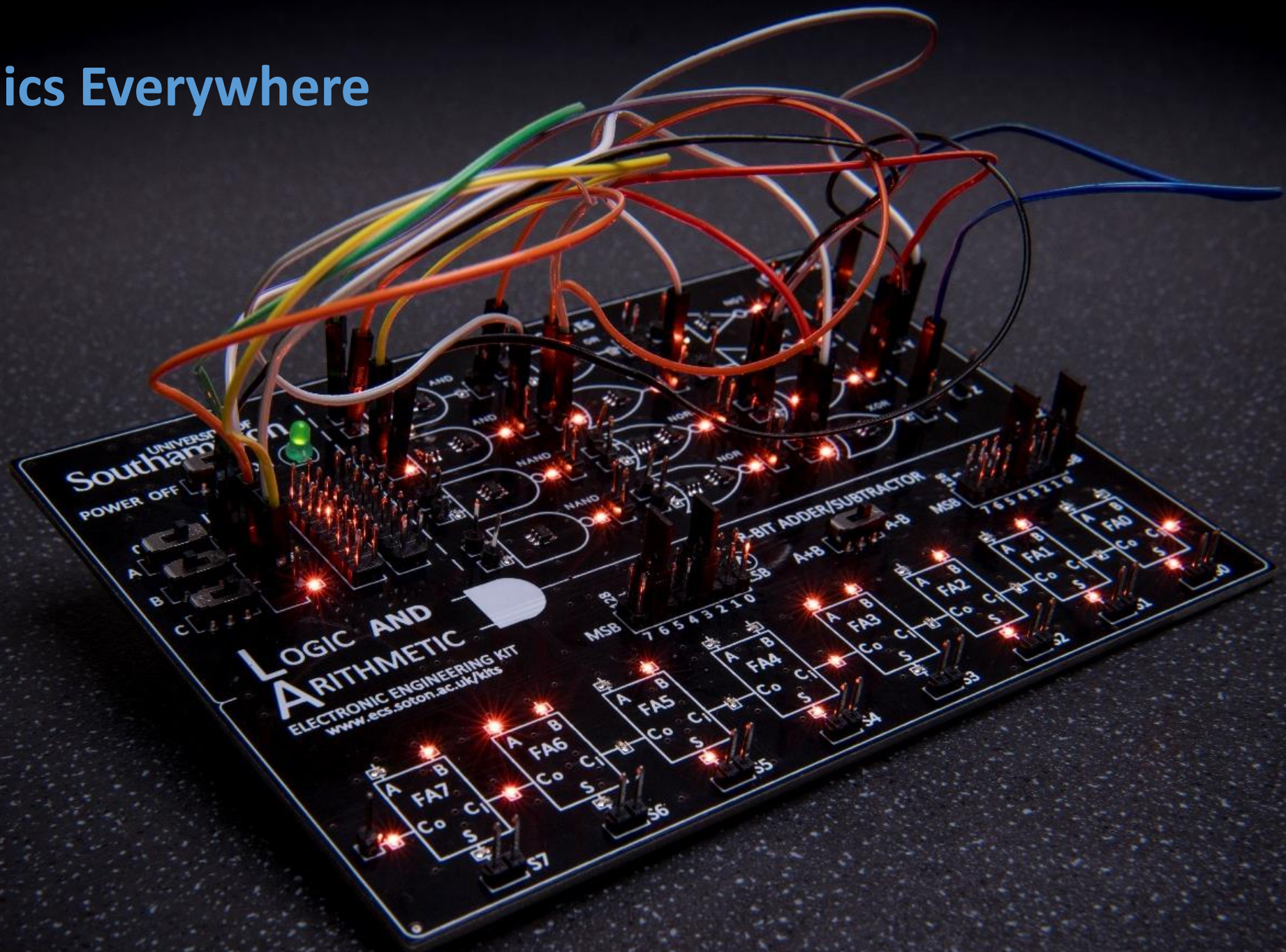
- NOT, AND, OR, XOR, NAND, NOR
- Logic circuits <-> Boolean expressions
<-> Truth tables
- Logic minimisation
- Half-adder and full-adder circuit

Number Systems

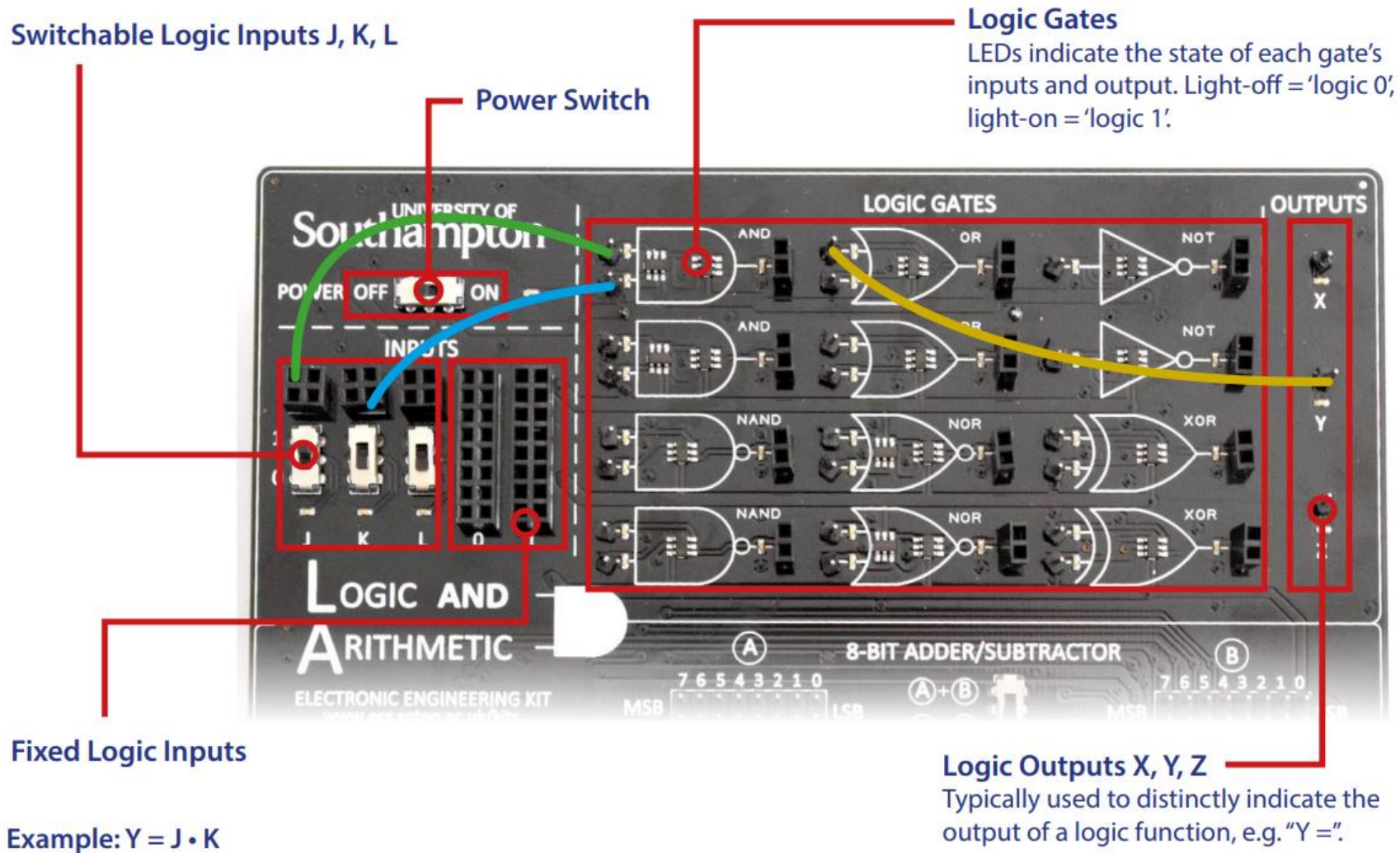
- Decimal, binary and hexadecimal
(and converting between)
- Signed and unsigned binary arithmetic

- Often taught through simulation or PowerPoint
- Same material included in specification for OCR Cambridge Technical Engineering (Level 3)

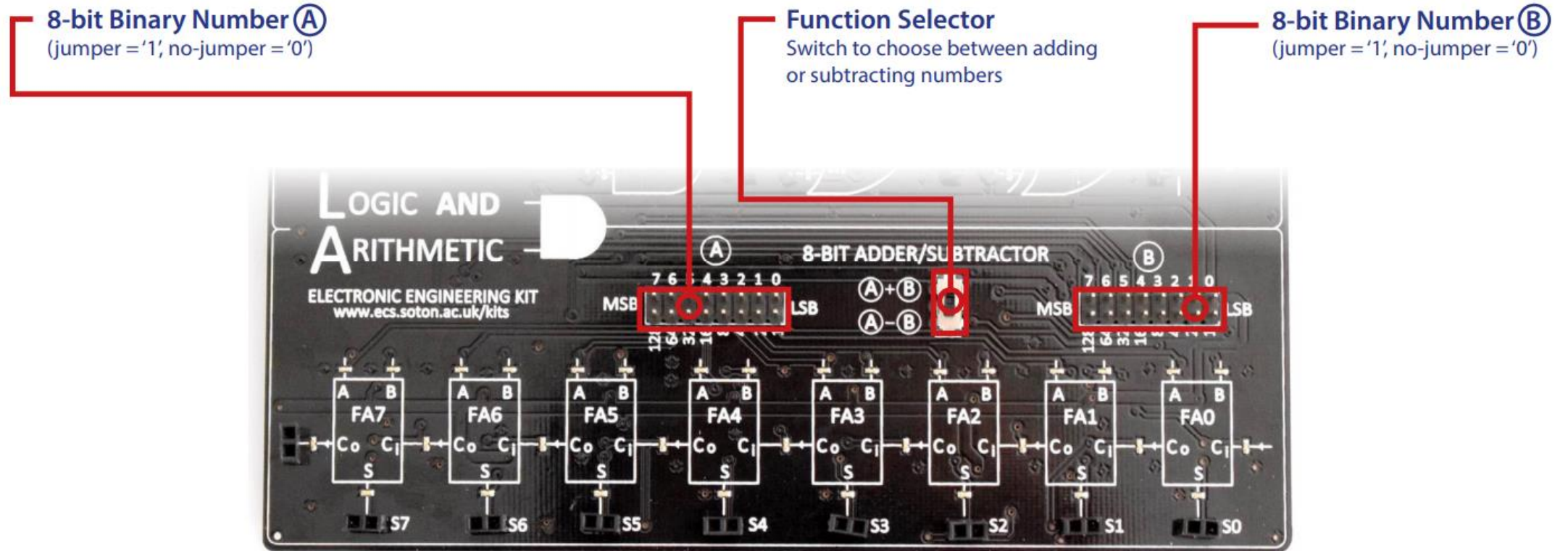
Electronics Everywhere



A-LEVEL COMPUTER SCIENCE KIT: LOGIC



A-LEVEL COMPUTER SCIENCE KIT: BINARY ARITHMETIC



Example: calculating 011010102 (10610) + 001110112 (5910)

1. turn on the power
2. put jumpers on positions 6, 5, 3, and 1 of header (A)
3. put jumpers on positions 5, 4, 3, 1, and 0 of header (B)
4. set the function selector to the '+' position
5. observe the result, 101001012 (16510), on the S7-S0 indicators at the bottom of the board





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Thank You

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