GETTING GIRLS INTO ENGINEERING:
A PRACTICAL GUIDE
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Introduction

The Problem

Although on average girls outperform boys in all subject areas at key stages of assessment, proportionally fewer girls than boys progress to do SET (science, engineering and technology) subjects at A level and in higher education.

Currently, girls make up under half (42.4%) of A level students in STEM (science technology, engineering and mathematics) subjects, women make up approximately a third (33.5%) of all higher education students in SET disciplines and only 14% of engineering undergraduates. Of those women who acquire any SET discipline at degree level, only 27% pursue a SET career compared to 54% of male SET graduates.

The UK and the wider world are facing a shortage of engineers and scientists; the very people needed to preserve and improve our planet and our well-being.

According to the Confederation of British Industry (CBI), the number of UK students graduating in SET subjects needs to increase by 97,000 by 2014 in order to keep up with demand.

However, even though the number of young people opting to take degrees has increased by an encouraging 60%, the number of UK engineering students has not changed in the last ten years.

To increase the number of home-grown engineers and scientists we need to look for potential students among populations not historically known for providing them; groups such as women and non-white UK populations.

By drawing on a diverse talent pool, the UK engineering industry could build a workforce with a diverse knowledge and understanding of global markets and position itself as a strong and successful player in the increasingly global marketplace.

The LEP

The London Engineering Project is a project led by the Royal Academy of Engineering to encourage girls, students with no family history of higher education, adult learners and black and ethnic minority (BME) students into higher education after school, and in particular to consider engineering as a career.

It is a partnership of national science outreach organisations, higher education institutions (HEIs) and industrial sponsors that aims to increase cultural and gender diversity in engineering education, starting at the beginning of the education ladder and continuing to the top.

The Project has been supported by Government and industry and has worked in 40 primary schools and secondary schools in south and east London, in 3 HEIs and also with Thames Water, EDF Energy, Transport for London and Tube Lines.
A team of dynamic and ethnically diverse female and male fieldworkers deliver a complex set of activities in schools, including STEM (science, technology, engineering, mathematics) project days and after-school science clubs, residential courses for secondary students, engineering summer schools and science and engineering competitions.

All the activities have by necessity had to be gender inclusive, and to ensure this was the case the UK Resource Centre for Women in SET was co-opted onto the Project.

More information is available at: www.thelep.org.uk

The UKRC

The UK Resource Centre for Women in SET (UKRC) works to significantly improve the participation and position of women in science, engineering and technology occupations in industry, research, academia, education and public service.

It is the UK's leading provider of information and advice to employers and organisations in the SET sectors, supporting women entering, returning and progressing in these fields to benefit the future productivity of the UK and the lifetime earnings and career aspirations of women employees.

The UKRC works with a wide range of organisations to deliver services and develop new initiatives enabling cultural and organisational change.

As a partner in the London Engineering Project, the UKRC provided a focus on the development of effective practices to successfully engage girls from under-represented groups in engineering. The approach addressed both gender inclusion and engaging other under-represented groups to ensure that diversity remained at the core. It involved a UKRC field worker within the LEP project team who worked closely with all project partners to build commitment and confidence in identifying how effective gender equality practice could be included in their work and to support them in the implementation of this practice.

Pivotal to the development of the LEP's work practices was the UKRC Gender Inclusion Training at the beginning of the project. This training raised awareness and understanding of the issues surrounding girls and engineering among the LEP team and thus laid the foundations of the project from the very start.

More information is available at: www.ukrc4setwomen.org

The Aim

The aim of this guide is to share the effective practice the UKRC has developed in the area of gender inclusion with the LEP.

Throughout the project, the LEP focused on working with students form BME backgrounds, students who did not have a family history of participation in higher education and girls, with a specific focus on Pakistani/Bangladeshi girls as the most under-represented in UK engineering.
Focusing on girls can cause concerns, particularly as to whether this approach puts boys off. The UKRC has found that in practice it does not. What has become apparent is that while good practice provides improvements for all students, poor practice disproportionately affects those students who are already the most disenfranchised.

For example, a school assembly presentation to promote a design-and-make solar car challenge delivered by a young woman who shares her enthusiasm for motor sports will result in both girls and boys queuing to take part. An uninspiring talk providing the same information will still result in boys signing up, but not necessarily girls.

Much of what follows is straightforward and could even be considered obvious or simplistic, but addressing details such as whether the number of boys in a visual (e.g. PowerPoint) presentation is the same as the number of girls does matter, and paying attention to these details works in helping to engage girls.

To illustrate this, it is worth mentioning that most LEP activities have a minimum of 50% participation by girls. BME students account for approximately 80% of participants, reflecting the intake of the schools involved.

While the focus of the UKRC has been to ensure participation of girls in LEP activities and thereby encourage more girls to consider a career in engineering, the principles developed and utilised could equally be applied to any under-represented group in any sector. For example, having young men staff a childcare stall at a careers day is equally encouraging to male students as is seeing an engineering stall staffed by young women to female students.

It is important to point out that all the partners in the LEP took part in the UKRC Gender Inclusion Training which promotes a thorough understanding of the issues surrounding girls and women in STEM and the effective actions which can be taken to address these issues. Tailored training was also given to those who worked with the Project including the student ambassadors, HEI marketing departments and the teachers who facilitated after-school clubs.

These guidelines include the Gender Inclusion and Cultural Diversity Guidelines developed by the LEP team for their everyday use and other publicity materials as examples of designs conceived before and after the UKRC Gender Inclusion Training, including a leaflet for parents and a flyer for an event called Engineering Islam which was particularly useful in engaging Pakistani and Bangladeshi girls.

We hope you find this useful.
The Approach

Workshops and training

The UKRC has provided tailored gender equality training to all those involved in the project: the student ambassadors, the marketing departments allied to the partner organisations, HEI engineering departments, the LEP fieldworkers and the teachers running the after-school science and engineering clubs. Training other senior staff within LEP partner organisations was also important to ensure high level support and understanding of the gender issues which would be important to the success of the project.

The aim of training was to:

- Raise awareness of factors influencing access to education, training and careers in STEM for girls and women
- Identify ways of inspiring girls and women in STEM areas
- Identify support mechanisms required to ensure success for girls and women in STEM
- Share good practice in STEM education
- Identify gender inclusion tools to be developed for use by LEP partners

UKRC training sessions are interactive and tailored to the needs of the participants. For example, marketing departments received training about the promotion of activities to girls, while teachers’ sessions focused on effective teaching practices. A sample handout from these training sessions is included.

Before the day begins, the trainers have already done their homework about the organisation that they are engaging with. They begin the session by ascertaining the participants’ goals and identifying their perceived barriers to the participation of women in engineering. Throughout the session, the UKRC trainers give examples of tried and tested methods of targeting girls without excluding boys and look for examples of effective practice already within the organisation. Depending upon the group’s needs, they may also discuss the organisation’s website and marketing resources and ways of improving them with respect to gender inclusion, or look at practical approaches to engaging girls in engineering activities.
The training allows the participants to explore the issues around why girls may not go into engineering; reasons such as peer pressure, poor career advice, stereotypical preconceptions and college environment. They are encouraged to devise ways of effectively combating these barriers along with the UKRC trainers, which gives them ownership of the approach and their new ways of thinking and working.

Participants are encouraged to take the lessons learnt away with them and re-evaluate their gender inclusion practices. This might mean reviewing all marketing, teaching and support materials and perhaps playing a more pro-active role in the production of new ones.

The sessions received positive feedback:

“I attended the session hoping to find a way of re-launching our after school club and get back in touch with the LEP team. In the event, it was quite the best and most inspiring INSET day in my teaching experience. The session connected so many strands of our work here that we now have an engineering programme outlined through each year of the college.”

Mike Wilcock, Bacon’s Technology College, Southwark

“The training made me understand why it is important for girls to be encouraged and what I could do. I now look at everything in a completely different way.”

David Lakin, LEP fieldworker
In practice

Learning environment

It is very important that the girls have the same learning environment, support and encouragement as the boys. To that end, it is always ensured at LEP events and activities that girls are not fewer in number. The most straightforward way to ensure this is to ask the teachers to send equal numbers of boys and girls.

The practicalities can be addressed as necessary.

For example: one teacher said,

“But I allocate my twenty residential places on a first-come-first-served basis.”

We suggested the teacher have 10 first-come-first-served places for boys and 10 first-come-first-served places for girls.

Activities need to be appealing to both girls and boys. If a chosen activity is more likely to be more attractive to the boys than the girls, it can be adapted.

For example:

A bridge building exercise may be more appealing to the boys than the girls; unless the bridge in question is Waterloo Bridge. The original Waterloo Bridge was demolished in the 1920s, and a new span, which was reportedly built largely by women, was built between 1942 and 1945.

Activities that are put into a societal, environmental or ethical context will instantly engage girls more than ones which are not, without disengaging the boys.

For example:

In an electronics activity, rather than simply asking participants to introduce a light bulb into a circuit, ask them to think about how they might incorporate into a deaf person’s home, a means of alerting them to the fact that their doorbell is ringing.

In a robotics workshop which runs at LSBU, students are encouraged to consider the ethical issues surrounding the use of robots in the home and relate this to the ‘intelligence’ level of the robot in question.

Consider the use of images in all teaching and learning resources.

For example:

Are there the same number of girls and boys/men and women in teaching guides, presentations and posters?
Consider the use of language in all teaching and learning resources.

*For example:*

*Have you used the term ‘boys and girls’ throughout a document? If so, change it so that ‘girls and boys’ is used also and equally.*

*When addressing a mixed group, avoid using the term ‘guys’.*

*Whenever possible, to challenge the idea that engineers are male, refer to them as ‘she’.*

Ensure that girls participate equally in all aspects of an activity.

*For example:*

*Ensure that they have a go at hands-on activities, are chosen as leaders, are given equal turns at using equipment and are allowed to contribute orally to the same degree as boys during discussion sessions.*

Try to use female role models.

*For example:*

*Tanya Budd, winner of the Young Engineer for Britain Award in 2005, is a good role model to use. She used to go sailing with her father and realised that if he fell overboard and was knocked unconscious she did not have the strength to haul him back into the boat. She therefore devised the ‘Hypo Hoist’, a simple overboard recovery device which is now in production.*

By consciously citing Tanya as an example of an engineer, as opposed to Isambard Kingdom Brunel for instance, we are providing a role model that the students can more easily relate to and who is more relevant to girls.

**Resources and materials**

The guidelines applying to images and language have been discussed already, and these apply to all resources and materials.

In addition, attention must be paid to design issues such as colour. Gender-neutral colours such as orange, green and purple will alienate neither girls nor boys. On the other hand, a publication that is predominantly pink is seen to be aimed specifically at girls, and one that is blue or grey at boys.

- **The parents’ leaflet**

Recognising the huge influence that parents and carers have on young people, the parents’ leaflet is designed to encourage parents and carers to support their daughters if they show an interest in engineering. As parents hold the same misconceptions as students regarding engineering as a profession, it is important to dispel the myths and promote the often very rewarding realities. For those parents who want to be more proactive, included is a section of simple actions to promote and foster an interest in engineering.
Studies within science classrooms have found that teachers' tend to:

- Call on boys more than girls.
- Accept boys' called out answers more than girls.
- Allow boys more talking time than girls.
- Allow themselves to be interrupted more easily when girls are speaking than when boys are speaking.
- Tell boys how to solve problems, but solve the problems for girls: learned helplessness.
- Give boys more criticism and corrective feedback.
- Give girls fewer experiences with science instruments and equipments.
- Allow boys to have more time with scarce classroom resources such as computers or science equipment.
- Assign different tasks on the basis of gender.
- Permit students to make gender-biased behaviours or comments to each other.
Would you like further information on a career in Engineering?

If so, please feel welcome to contact us at the London Engineering Project.
You can call Heather on 0207 7171 670
Or email her on heather@thelep.org.uk

For example, we could help your daughter...
→ find out more about what subjects to study
→ join a local club and try some hands-on engineering activities
→ find out more about all the possible careers in engineering
→ get in touch with a woman engineer who can tell her what it’s like to be an engineer

Or check out these websites:
www.livejournals.org.uk  www.scenta.co.uk

For general careers information you can try:
www.connexions-direct.com/jobs4u

LONDON ENGINEERING PROJECT
London Engineering Project
Rm.2C09, South Bank Technopark
90 London Road
London SE1 6LN
lepi@raeng.org.uk

Do you want your daughter to have an exciting and well paid career?
It has been very rewarding to see how well received the leaflet has been. Teachers, careers professionals, students and parents have all given very positive feedback.

While the leaflet is aimed at the parents and carers of girls, there is a specific remit to be inclusive of parents and carers of Pakistani and Bangladeshi girls as these are the least represented in UK engineering. Therefore, it is borne in mind that many people reading the leaflet may have English as their second language.

On the front cover are a range of positive images featuring female students engaged in hands-on engineering activities. A young woman features as an inspirational figure and a question appears which should elicit a positive response from the reader.

The most commented upon aspect of the leaflet has been the mention of salaries. Both students and parents have been astonished to see the salary comparisons between engineering and other jobs, and responses to the leaflet have cited salary as a strong positive influence in choosing engineering as a career.

Quotes within the leaflet challenge the misconceptions allied to an engineering career, illustrate the unrecognised benefits and were specifically sought from those whose names would illustrate they had an ethnic background.

Engineering examples that reflect the environmental and social applications were chosen as well as examples which are fun or contemporary such as roller-coasters and iPODs.

The suggestions web gives a range of ideas that parents can realistically use to inspire their daughter, whether she is in primary or secondary education.

Where contact details are given, a female contact is supplied intentionally.

The amount of further information included is limited so as not to be overwhelming.

Copies of the parents’ leaflet can be downloaded from: [www.thelep.org.uk/teachers/encouraginggirlstoparticipate](http://www.thelep.org.uk/teachers/encouraginggirlstoparticipate)

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**Engineering Islam event flyer**

Recognising that girls from Pakistani and Bangladeshi backgrounds are the most under-represented in UK engineering, and also to help counteract the negative image of Islamic communities and provide a positive focus for the young, a female, Muslim LEP fieldworker devised this event with the distinct aim of attracting the Muslim community.

The front-page image on the event’s advertising flyer is a very visually-pleasing example of Islamic engineering, and the colours in the design were chosen so that girls realised it was aimed at them.
The LEP fieldworker deliberately put her full name on the front, with a contact number, to reassure any members of the community that their cultural needs would be met.

The engineering examples selected are culturally appropriate and it includes cultural references to Ramadan and Iftar. It also makes clear that a prayer room will be available and that families are invited.

The flyer successfully conveys that the event has been organised by a member of the community at which it is aimed.

The back cover is beautiful and culturally appropriate, emphasising the creative side of engineering.

At the event itself, the LEP ensured there were female student ambassadors from BME backgrounds.

Successful outcomes of this event, which ran for 2 consecutive years, were:

- A high student attendance rate which increased in the second year
- Whole team involvement providing a range of different influences
- The first year had support from the Muslim Council of Britain
- Second year activities were supported by 1001 Inventions, a UK-based, non-political, non-religious project from the Foundation for Science, Technology and Civilization (FSTC)
- STEM Ambassadors (previously known as Science and Engineering Ambassadors/SEAs) attended in the second year, providing an even wider group of influential mentors with a broad range of careers and backgrounds
- Feedback forms stated that the students had a fun time whilst learning about Islamic engineering feats and trying the hands-on activities.

“Engineering Islam was a really diverse and interesting event bringing together not only Muslims but also people from other religious backgrounds to work on challenging activities. It was very encouraging to see youngsters successfully working in teams and enjoying themselves.”

Usman Saeed, STEM Ambassador
Did you know:

- The first hospital was built in 872CE in Cairo?
- Abbas Ibn Firnas made the first real attempt to fly in 852 CE?
- 600 years before Braille was invented a Syrian had made his own system?

These things and more brought to you by the Islamic world!

Highlights:

- MARK the end of Ramadan and LEARN ABOUT the ACHIEVEMENTS of the Islamic world and its contribution to Science, Technology, Engineering and Mathematics.
- Take part in FUN ACTIVITIES.
- Join us for Iftar - PRAYER ROOMS will be available.
- All members of the FAMILY WELCOME

Find out about the Islamic world’s achievements at our special Iftar event!

The Royal Academy of Engineering
3 Carlton House Terrace
London
SW1Y 5DG
Subsequently, the University of Sussex ran their own version of this event which was equally successful.

- **The Young Engineers posters**

  This section looks at resources used by Young Engineers, the national network of after-school engineering clubs, before and after their LEP/UKRC assessment and training.

  We would like to thank Young Engineers for allowing their work to be used in this document.

*The ‘before’ poster*

This poster had been used nationwide to attract young people to their after-school clubs.

A preliminary headcount shows this poster to contain the following young people:

- BME females: 4
- BME males: 3
- White females: 4
- White males: 17

There is clearly a predominance of white boys.

Also, the five questions contained within the poster may well elicit positive responses from students who have already joined a Young Engineers club, but negative responses from students within the LEP’s target groups who haven’t yet taken part in any LEP activities.

Taking the second question as a particular example: *Could you see yourself as an engineer?*

Many school-aged students lack an understanding of what an engineer actually does, and any idea they do have is very limited and stereotypical. Therefore, if asked whether they could see themselves as an engineer, they could perceive the question as whether they could see themselves as a large, white man covered in oil; with the response being an emphatic ‘no’.

*The ‘after’ posters*

By contrast, the new set of four posters that Young Engineers now use to promote their clubs contain positive images of engineering in practice, a variety of interesting applications and images of young people of different race, gender and age all enjoying its benefits.

There are four themes: the environment, sports, medicine and entertainment, and each poster demonstrates how engineering impacts on our lives in one of these areas.
The theme of medicine was specifically chosen to attract the interest of girls from cultural backgrounds where medicine is a highly valued career option.

Looking at the environmentally-themed poster in more detail, the image of the disaster was carefully chosen. It is of a recent event in England so has relevance to UK students and is not perpetrating stereotypes of other countries. The image also illustrates the life-saving aspects of engineering, highlighting the human and social benefits.

Although illustrating something that is traditionally considered to be of interest to boys, the sports-themed poster depicts a positive image of a girl enjoying football and highlights the engineering surrounding sports.

In all the posters, the images are natural and inspirational and the strap line ‘Consider the possibilities…’ introduces the creative aspect of engineering, with other questions employed to further illustrate its social and practical uses.

This series of posters has been very positively received, with the Equality and Human Rights Commission requesting sets as examples of effective practice.

The posters can be found at: www.youngeng.org
Are you a hands on person?

Could you see yourself as an Engineer?

Do you see yourself as a young inventor?

Have you or will you choose DT for GCSE?

Are you thinking of going into higher education?

If your answer is YES then why not join a Young Engineers Club and become a young engineer.

Ask your teacher to contact the London Engineering Project and join today

For more information go to www.thelep.org.uk or www.youngeng.org
The role of the ambassadors

The student ambassadors have contributed in no small part to the LEP’s success. The ambassadors provide a pool of young, inspirational, enthusiastic role models who assist at LEP activities. Taken from the Faculty of Engineering, Science and the Built Environment at London South Bank University (LSBU), the ambassadors reflect the diverse ethnic backgrounds of the students in LEP schools and being just a few years older are easy for them to identify with.

For example:

To encourage the Young Engineers clubs to participate in the Green Power Challenge, electric car racing for schools, the LEP fieldworkers took the clubs to the final race day. To balance the fact that the LEP students would be in a racial minority, the vast majority of attendees being white boys, female BME ambassadors with a good knowledge of mechanics were selected to help at this particular event and the students were given the opportunity to chat with a winning all-girl team.

LSBU coordinates the selection of ambassadors; a process which is stringent on many levels. Ambassadors are required to fulfil criteria relating to personality, gender and racial awareness and dedication to the ideals of the Project.

Successful applicants are given full training in gender and racial equality, and to reflect their training, dedication and intrinsic worth, they receive a good hourly rate of pay.
Introduction to the guidelines

The guidelines which follow were devised as part of the LEP assessment of gender and cultural inclusiveness for their own activities and materials.

The students that the LEP works with are from inner-city schools in south and east London and therefore every effort was made to use references that were appropriate, in terms of culture, age and region.

However, recognising their limitations, the LEP team took every opportunity to ask the students themselves for their opinions and thanks must go to all the students and work experience students, all from LEP schools, who continuously gave valuable feedback.

The aim was that by following the guidelines, all fieldworkers would be able to assess their own activities and materials and ensure they fulfilled the LEP’s approach with respect to gender and cultural inclusion.

These guidelines are specific to the work of the LEP, but please do feel welcome to use them as a starting point from which to devise your own.

The UKRC would like to thank the LEP team, in particular the LEP fieldworkers, for their dedication, hard work and willingness to try new approaches, without which there would not be such a plethora of effective practice examples to share.
### Heading
These comments are designed to prompt you if you are unsure what you should be evaluating.

### Examples
These are good practice examples, chosen to illustrate comments.

#### Activity

*Is the activity traditionally appealing to both genders and students from different ethnic backgrounds?*

*Or traditionally boys? (e.g. cars, rockets, weapons, trains etc...) If so, what have you done to ensure it equally appeals to girls? Could you change/adapt the activity to ensure the interest of girls? If so what have you done to ensure interest from BME students?*

*Or do you need to devise/find a new activity? Incorporate design/decoration into activity*

- Making toothpaste
- Build a tower from spaghetti and marshmallows
- Cars- design and build a car that has to transport an egg safely down a ramp into a simulated ‘crash’, thus incorporating safety design aspect of engineering
- Bridges and Buildings – use examples from around the world, emphasise where they are from the perhaps event the company or architect involved in the bridge design or use local examples of new local structures like the proposed aquatic centre for the Olympics design by Zaha Hadid.
- Make and decorate torch
- Give students the opportunity to be creative and put their own design to their product(s) by providing different materials or varying colours and textures.

#### Context

*It is important for girls to understand why they are doing something/how it contributes to society.*

*It is important for students to be able to identify with the activity in some way.*

- Instead of ‘add a light to an existing bell circuit’ present them with the challenge ‘how would you adapt the bell circuit in a deaf person’s home to alert them that someone was at the door?’
- Produce an alarm that reminds them of a specific date or time in the religious calendar.
- Instead of ‘you have to build a bridge’, provide a reason i.e., you need to get
<table>
<thead>
<tr>
<th>Have you provided a context or scenario?</th>
<th>aid to a village; the road has been washed away etc…</th>
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</thead>
<tbody>
<tr>
<td>Do ensure the scenario has a positive message</td>
<td>• Use examples of where this could be useful in a recent natural disaster, locally and/or internationally.</td>
</tr>
<tr>
<td>Is it relevant to the students we are aiming at?</td>
<td>• An activity based on trams in South London</td>
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<table>
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<tr>
<th>Images</th>
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<tbody>
<tr>
<td>Monitor number of female: male images.</td>
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<tr>
<td>Use images of girls/women.</td>
</tr>
<tr>
<td>Use images of BME students/role models.</td>
</tr>
<tr>
<td>Images of girls/BME students doing hands-on activities, looking engaged.</td>
</tr>
<tr>
<td>Use images of female/BME role models which overtly demonstrate their occupation.</td>
</tr>
<tr>
<td>Avoid images where males are active and females are passively looking on.</td>
</tr>
<tr>
<td>If using images of students, ensure the ages of students reflect the target audience.</td>
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<tr>
<th>Names</th>
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<tr>
<td>Monitor number of girls names: boys names.</td>
</tr>
<tr>
<td>Use names that reflect all cultures.</td>
</tr>
<tr>
<td>Ensure female names are equally put first.</td>
</tr>
<tr>
<td>• Doris and Omar</td>
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</tbody>
</table>
Examples/references

Challenge gender stereotypes
Use examples which reflect all cultures.

Challenge cultural stereotypes.
Use global examples.
Use female/BME examples where possible.

Can the students relate to the activity? A competition to redesign an airport lounge may not be appropriate for inner-city children who have not had the opportunity to travel abroad.

<table>
<thead>
<tr>
<th>Examples/references</th>
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</thead>
<tbody>
<tr>
<td>• King Henrys Castle changed to Queen Isabella’s Castle</td>
<td>• Waterloo Bridge (built by women)</td>
</tr>
<tr>
<td>• Using Diwali as an example of a festival—not Xmas</td>
<td>• Use the New Orleans floods as an example of a natural example, as oppose to famine in Africa</td>
</tr>
<tr>
<td>• Use Diwali as an example of a festival—not Xmas</td>
<td>• Pyramids, chocolate from South America</td>
</tr>
<tr>
<td>• Use the New Orleans floods as an example of a natural example, as oppose to famine in Africa</td>
<td>• Famous architect—Zaha Hadid</td>
</tr>
<tr>
<td>• Be creative—take them on a trip to a local airport. Or do something else.</td>
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</tbody>
</table>

Language

Do refer to unspecified engineers etc as ‘she’—challenge stereotypes!

Ensure female pro-nouns are equally put first.

Avoid referring to girls or mixed groups as ‘guys’.

Avoid referring to women as ‘girls’.

If asking questions, consider the likely answer from our target groups.

<table>
<thead>
<tr>
<th>Language</th>
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<tbody>
<tr>
<td>• Female and male engineers</td>
<td>• Use ‘Morning all!’, everyone, folks</td>
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<tr>
<td></td>
<td>• Replace ‘do you see yourself as an Engineer?’, which girls are likely to respond to with ‘no!’ with ‘do you like doing hands-on activities?’ which is more likely to produce a positive response</td>
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<tr>
<td>Design</td>
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<td>--------</td>
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<tr>
<td>Students will understand that a publication that is predominately pink is aimed at girls; predominately blue/grey is aimed at boys.</td>
<td>• Go through your publication, note what colours are used and count how often.</td>
</tr>
<tr>
<td>To avoid this, use more gender-neutral colours such as orange/bright green/purple</td>
<td>• If you find a predominance of male-identified colours that you cannot change, i.e. company logo, sky, sea, provide balance by ensuring that looks most inviting? you have female-identified colours where you can, i.e. boarders, in-fill</td>
</tr>
<tr>
<td>To ensure girls feel welcome in an activity they may already feel is aimed at boys, overtly use colours that are girl-identified</td>
<td>• Consider alternative fonts and presentation styles.</td>
</tr>
<tr>
<td>Font/overall appearance—does your publication look friendly?</td>
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<tr>
<th>Teaching methods</th>
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</table>
| Ensure girls/BME students participate equally in all parts of activity such as:  
  • leading groups  
  • hands-on work  
  • turns at using equipment i.e. glue guns, drills | • In group work rotate the roles so everyone gets a turn to be engineer/note taker etc  
• Allocate roles to ensure girls/BME students take active part  
• Have girl-only groups |
| Studies have shown that girls are more comfortable in answering questions if they have had an opportunity to reflect. | • Ask a colleague to observe you  
• Ask questions alternatively girl/boy  
• Monitor how often girls/BME students answer questions  
• Give students a minute to jot down answers before they answer |

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<thead>
<tr>
<th>Freebies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Will it appeal equally to girls and boys?</td>
<td>• Orange USB wrist-band</td>
</tr>
</tbody>
</table>