40 BY 40: GENDER EQUITY IN ENGINEERING AND TECHNOLOGY EDUCATION

Supporting Evidence

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Current situation

Workforce growth

Improving women's participation in the engineering and technology workforce is vital for the health of the UK's engineering and technology sector, and consequently, the UK economy. Almost every part of our economy and society benefits from a thriving engineering and technology workforce.

Skills England has found cross-cutting demand for engineering skills across the government's 10 priority sectors[1]. Further analysis found that 14 engineering and technology occupations are in 'critical demand' (993,500 people work in these occupations) and that 35 engineering and technology occupations are in 'elevated demand' (2,678,600 people work in these)[2]. Without a workforce of sufficient size and diversity of thought, the UK risks failing to deliver the Modern Industrial Strategy and major projects stretching into the future, like Northern Powerhouse Rail and Sizewell C.

Girls' representation in engineering and technology pathways

Non-compulsory subjects

Gender inequity is visible across most routes into engineering and technology. It becomes clear when children start choosing subjects.

- 22.8% of Computing GCSE entries were by girls (England, Wales and Northern Ireland, 2026)[3]
- 23.7% of Physics A Level entries were by girls (England, Wales and Northern Ireland, 2026)[4]
- 18.9% of Computing A Level entries were female (England, Northern Ireland and Wales, 2026)[5]
- Male students outnumber female students in 19 of the 20 STEM subjects at GCSE (England, Northern Ireland and Wales, 2026)[6]

Gender imbalances are particularly pronounced in some vocational pathways.

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[1] Skills England (2025) Assessment of priority skills to 2030 - GOV.UK
[2] Gov.uk (2025) Release home - Occupations in demand - Explore education statistics - GOV.UK
[3] EngineeringUK (2026) GCSE and Scottish National 5 results day briefing 2026
[4] EngineeringUK (2026) A level and Scottish Highers results 2026 report
[5] EngineeringUK (2026) A level and Scottish Highers results 2026 report
[6] EngineeringUK (2026) GCSE and Scottish National 5 results day briefing 2026

- Among 16- to 18-year-olds taking engineering and technology-related vocational qualifications (other than T Levels) in England in 2024/25, 12.5% were girls[7]
- 13% of engineering and tech-related T Level students were female (England 2025). This varied by course: 2% in Building Services Engineering for Construction and 5% for Onsite Construction, to 33% for Agriculture, Land Management and Production and 87% for Craft and Design[8]
- 10.5% of 2024/25 apprenticeship starters up to 24 years old were young women (England, 2025), highest in Digital technology (24%) and lowest in Engineering and manufacturing and Construction (8 to 9%)[9]

At undergraduate degree stage:

- Women were under-represented among engineering and technology degree entrants, of whom 20.4% were women, compared to 60.1% for all other subjects (2023/24)[10]
- Among graduates surveyed 15 months after completing their qualification, 51.3% of female students who graduated with engineering and technology degrees in 2022/23 went on to work in an engineering and technology occupation, compared to 61.9% of men[11]
- Among those who graduated with degrees in other subjects, the proportion of women who went on to work in engineering and technology occupations despite not having a related degree was 4.5%, compared to 11.3% for men with similar degree backgrounds[12]

Some trends in engineering and technology-related subjects suggest some progress towards greater equality. The percentage of young women taking Computing A Level has increased from 6% in 2013 to around 19% in 2026 and the number of girls taking A Level Physics was the highest ever[13].

However, projection analysis has shown that if we continue at the current rate of entries, equal numbers taking Physics A Level, for example, would not be reached until 2070. For Computer Science, it would be 2103[14].

40 by 40: how many girls are currently in education pathways to engineering and technology

As set out in '40 by 40: Gender equity in engineering and technology education, a blueprint for action', the Gender Pathways collective is working to significantly increase the number of girls and young women in education pathways to engineering and technology by the age of 18.

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[7] EngineeringUK analysis of Entries - vocational qualifications by subject and student characteristics (single academic year), Data set from A level and other 16 to 18 results - Explore education statistics - GOV.UK
[8] EngineeringUK (2026), T Levels results 2026
[9] EngineeringUK analysis of the Department for Education's apprenticeships data.
[10] EngineeringUK (2026), Engineering and tech in higher education
[11] EngineeringUK analysis of HESA Graduate Outcomes data
[12] EngineeringUK analysis of HESA Graduate Outcomes data
[13] Natasha Plaister for FFT education datalab (2025), Has gender balance in A level physics improved?
[14] Natasha Plaister for FFT education datalab (2025), Has gender balance in A level physics improved?

The education pathways into engineering and technology we refer to include:

- relevant optional STEM subjects at GCSE level
- post-16 education up to the age of 18 including relevant STEM subjects at A Level, T Levels in engineering and technology related subjects, and vocational qualifications like BTECs in engineering, construction or digital subjects, or in future V Levels
- engineering and technology apprenticeships up to age 18

The 40 by 40 target aims for girls to make up at least 40% of entries into these pathways by 2040. It focuses on non-compulsory subjects and routes that are most likely to lead to careers in engineering and technology, and where girls are currently under-represented, with entries below 40%. This means it does not include compulsory GCSE subjects such as maths and science but does include optional subjects and post-16 routes where subject choices can shape progression into engineering and technology careers.

Table 1 (see appendix) brings together available participation data across key engineering and technology-related education pathways up to age 18. It shows both the overall scale of participation and the number and proportion of girls in each route, highlighting where girls are most under-represented and where there may be stronger foundations to build on.

Barriers to girls' entering engineering and technology-related pathways

Stereotyping, sexism and misogyny

From a young age, children face expectations about gender roles. These can limit subject choices and career aspirations[15] and are reinforced by the current sciences curriculum (see A new curriculum and assessment structure).

Fewer women in engineering and technology means fewer female role models, and male-dominated industries can be off-putting. A 2025 survey found that 43% of girls aged 11 to 16 expected it would be hard to progress in male-dominated industries. This rose to 66% among 17- to 21-year-olds[16].

Sexism is widespread and can be more prevalent where there are more boys or young men, including in STEM education settings. ASPIRES 3 survey analysis found higher reported sexism for undergraduates in physics (50%) and engineering (30%) than in non-STEM fields[17]. Unfortunately, there is evidence that sexism is increasingly becoming outright misogyny in schools[18].

[15] Institute of Physics (2019), Gender stereotypes and their effect on young people
[16] Girlguiding (2025), Girls' attitudes survey 2025
[17] ASPIRES 3. Young People's STEM Trajectories, Age 10-22: PHYSICS - UCL Discovery
[18] NASUWT | Teachers cry for help as misogyny in schools hits new high

Lower engagement with and enjoyment of engineering and technology-related subjects

Enjoyment is the most likely reason students give for being interested in a STEM career[19]. It is therefore concerning that, at Key Stage 3, girls rank every STEM subject lower for enjoyment than boys[20]. At Key Stage 4, girls rank their enjoyment of several engineering and technology-related subjects lower than boys: maths, design and technology, physics and computing[21].

Girls also express less interest in engineering careers compared to boys. At age 10, 11% of girls aspire to engineering careers, compared with 44% of boys[22]. Of children in years 7 to 13, 29% of girls and 63% of boys said they were interested in a future career involving engineering[23].

Lower awareness of the variety of engineering and technology careers, their value and link to school subjects

Girls are more likely than boys to be motivated to pursue a STEM career by a desire to help people or society[24]. They also report higher interest than boys in a range of issues associated with the environment – including climate change and biodiversity loss[25].

Engineering and technology careers are varied[26] and rapidly evolving[27]. Communicating this could help engage girls' interests. However, girls' awareness of the variety of engineering and technology careers is lower than boys'.

Of children in years 7 to 9, 33% of girls said they knew at least a fair amount about the different things engineers do in their jobs, compared with 50% of boys. Among years 10 to 13, the equivalent figures were 23% and 40% for girls and boys respectively[28].

Boys also reported more positive views than girls in their perception of engineering careers as creative (68% of girls and 76% of boys agreed that engineering is a career that allows people to be creative). Fewer girls than boys agreed that engineering is a career that allows people to work across different roles (59% of girls and 73% of boys) [29].

Lower confidence to pursue engineering and technology-related subjects and pathways

Girls report lower confidence in their abilities in engineering and technology-related subjects. The factor most commonly reported by both girls and boys in years 7 to 9 as putting them off from

[19] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[20] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[21] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[22] Archer, L., Moote, J., MacLeod, E., Francis, B., & DeWitt, J. (2020). ASPIRES 2: Young people's science and career aspirations, age 10-19. London: UCL Institute of Education
[23] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[24] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[25] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[26] This is Engineering | This is Engineering
[27] Old Skills, New Skills - what is changing in the UK labour market? - IFOW
[28] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[29] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023

learning science at school is that 'It can be difficult'. However, a higher proportion of girls did so (50% of girls versus 31% of boys)[30].

This is despite girls' high attainment in relevant subjects. For example, in 2026, girls outperformed boys at GCSE level in 12 of 20 STEM subjects at grade 7/A and above in England, Wales and Northern Ireland[31]. Girls' average grades compared particularly well to boys' in construction, agriculture and land use and engineering[32]. This is sustained through to engineering and technology undergraduate degree level, where a higher proportion of women get firsts (42.4%) compared to men (37.5%)[33].

Policy levers for change

Schools and colleges, parents and family, peers, community youth services employers, and outreach organisations and wider society can all influence children's and young people's interactions with and views of their education and careers (Figure 1). The evidence in this paper focuses on the education system up to age 18. Out-of-scope issues include family-focused interventions outside the education system, gender bias in AI tools that support young people[34] and employers' recruitment and retention practices.

Existing legislation, guidance and advice to schools and colleges relating to gender equity

Existing legislation and advice to schools and colleges aim to support equity, including gender equity. Under the **Public Sector Equality Duty – as a result of the Equality Act 2010** – public bodies are required to:

- have due regard to the need to eliminate discrimination and other conduct prohibited by the Equality Act
- advance equality of opportunity between people who share a protected characteristic and people who do not share it, and
- foster good relations across all characteristics

The Department for Education last published guidance for schools on the Equality Act in 2014[35] and the Equality and Human Rights Commission published guidance for schools on the Public Sector Equality Duty in 2022[36]. There is also guidance on the Public Sector Equality Duty from the

[30] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[31] EngineeringUK (2026), GCSE and Scottish National 5 results
[32] EngineeringUK (2026), GCSE and Scottish National 5 results
[33] EngineeringUK (2026), Engineering and technology in higher education
[34] Ada Lovelace Institute and the Nuffield Foundation (2026), Navigating the future
[35] DfE (2014), The Equality Act 2010: advice for schools
[36] Equality and Human Rights Commission (2022), Public Sector Equality Duty: guidance for schools

Office for Equality and Opportunity[37]. Ofsted inspection toolkits[38] link only to the 2014 Department for Education's 2014 guidance.

Relationships education is also compulsory in all English schools, and aspects are relevant to gender equity. For example, statutory guidance[39] states that:

- primary school children should be taught that they can expect to be treated with respect by others. They should also be taught what a stereotype is and how to challenge a stereotype
- secondary school children should be taught about respectful relationships, including how stereotypes – 'in particular stereotypes based on sex, gender reassignment, race, religion, sexual orientation or disability' – can cause damage. 'Pupils should be equipped to recognise misogyny and other forms of prejudice'

A whole-school approach is a guiding principle for Relationships, Sex and Health Education, as set out in the guidance[40].

Non-statutory guidance on **behaviour** in schools, from the Department for Education, asks schools to take a whole-school approach to behaviour[41]. 'Schools should ensure that high standards and expectations of good behaviour pervade all aspects of school life. Everyone should treat one another with dignity, kindness and respect.' It also covers some other aspects of behaviour which are relevant to safety issues around gender equity, including sexual violence and sexual harassment.

DfE set out, in its Every Child Achieving and Thriving white paper[42], proposals to help children feel safe and connected to their school environment. One of the measures was to establish a Pupil Engagement Framework, to promote a structured approach to improve children's engagement. We believe DfE should consider gender equity as it develops the Framework.

A whole-school approach to gender equity

Some strong evidence about what works to increase girls' participation in engineering and technology-related pathways comes from the **whole-school approach to gender equity**. We use this term to describe the model established by the Improving Gender Balance in Physics programme – funded by the Department for Education, delivered by the Institute of Physics and evaluated using a randomised controlled trial[43]. This programme tackled gender biases and stereotyping across the whole school – involving students, teachers of all subjects, senior leaders,

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[37] Office for Equality and Opportunity (2023), Public Sector Equality Duty: guidance for public authorities
[38] Ofsted page on gov.uk (accessed June 2026), Education inspection toolkits: statutory and non-statutory guidance, professional standards and relevant research
[39] DfE (2025), Relationships and sex education (RSE) and health education: statutory guidance. Schools must have regard to the statutory guidance, and the Department for Education encourages sixth-form colleges, 16-19 academies and Further Education colleges to consider the principles.
[40] DfE (2025), Relationships and sex education (RSE) and health education: statutory guidance
[41] DfE (2024), Behaviour in schools: guidance
[42] DfE (2026), Every child achieving and thriving (HTML version) - GOV.UK
[43] Sims, S. (2025). Improving Gender Balance in uptake of physics qualifications aged 16-18: a cluster randomised controlled trial in England. (CEPEO Working Paper No. 25-17). UCL Centre for Education Policy and Equalising Opportunities.

parents and governors. It involved a team of coaches working directly with schools to increase gender balance in the way that students, teachers and parents thought and talked about physics and other school subjects[44]. While the intervention occurred across subjects, the evaluation focused on physics and found that the proportion of female students completing an A Level in physics was significantly (31%) higher in schools that ran the programme, compared to schools that did not. However, the evaluation called for further testing because the intervention and trial were disrupted by the pandemic[45].

Related work has taken forward whole-school approaches to gender equity. A consortium including the Institute of Physics, King's College London, University College London, and the University Council of Modern Languages founded the Gender Action schools award to promote a whole-school approach across settings from nursery level upwards[46]. The Children's Society's Lifting Limits programme[47] takes a similar approach, training professionals such as teachers to support children, parents and carers to overcome gender stereotypes, working from the early years onwards[48]. DfE should build on the Improving Gender Balance trial.

A new curriculum and assessment structure

The independent Curriculum and Assessment Review (CAR) created an opportunity to rethink teaching frameworks in England. Its final report highlighted many important issues of inclusion-including gender inequities relating to engineering and technology. The review's final report commented on the decline in girls taking up computing and the perception that a wider computing curriculum could engage a broader range of students, including girls[49]. It also highlighted the importance of young people seeing themselves represented in the curriculum and pedagogical guidance relating to it[50].

Stemettes has found a significant imbalance in the number of male and female role models mentioned in current programmes of study, and in the GCSE science specifications from leading exam boards[51]. With new programmes of study in draft, we hope for a greater representation of women.

There is potential to ensure that curriculum and qualification content are engaging and relevant for all young people including girls. It is an opportunity to ensure that pedagogical approaches appeal to a range of learners, and that non-qualification activities, like enrichment, support development of interest in and enjoyment of STEM. (See separate section on enrichment below.)

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[44] Sims, S. (2025). Improving Gender Balance in uptake of physics qualifications aged 16-18: a cluster randomised controlled trial in England. (CEPEO Working Paper No. 25-17). UCL Centre for Education Policy and Equalising Opportunities.
[45] Sims, S. (2025). Improving Gender Balance in uptake of physics qualifications aged 16-18: a cluster randomised controlled trial in England. (CEPEO Working Paper No. 25-17). UCL Centre for Education Policy and Equalising Opportunities.
[46] Gender Action - Gender Action
[47] Lifting Limits | The Children's Society
[48] National Children's Bureau, A whole school framework for emotional well-being and mental health
[49] Curriculum and Assessment Review final report: Building a world-class curriculum for all
[50] Curriculum and Assessment Revew final report: Building a world-class curriculum for all
[51] Stemettes (2024), Curriculum white paper

In making changes the government must consider what science topics appeal to girls and boys[52]. Experimental evidence shows that a gender difference in the appeal of physics, statistics and informatics concepts can be significantly reduced or reversed if they are taught in contexts more likely to appeal to girls, typically more social or real-world settings[53]. Embedding careers education into subject teaching can also ensure that every young person understands how their learning relates to the real world.

Practical STEM activities are a major attractor for children, with slightly more girls (54%) than boys (50%) selecting practical work as the most likely reason for feeling encouraged to learn science at school[54]. However, there has been a decline in hands-on practical work in science in England: 26% of students in years 10 to 11 reported doing hands-on practical work at least fortnightly in 2023, down from 44% in 2016[55].

Government must ensure there is more space in the curriculum for practical hands-on learning, and it must look to build on promising approaches, such as project-based learning. It must make sure that any government-funded programme aimed at encouraging young people to move into STEM tackle industry under-representation. There are already some positive signs of this happening. For example, the (then) Department for Science, Innovation and Technology supports the CyberFirst Girls Competition – now the TechFirst Girls Competition[56]. DSIT's wider TechYouth programme, which aims to develop tech skills among young people up to 18[57], also mentions gender. DSIT also (through funding agency UK Research and Innovation) supports the CREST Awards delivered by the British Science Association. These do not have a specific focus on gender but, of over 50,000 young people who complete them each year, consistently around half are girls.

The importance of teachers and pedagogy

The Science Education Tracker found that girls were more likely to be influenced by teaching quality, with 40% of Year 7 to 9 girls as compared with 33% of boys saying that a good teacher had encouraged them to learn science, whereas 23% of girls and 16% of boys said that a teacher had put them off learning science[58]. It is unfortunate then that a high proportion of teaching in STEM subjects is delivered by non-specialists: 72% in physics, 82% in computer science and 87% in maths[59]. Approximately 64% of state secondary schools in the UK report being understaffed in at least one of the key sciences[60] and a quarter of English state schools have no specialist physics

[52] A survey of 1,200 English 15- and 16-year-olds explored how relevant they found their science education. This found stark differences in the science topics that girls and boys wanted to learn about – with, for example, greater interest among girls in healthcare and greater interest among boys in destructive technologies. Jenkins and Pell (2006), The Relevance of Science Education Project (ROSE) in England: a summary of findings
[53] Kerger, Martin and Brunner (2011), How can we enhance girls' interest in scientific topics?, British Journal of Educational Psychology
[54] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[55] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[56] Plans to boost skills and diversity in UK cyber backed by tech giant IBM - GOV.UK
[57] TechFirst - GOV.UK
[58] The Royal Society and EngineeringUK (2024), Science Education Tracker 2023
[59] 2024/25 data. NFER (2026), Education workforce in England
[60] https://www.rsc.org/news-events/articles/2023/feb/the-teaching-survey-2022/

teachers at all[61]. This, among other things, impacts who can study physics – 70% of A Level physics students come from just 30% of schools[62].

The government has acknowledged STEM teacher recruitment and retention challenges in the February 2026 Every Child Achieving and Thriving white paper[63]. In the white paper and linked plan, it has promised continued action to deliver on its earlier pledge to recruit 6,500 more teachers, including a focus on high-priority subjects like physics and maths[64]. The government's response[65] to the CAR also promised to work with schools to understand the barriers to entry to triple science, including workforce challenges.

We welcome these developments, along with the continuation of the Subject Knowledge for Physics Teaching Programme[66]. There is scope for wider initial teacher training and investing in Continuous Professional Development (CPD) to incorporate equity issues (including gender) which are currently rarely covered[67]. We also welcome existing intentions to strengthen training and retention through the teacher training entitlement[68], and to tackle violence against women and girls through additional funding for teacher training[69].

Careers education and work experience

Careers education is an important way to challenge stereotypes. The Careers & Enterprise Company (CEC) has found that careers activities accumulate to increase the 'careers readiness' of young people and analyses show that young people with high career readiness are more likely to have career aspirations that align with labour market need and defy gender stereotypes. Accordingly, girls with the highest career readiness are twice as likely to aspire to go into engineering[70].

In 2024, EngineeringUK surveyed 188 careers leaders and staff working on careers provision in secondary schools and colleges in England. Almost a third of respondents (30%) reported that female students had a lower take-up of STEM-related careers activities compared to their peers[71]. This was not reported for general careers provision take-up so appears to be STEM-specific.

Interventions can be effective from a young age, suggesting that it is productive to start early with careers advice. Between 2023 and 2025, the Department for Education funded the CEC to test career-related learning in primary schools. The programme aimed to increase children's awareness of the world of work, raise aspirations and reduce stereotypes. The CEC worked with nearly 1,400 primary schools and over 1,000 employers in 20 regional Careers Hubs. Each primary school

[61] The physics teacher shortage and addressing it through the 3Rs: Retention, Recruitment and Retraining (England) | Institute of Physics
[62] The physics teacher shortage and addressing it through the 3Rs: Retention, Recruitment and Retraining (England) | Institute of Physics
[63] Every child achieving and thriving (HTML version) - GOV.UK
[64] 6,500 additional teachers delivery plan (HTML version) - GOV.UK
[65] Curriculum and Assessment Review Final Report: government response - GOV.UK
[66] Subject Knowledge for Physics Teaching - The Ogden Trust
[67] Let Toys Be Toys (2020), LTBT ITT survey report
[68] DfE (2025), Early career teacher entitlement
[69] Home Office (2025), Freedom from violence and abuse: a cross-government strategy - GOV.UK
[70] Ready for work: Careers Education in England 2023/24 | CEC Corporate Web
[71] EngineeringUK (2024), Advancing STEM careers provision in England

received support from their local Careers Hub, CPD, and had employer encounters brokered for them. The evaluation found that, following the intervention, girls moved away from stereotypically 'female' career areas with increased interest in non-stereotypical female careers like construction and building[72].

EngineeringUK has highlighted evidence that sustained engagement with STEM throughout education benefits young people – from early associations with STEM in primary school, through identity formation in adolescence, to making informed career decisions[73].

Some existing guidance and activities around careers and work experience include gender equity considerations, or approaches to support better inclusion. The Careers & Enterprise Company developed its equalex framework to widen access to high-quality work experience and bridge the gap between the curriculum and the world of work[74]. The framework sets out that learners should be 'inspired and motivated by careers opportunities which they may not have otherwise considered'. It also sets an objective that 'learners can recognise and challenge stereotypes about career pathways and understand that their career aspirations should not be limited by them'.

Evaluation of piloting during the 2024/25 academic year highlighted that Careers Hubs can help schools by using data to spot which groups are under-represented in work experience, and to target activities to those who need them most. The evaluation also highlighted how employers can best engage with schools to link the world of work to the curriculum[75]. This creates scope for Careers Hubs and schools to examine gender equity – even though, unfortunately, neither the framework itself, nor its evaluation, consider gender.

Government-funded careers advice for young people, outside schools, includes that given at DWP's Youth Hubs[76] and at the Department for Culture, Media and Sport's (DCMS's) Young Futures Hubs[77].

Enrichment

The 2025 National Youth Strategy[78] intends to bring together policies from across government departments, to tackle the challenges facing the current generation of young people aged 10 to 21 (or up to 25 for those with special educational needs and disabilities).

Many of the programmes named in the strategy have great potential to increase interest and awareness of STEM learning and careers and will be delivered in educational settings. For instance, the £132.5 million Every Child Can programme aims to ensure that children and young people have access to a wide range of enriching activities inside and outside school. A further £22.5 million over 3 years will enable up to 400 schools in the most deprived areas of England to meet the

[72] start-small-dream-big-final-evaluation-report.pdf
[73] EngineeringUK (2026), Sustained STEM engagement framework
[74] Careers & Enterprise Company (no date), Resources relating to equalex
[75] Careers & Enterprise Company (2025), Insight briefing 1: modern work experience pilots
[76] DWP (2024), Help to find work for Universal Credit claimants aged 16 to 24 - GOV.UK
[77] DCMS (2025), Young Futures Hubs - GOV.UK
[78] Youth Matters: Your National Youth Strategy - GOV.UK

enrichment benchmarks soon to be launched by the government[79]. We welcome DCMS and DfE's June 2026 announcement that one of the enrichment framework categories is 'life and future skills including STEM', and that engineering clubs are listed as an activity that could be funded[80]. This has great potential to support engagement for young people who may not have other opportunities to access such activities. It is vital that activities are delivered in ways which engage all children and promote gender equity.

The need for stronger evidence on what works

The government and many organisations are working to increase engagement with STEM subjects, including those which target girls and women. However, there is often a lack of robust evaluations of such interventions[81]. Only 17% of 168 organisations involved in engineering and technology activities in 2024/25 said that they used trained independent evaluators to monitor and evaluate their STEM outreach activities, and many identified improving their impact as something that they would like more support with[82]. Similarly, a recent evidence review of interventions to increase the uptake of computer science by girls and women noted the need for further research in a variety of areas[83]. EngineeringUK's rapid evidence review has also uncovered mixed findings on many initiatives[84] – in addition to limited evidence from the UK – suggesting a need for more powerful research design and better understanding about exactly which elements of programmes are effective in the UK context.

Existing interventions are not sufficient to address this. The Department for Education supports the evidence base about what works in education in several ways. This includes its endowment funding of the Education Endowment Foundation and its funding of individual pilots. Significant pilots have included the Start Small, Dream Big pilot programme delivered by the CEC, and which includes a focus on gender in its evaluation[85], or the Gender Balance in Computing programme that ran from 2019 to 2022[86]. DfE also carries out education and outcomes pathways studies (EOPS)[87] and has used these in the past to look at how gender affects attitudes to STEM subjects[88]. DSIT, through UK Research and Innovation (UKRI), has funded ASPIRES research on young people's science and career aspirations[89].

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[79] New curriculum to give young people the skills for life and work - GOV.UK
[80] DCMS and DfE (2026), Every child to get access to enriching activities to build skills and confidence for life
[81] The Hg Foundation (2024), The Hg Foundation: This review of evidence on interventions to promote the success of girls and women in computer science and STEM found this was an overarching theme.
[82] EngineeringUK – Tomorrow's Engineers Code, The Code check-in findings: 2024/2025
[83] Kemp, Wong, Hamer and Copsey-Blake (2024), The future of computing education: considerations for policy, curriculum and practice. Findings from the Subject Choice, Attainment and Representation in Computing project (2021-2024)
[84] EngineeringUK (2023) Interventions to increase girls' aspirations for engineering and technology careers
[85] start-small-dream-big-final-evaluation-report.pdf
[86] Gender Balance in Computing - Raspberry Pi Computing Education Research Centre
[87] Department for Education, Information about education and outcomes pathways studies
[88] Department for Education (2019), Attitudes towards STEM subjects by gender at KS4
[89] ASPIRES Research | UCL Institute of Education

However, there is a need to bring the learning from such work together, building on existing work[90], and to compare initiatives to ensure the value for money of future investment. A 2022 UKRI-funded scoping study looking at evaluation of youth engagement with STEM found that, while some progress has been made, there is still scope for improvement. The review recommended that there should be collaboration between funders and policymakers to improve the evaluation of youth engagement with STEM without increasing the burden on grantees[91].

[90] For example, https://www.sciencecentres.org.uk/resources/
[91] Dr Asimina Vergou for UK Research and Innovation (2022), Improving the evaluation of youth engagement with STEM: Scoping study

Appendix 1: Current participation

Table 1: Current participation in engineering and technology education pathways up to age 18

		All students	Girls (n)	Girls (%) To nearest whole percent
GCSE	D&T	84 320	24 191	29
	Computing	85 096	19 392	23
	Construction	1 496	174	12
	Digital Technology	6 445	1 770	28
	Electronics	827	45	5
	Engineering	2 250	334	15
A Level	Physics	45 800	10 854	24
	Maths	115 380	42 761	37
	Further Maths	21 032	5 550	26
	Computing	20 009	3 782	19
	D&T	10 874	3 584	33
	Digital Technology	1 042	316	30
U19 apprenticeships	Construction, Planning and the Built Environment	12 160	730	6
	Digital Technology	2 100	480	23
	Engineering and Manufacturing Technologies	19 390	1 390	7
T Levels	All engineering and tech-related	8 307	1 044	13
Other L2 VTQs	Construction, Planning and the Built Environment	4 985	174	4
Other L3 VTQs	Construction, Planning and the Built Environment	5 941	287	5
	Digital Technology	15 881	2 617	16
	Engineering and Manufacturing Technologies	8 263	849	10
		471 598	**120 324**	**26**

Appendix 2: Work by the gender pathways collective task and finish groups

The whole-school approach – led by EngineeringUK and Tech She Can

This group is exploring how a model (broadly based on the Improving Gender Balance model described in the main paper) could be scaled up through a national organisation. The group believe there would be interest from schools in adopting this with the right support in place. Funding would be needed to deliver this.

Curriculum and assessment – led by BCS, The Chartered Institute for IT, Royal Academy of Engineering and EngineeringUK

The curriculum task and finish group aims to ensure the curriculum and content are inclusive and equally engaging across genders. The group has drafted guidance for curriculum designers, awarding organisations, and publishers of teaching resources to ensure gender inclusive teaching materials and approaches (awaiting publication). Two of the members of the group have been selected as the curriculum drafters for Computing and Physics.

AI for gender-inclusive careers support in schools

This is primarily an information sharing group covering AI EdTech projects members are working on, sharing updates, asking for feedback and identifying potential for collaboration.

Peer mentoring – led by Digital<ALL> and Capital City College

Peer mentoring typically involves individuals of similar age, status, or experience supporting one another. This includes:

- near-peer mentoring, where mentors are slightly older or more advanced (such as university students mentoring school pupils)
- same-level mentoring, such as students in the same year group offering support during transitions or subject-specific challenges

There is some evidence that peer to peer role models can positively influence academic outcomes, identity formation, and engagement in STEM subjects, but the group has found that the evidence on the impact on girls and young women specifically is limited. This group is exploring different types of mentoring approaches and how they might be further evaluated focusing on primary to secondary transition and secondary age.

Project-based learning – led by British Science Association and Orbyts, UCL

This group's aim is to ensure that every young person has access to high-quality, inclusive project-based learning experiences that can positively influence their confidence, identity, and future pathways. In project-based learning, learners work on often open-ended problems or questions. This encourages students to connect subject knowledge to real-world contexts and can involve people working in STEM.

The group has collated evidence suggesting that high-quality project-based learning can encourage a 'growth mindset' – that effort and perseverance can lead to success. They argue project-based learning therefore develops confidence and encourages a positive social atmosphere. UK evaluation findings do not provide robust causal evidence but indicate positive outcomes from the approach for girls, with examples of schools reporting increases in girls taking A Level physics after project-based learning at GCSE (Orbyts). The group has developed a literature review and quality tool, both in draft.

Equity and STEM research and change centre – led by Professor Louise Archer, UCL

This task and finish group aims to establish a research and change centre which would ensure the provision of inclusive, effective research-informed STEM education to ensure every young person participates, thrives and belongs in STEM.

It would achieve this by bringing together and funding research, translation, evaluation and capacity-building activities and innovations. The centre would translate evidence into resources and guidance for policy and practice stakeholders to deliver culture change. The group is currently exploring funding avenues for the centre.