

Sponsored by



The Institution of
Engineering and Technology



Governors
for Schools
Conference
2022.

Delivering STEM education with conference sponsor IET

[#GfSConference2022](#)

Housekeeping

- Many thanks for taking the time to attend the Governors for Schools Conference 2022. Please note that this session will be recorded and uploaded to our website following the conference. You will receive an email alert as soon as recordings are available.
- All conference sessions are individually accredited by the CPD Certification Service. If you would like a certificate, we require consent to share your data with the service. To confirm your consent, please remember to fill out the survey provided at the end of the webinar. We cannot send a certificate without consent.
- If you have any questions for our panellists, please ask them using Zoom's Q&A feature.
- If you're disconnected from this call for any reason, you can re-join by clicking the same Zoom link you used to access the session

Sponsored by



Governors
for Schools
Conference
2022.

The IET

The Institution of Engineering and Technology (the IET) is a professional membership organisation with over 155,000 members in 153 countries and is a registered charity based in the UK.

We **inspire, inform, and influence** the global engineering community **to engineer a better world.**

Education is a strategic theme for our 2030 strategy. Engineering UK estimate's there will be a shortfall of 59,000 engineer's & technicians entering the industry.

During the 2021/22 academic year:

Direct engagement with over 39,000 students through our STEM programmes.

Engaged with over 60,000 through our online resources and engagement campaigns.



The IET – Our supporters

Join our cohort of sponsors and be a part of our mission to engineer a better world





Benefits of STEM Education

Benefits of STEM Education

Advancing Education –

Enable teachers to confidently teach subjects and topic matters around a real-world theme, giving the learning context, and relevance.

Breakdown stereotypes –

A person, especially a young person, should not feel trapped within a preconceived image of what they can and cannot achieve.

Give students real-world role models -

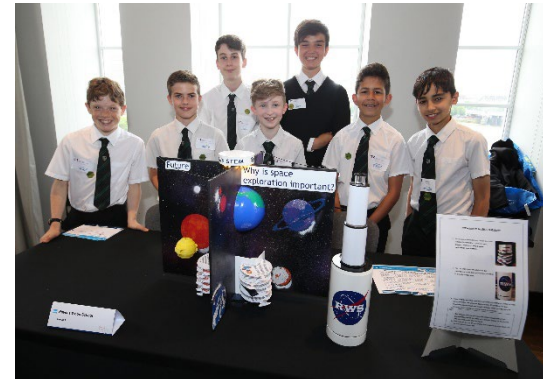
Bring Volunteers from industry into the classroom.



Benefits of STEM Education

Develop employability/life skills -

- *Teamwork* - working together in teams, sharing turns and the materials they work with, learning from peers and their ideas, and trusting each other with roles and responsibilities.
- *Communication* - describing in rich detail, giving clear instructions, explaining their reasons, and telling stories, all of which help them to communicate with others and express ideas.
- *Problem-solving* - staying focused, remembering a task or a challenge, setting goals and making plans, producing creative ideas, and reflecting on what they do and how they do it.
- *Resilience* – persevering when ideas fail and staying calm under the pressure of competition.





Testimonies

“As far as data and the effect LEGO® has had in our school...it is HUGE. There is a buzz about it and every year group is loving the activities. We have a display in the hall that everyone updates so we can see what everyone is doing.

As an example one boy in Year 5, who is not studious, came to me to explain that he had got a LEGO® Jeep for his birthday. He brought it in to show me and then showed the whole class, which was a huge thing for him. He then used some of the SPIKE equipment to motorize it with his friends over lunch time.” FIRST® LEGO® League, Delivery Teacher.

“I enjoyed the day, I felt it was very impactful as my ideas could be considered for future in the NHS industry and could help millions more. It also contributed to learning about crafts and engineering.” Faraday Challenge, 13-year-old girl.

One child in particular enjoyed one of the design challenges so much that he went home that evening and created a model of his design. He was so excited to share it in school the next day.” FIRST® LEGO® League, Delivery Teacher.



Delivering STEM Initiatives



IET Education

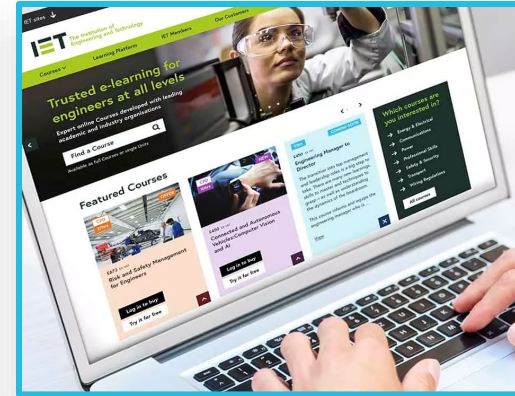
FIRST® LEGO® League



Faraday Challenge Days



STEM Resources



IET Teacher Membership



IET Education Officers & Ambassadors



Digital Poverty Alliance



Grant Schemes



Research / Impact Report



**FIRST
LEGO
LEAGUE**
DISCOVER

AGES
4-6



FIRST® LEGO® League Discover is a playful introductory STEM programme that ignites young students' natural curiosity and builds their habits of learning with hands-on activities in the classroom and at home using LEGO® DUPLO® bricks. The delivery of this age division takes place primarily in the classroom during lesson time. Teams work through the guided sessions discovering mechanical solutions culminating in a internal Celebration Event hosted at their school where the students share their ideas, learning journeys, and final designs. The Celebration Events are non-competitive with all students being celebrated for taking part in the programme.



Students Journey



**FIRST
LEGO
LEAGUE
EXPLORE**

AGES
6-9



In FIRST® LEGO® League Explore, teams of up to six students focus on the fundamentals of engineering as they explore real-world problems, learn to design, code, and create unique solutions made with LEGO® bricks and powered by LEGO® Education SPIKE Essential. The delivery of this age division takes place as either a extra-curricular activity or as part of the curriculum during lesson time. Teams work through the guided sessions culminating at a Festival Event, either held within their school or by attending one of our Regional Festivals. During the Festival a reviewer will discuss their team poster with them looking for the core values – impact, discovery, innovation, teamwork, inclusion and fun. The Festivals are non-competitive with all students being celebrated for taking part in the programme.



Students Journey





Friendly competition is at the heart of FIRST® LEGO® League Challenge, as teams of up to ten students engage in research, problem-solving, coding, and engineering - building and programming a LEGO® robot that navigates the missions of a robot game autonomously. Teams must also create an Innovation Project that will be presented to a panel of judges. The Innovation Project must be based on the seasonal theme and must focus on real world challenges.



Innovation Project



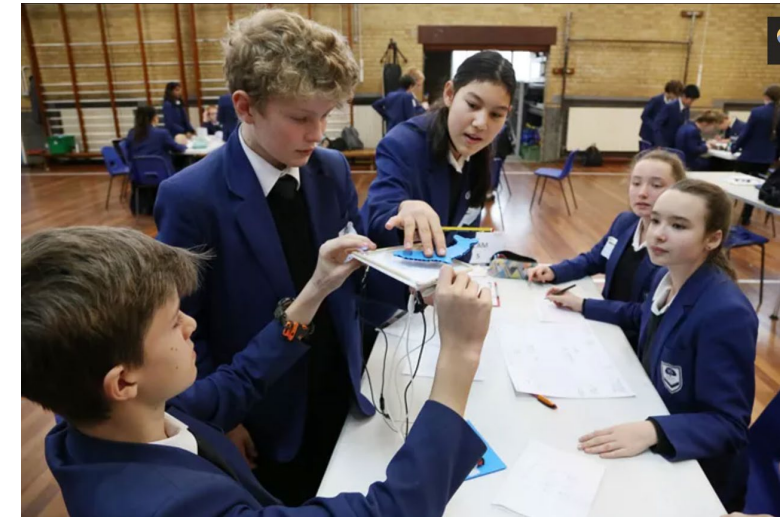
Robot game roadmap



Faraday Challenge | AGES 12-13



The [IET Faraday Challenge](#) is held at schools around the UK and is delivered as a full day activity with 36 students aged 12-13, divided into 6 teams. Students experience the journey of becoming an engineer, from walking into the classroom, to completing an apprenticeship and becoming “engineers”. The engineers are challenged with a real-world design brief focused on the annual theme. They must work together to design and build a prototype solution that incorporates both mechanical and electrical elements, staying within the budget and time constraints of the project. Students are encouraged to be creative and use their own problem-solving skills to explore their capabilities as engineers. To conclude the day, students must present their solution to the group and a panel of judges, typically made up of industry volunteers.



Students Journey



Educational Resources

We provide **free** teaching resources, classroom/home school activities and educational podcasts for students aged 4-11 and 11-19 years. Everything an educator could want to deliver high quality STEM lessons.

We have grouped some of our most popular STEM resources into themed areas to make it easier for educators to find what they are looking for.

You will find our resources on IET Education, Tes, STEM Learning, teachingideas.co.uk and greatscienceshare.org.



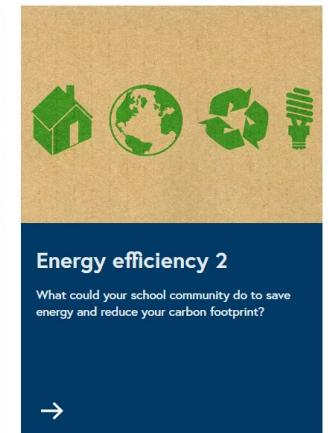
Circular economy
Understand the environment impact of a linear versus a circular economy.

→



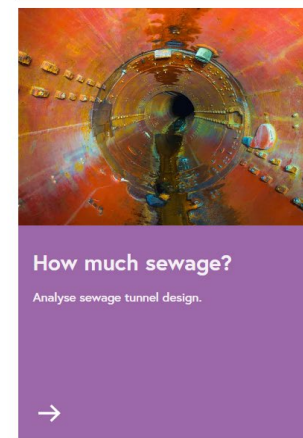
Energy efficiency 1
Describe and explain what sustainable technologies could be used in school or at home.

→



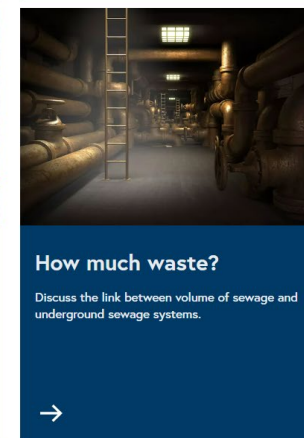
Energy efficiency 2
What could your school community do to save energy and reduce your carbon footprint?

→



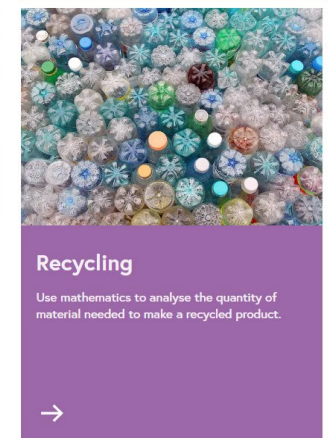
How much sewage?
Analyse sewage tunnel design.

→



How much waste?
Discuss the link between volume of sewage and underground sewage systems.

→



Recycling
Use mathematics to analyse the quantity of material needed to make a recycled product.

→

Teacher Membership

Teacher Membership for £30 a year

- Support CPD with access to our online CPD management system: Career Manager.
- Access networking opportunities with our Academic, Corporate, and Enterprise Partners.
- Work with universities to support students wishing to study STEM.
- Link up with our industry contacts to help with finding engineers for school visits or to support the provision of student work experience
- Network through our specialist online communities, including a STEM teachers community and discussion forum.
- Access thousands of STEM videos on a variety of topics, with searchable content through iet.tv, our own extensive video archive.
- Access to the digital edition of our award-winning STEM specific Magazine: E&T.





Questions for governors around STEM

Examples of questions that you could pose to your school leadership teams are:

- Does our school have a policy and curriculum plan for each area of STEM? Are these policies reviewed regularly?
- Is our school conducting enough monitoring of our STEM provision?
- Do the middle leaders at our school have protected time to develop their subject areas? Is this enough time? How do we know?
- Does our school actively address barriers to engaging in STEM education? If so, how do we do this and is it effective? How do we know this is effective?
- Does our school have attainment challenges in STEM subjects? If so, what are our plans to address these challenges?
- Do we work with outside organisations to support with our STEM work? If so, who and what impact does this have? How do we know this?

Next Steps



Get Involved!

- Explore the IET website: <https://education.theiet.org/>
- General Queries: education@theiet.org
- FIRST LEGO League: flenquiries@theiet.org
- Faraday Challenge: faraday@theiet.org





Thank you!



Any Questions?

Sponsored by



Governors
for Schools
Conference
2022.

Thank you for attending

Governors for Schools would like to thank The Institution of Engineering and Technology for their generous sponsorship of #GfSConference2022.

Please remember to check your emails for updates about session recordings and complete our exit survey to receive your CPD certificate. If you're watching this session on demand, please contact Louisa.Hann@governorsforschools.org.uk to request your certificate.

#GfSConference2022