



Guide for ambassadors and volunteers supporting the IET Faraday Challenge Days

Many thanks for supporting an IET Faraday Challenge Day! The days are very intensive for the Challenge Leaders who carry them out, so your support on the day is hugely appreciated.

Please find enclosed your volunteer pack with all the information you need to support the event, along with your volunteer checklist below. Please ensure that you have read all the information enclosed and can tick all the boxes before attending so that we can ensure the day runs as smoothly as possible.

Volunteer checklist

- Ensure you are available to attend between 08:00am and 03:30pm to support on the day. Please arrive between 08.00 and 08.30am to help the Challenge Leader set up for the event (arriving later can disrupt the event and prevent you from being properly introduced). Report to Reception on your arrival. You may have to wait here until a member of staff or the Challenge Leader can come to meet you.
- Bring your DBS and photographic proof of identity (passport, driving licence or STEM Ambassador ID card). Entry into the school may not be possible without this.
- Introduce yourself to the Challenge Leader as they will brief you and will also introduce you during the students' briefing so that the students are aware of who you are and your role on the day.
- Let the IET know if you would like to take along any handouts, props, IET banners, etc. to the event so that we can make room for these if required. There will, however, not be time for any presentations or demonstrations on the day.
- We do not expect the school to provide us with refreshments so it is always best to bring your own lunch and refreshments for the day.
- Advise the IET, in advance, if a parking space at the event is required, some schools have limited parking or parking off-site so arrangements may need to be made in advance. Please do not contact the school directly to arrange this. All contact with the school **MUST** be made through the IET Faraday team.
- Read the briefing information attached so you can support each team and offer appropriate help where required during the event.
- This briefing is only for the Faraday Challenge Day you have informed us you will be attending. Please do not attend any others you hear about without prior agreement from the IET Faraday office as must inform the schools in advance of any attendees.

Important Note: If you or a family member is showing any signs of Covid-19 or has had tested positive, please do not attend the challenge day, regardless of any government guidance in place at that time.





Contact details on the day

If you are running late or are no longer able to attend the day please get in touch with the team by emailing Keira Sewell – ksewell@theiet.org or the IET Education Team - faraday@theiet.org

Thank you again for supporting IET Faraday. We'd love to hear how you found the challenge day – please get in touch and let us know!

About the IET Challenge Day

The IET Faraday Engineering Challenge Days are held at schools around the UK and have proved to be enormously popular with teachers and students alike. The Faraday Challenge Days give students the opportunity to research, design and make solutions to genuinely tough engineering problems.

Each IET Faraday Challenge Day involves six school teams, each made up of six 12-13 year olds (England and Wales Year 8, Scotland S1/2, Northern Ireland Year 9), ideally students who are interested in either Science, Design & Technology, Mathematics or Engineering.

Our partner for the 2020-21 challenge is the Future Flight Challenge but we cannot reveal the actual challenge as this is a national competition. You are not required to prepare anything for the day.

The Challenge is all about letting the students be creative and use their own problem-solving skills to explore their capabilities as engineers. Our aim is to encourage the students to work largely independently on their own ideas and we only help them where appropriate and/or necessary.

The winners of the main event will be awarded a prize for each team member and a trophy for their school. The top teams from across the UK will be invited to showcase their ideas at an event in June.

Your role on the day

The day is organised in **six** parts to model the ways in which engineers work on a project and students are assessed on various criteria throughout the activity to determine the winning team. The Challenge Leader will organise, lead and assess the challenge day.

The Challenge Leader will give you a role on the day. The most common roles for supporters are to respond to students' questions about careers in engineering, to pose questions which enable the teams to reflect on and develop their ideas, provide 'expert' advice, if necessary, under the direction of the Challenge Leader, and to help run the shop where students purchase materials, but your role may vary depending on the needs of the day. The day is very intense so there will be no time for you to do a formal presentation, but you may wish to talk to the teachers present about ways in which you could support their school(s) in the future.

Although you may be asked to provide expert advice, as guided by the Challenge Leader, the day has been designed to promote team working skills and independence through the allocated roles and responsibilities. It is important that the students work in their teams with as little guidance or support from adults as possible. Please do not over assist the students, instead encourage them to work through problems independently, maybe by asking questions or encouraging them to explain their approach or the immediate problem.





Structure of the day

Project brief covers the all-important engineering brief. Students are introduced to the idea of engineering in a real-world context and the 'client' brief. They are taken through the risk assessment for the day, the support available in the room and told about the assessment criteria the judge will use to decide on the winner of the competition. It is normally at this stage that you will be introduced by the Challenge Leader.

Planning is the section where students begin to explore ideas. Please leave the students alone for at least the first 10 minutes to allow them to explore potential ideas. After this feel free to chat briefly with the teams. Encourage them to think about the brief and pose questions to make them think about their ideas, but avoid spending too long with each team as they will begin to rely on your help.

Role allocation is where students are asked to decide which roles their team members will need to take on to achieve success. They should be left to decide this themselves under the guidance of the challenge leader.

Apprenticeship is where students complete a short engineering task to allow them to continue onto the project. Do not assist them at this point as it this apprenticeship which enables them to work through some ideas which will help them in the challenge.

Development is the longest section of the day. It is important that the students come up with their own ideas and start working effectively as a team. For success on the day they must have 'ownership' over their ideas. However, it is also important that they do not start down a road of 'failure' so you need to tread a fine line here to ensure they have a solution that has the potential to be successful and not giving them 'the answer'. It can be helpful to ask questions such as:

- 'Why have you chosen that design?'
- 'How will your design meet the brief from the Future Flight Challenge team?'
- 'What engineering skills are you using?'
- What could your team do to work more effectively?

Try and pose the question and allow the teams enough time to discuss them. Only offer the answer if you feel they are missing the point. This session is all about trialing, experimenting, manufacturing and working closely as a team.

Often questions can be dealt with and solved by referring the team to the 'How to ...' sheets, available.

If you feel that a team is not going to succeed then the Challenge Leader needs to be informed. It may be necessary to step in at this stage to encourage the whole team to become involved and work towards a solution. The Challenge Leader will be able to advise on the supporting resources available to ensure teams achieve success and guide you in determining how much support a team requires. The emphasis, however, needs to be on enabling the team to achieve success largely independently; we do not do it for them.

Presentation is about listening to their presentations and identifying strengths in their ideas and their working across the day. We can use these to give feedback to teams at the end, if there is time, so please do discuss your ideas with the Challenge Leader. Please feel free to sit with the Challenge Leader on the judges' table for the presentations but the Challenge Leader will moderate the scores across the UK and, although they may discuss their judgements with you, the final decision about the scores will be theirs.





Top tips

- Support the problem solving, don't solve the problem.
- Ask open questions such as 'why?' and 'what will happen if?' to help teams think through challenges.
- Be aware of, and refer teams to, the 'How to ...' sheets.
- If you are running the shop, be consistent with all the teams and stick to the agreed pricing.
- Be prepared to answer questions about your career and what engineers do.
- Enjoy the day!

Lunch

Please ensure that you bring a packed lunch and a drink on the day as we do not expect schools to provide us with refreshments.

Photos

IET Faraday does not have photographic consent for the challenge days so please **do not** take any photos or video of the event. You may be asked by the school to turn off your phone or not access it whilst students are in the room.

Smoking

All schools are now non-smoking sites. This includes all the school grounds including the car park. Please be aware that we are committed to minimizing our movement around the school as part of the safeguarding policy so opportunities to leave the room or go to a smoking area will not be available. In addition, if the school's safeguarding policy means we have to be accompanied at all times in the school you will not be able to leave the room alone. The teacher will not be able to accompany you if this means the Challenge Leader will be left alone with the students. If you do leave the school site you will be required to sign out and then sign back in on your return.

Ambassador for the IET

While attending a Faraday Challenge Day consider yourself to be an ambassador for the IET. Teachers and students will not make a distinction between IET staff and IET members and the Challenge Days are not an appropriate place to air any dissatisfaction with the organisation. Please dress appropriately - smart/casual.

Teacher packs will be provided for teachers participating in the event which give full information on IET resources available to support schools. If you are not familiar with IET schools resources you may be interested in looking at the [IET Faraday website](#), the [FIRST® LEGO® League \(FLL®\) website](#) and the [teacher resources](#) web area. The [schools liaison community](#) and the [resources for activity in schools](#) web area may also be of interest.

We look forward to seeing you on the day.





Schedule for the day

Please note, sometimes schools amend the timings slightly to fit in with their school and we may start earlier than 9.15, but we will always finish by 3pm

08:00	Challenge Leader arrives to set up
09:15	Register your team
09:30	Welcome and introduction
09:50	Project brief: Introduction to the Faraday Challenge
10:10	Planning: Identifying the problems and generating initial ideas
10:25	Team role selection: team decides on which roles they need
10:30	Engineering apprenticeship: teams complete a short engineering task
10:40	Development <ul style="list-style-type: none"> ▪ Shop opens ▪ Agree on final product designs
11:00	Break
11:10	Development continues <ul style="list-style-type: none"> ▪ Continue to design and modify where necessary ▪ Record progress in event log
12:20	Teams are briefed on the content of the presentation
12:30	Lunch – Tools down
13:00	Development: Final preparations <ul style="list-style-type: none"> ▪ Finalise product ▪ Prepare presentation with notes
13:30	<ul style="list-style-type: none"> ▪ Shop closes ▪ Submit accounting sheet to the Shop keeper ▪ Practise presentation
13:50	Presentation <ul style="list-style-type: none"> • Teams present their designs to the judge(s)
14:45	Award ceremony with final feedback and evaluation of the day
15:00	Engineering teams depart
15:45	Challenge Leader departs by this point (actual time depends on pack up requirements)

