



Engineering Education Scheme Wales

IET The Institution of
Engineering and Technology

EngineeringUK

in Schools



**Cronfa Gymdeithasol Ewrop
European Social Fund**



Who are we?

**We are an independent registered educational Charity.
We run numerous activities across Wales, providing students with the opportunity to gain practical experience working with industries, businesses and higher education. These activities benefit students from ages 11 to 19 of all abilities, and the aim is to further their knowledge and experience of practical STEM.
EESW is part funded by the European Social Fund to run the STEM Cymru 2 project within the West, North Wales and Valley area.
We also receive funding from other sources to provide some activities to schools in East Wales.**



Contact Us

To find out more about how you can get involved with EESW STEM Cymru activities visit www.stemcymru.org.uk

Email- info@stemcymru.org.uk

Telephone- 01656 669381

You can also find us on social media

@EESWSTEMCymru



KS3,4 & 5 (11-19)



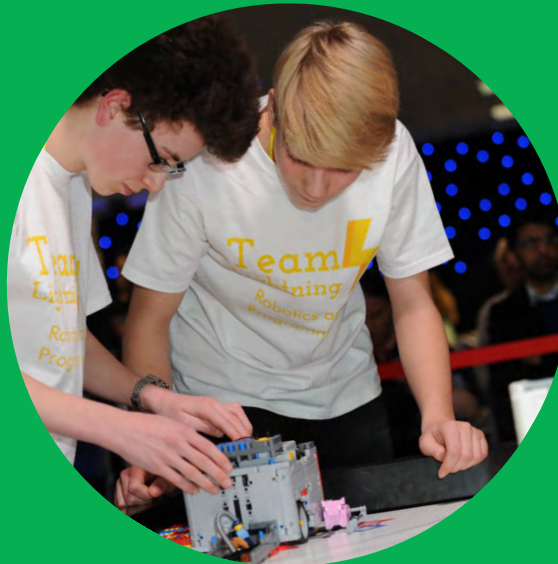
The F1 in Schools competition involves teams of pupils designing and manufacturing CO₂-powered model racing cars. Teams then compete for prestigious awards at the Welsh Regional Finals, with the chance of representing Wales at both National and World Finals. Split into 3 classes, teams are assessed on the performance of the car, design, development, promotional materials, pit displays, and verbal presentation. Schools across Wales can enter up to five teams of pupils and will be supported by EESW STEM Cymru.





CHALLENGE

The **FIRST LEGO League Challenge** is a global science and technology challenge for teams of up to ten students aged 9 to 16. The students work together to explore a given topic and to design, build and program a LEGO MINDSTORMS or SPIKE Prime to solve a series of missions.





Introduction to
Engineering

KS3 (11-14)

i2E Introduction to Engineering is a collection of practical activities designed to stimulate the interest of young people in STEM subjects by engaging them with stimulating and enjoyable projects. All of them include the application of maths and science in real contexts.

Workshops can be delivered as classroom-based or as collapsed - curriculum events.

Activities include:-

- Urban Farming Project
 - Wind turbine
 - BBC Micro:Bit
- Engineering is it for me?
- EESW Speed Challenge



BBC Micro:bit Workshop

Students are guided through a series of challenges where they will write code using Javascript or Python to move a Microbit car through a series of tasks. The children will then code a transmitter and receiver, turning their car into a remote control vehicle with which they can compete with one another, adjusting their code throughout to improve their vehicle.

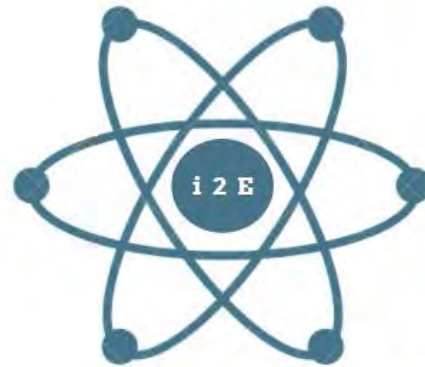
Wind Turbines Workshop

This allows pupils to learn how a wind turbine works, how they are engineered and constructed. Working in small teams, pupils use our redesigned wind turbine model kits to build and measure energy generated. By adjusting their design, each team is tasked to create and record the most efficient wind turbine.

EESW Speed Challenge

A fantastic two-hour taster session where pupils get to have a glimpse into the exciting world of F1 in Schools! This whole class workshop gets pupils working in teams to build cars and race them on our purpose-built track to see which team has produced the fastest F1 car.





Introduction to
Engineering



Urban Farming Project

This Project challenges teams of pupils to design, build and program their own smart micro-greenhouse. EESW will deliver coding sessions, alongside full class packs including programmable BBC Micro:bits, environmental control boards, sensors and components, plus how-to guides, videos & cross curricular lesson plans

For more information about i2E workshops please contact info@stemcymru.org.uk or visit www.stemcymru.org.uk

Engineering - Is It For Me?

Introduce your pupils to the broad field of engineering careers with this engaging activity. Pupils are given a branch of engineering to discover, which they will use to create a profile of an engineer to share with their classmates.

GIRLS INTO STEM

Contact Aimee Thomas
aimee@eesw.org.uk for a list of
available events.

YEARS 8 AND 9

Girls into STEM is a popular programme of events aimed at encouraging girls to take an active interest in STEM subjects.

Pupils are targeted prior to selection of GCSE subjects.

The programme includes:

- An introduction to the company/organisation.
- A site tour.
- Practical hands on experience.
- Inspiring talks by female role models.

These events encourage pupils to become more aware of the career opportunities for females in industry and to see the relevance of STEM subjects related to such opportunities



EESW Project

YEAR 12

A link company sets a project within the company for a team of up to 8 Year 12 students. These experiences develop valuable employability skills and enhance UCAS applications and CVs and provide discussion points for interviews. Students participating in the various strands can gain CREST Awards, which is Britain's largest national award scheme for project work in the STEM subjects (Science, Technology, Engineering and Maths).

This activity provides multiple benefits:

- Students gain an insight into engineering as a career.
- Students can enter for a Gold CREST Award.
- Students can use their project for the Welsh Baccalaureate Enterprise and Employability Challenge.
- Students gain valuable employability skills.
 - Schools/Colleges benefit from teacher continuing professional development (CPD).



Headstart

YEAR 12

Headstart Cymru is a three-day residential course that gives year 12 students the opportunity to spend time at a University Engineering Department prior to making UCAS applications.

Students will take part in hands-on sessions in a variety of engineering disciplines.

Students stay in university accommodation, dine in student refectories and take a tour of the campus with undergraduates. Evening activities are arranged to give a real feel for university life.

The location of the Headstart visits differ every year. Please check our website for upcoming Headstart visits or contact us at info@stemcymru.org.uk

