UCL Engineering Engagement: Maximising our impact & reach

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WHO WE WORK WITH
- Children and young people
- Teachers – in schools, colleges and informal settings
- UCL Engineering staff and students
- Employers and funders
- Partners – in STEM learned bodies, STEM organisations and educations, museums, industry

WHAT WE DO
- Through sustained, meaningful engagements we support
- Designing solutions for contextualised engineering challenges
- Problem solving in real contexts relevant to young people
- Engaging with engineering skills and design processes in practical hands-on experiences in laboratories
- Working with expert role models: engineers, scientists and post-graduate students from diverse backgrounds
- Engagement with cutting edge STEM research

VISION
TO ENGAGE, INFORM AND INSPIRE A NEW GENERATION OF ENGINEERS FROM A DIVERSE RANGE OF BACKGROUNDS

PREFERENCES
- Promoting inclusiveness and equality
- Engaging in experimental learning
- Providing inspiring role models
- Discovering STEM career pathways
- Prioritising primary education
- Supporting teacher CPD and learning

WHAT WE ACHIEVE – CHILDREN AND YOUNG PEOPLE
- Inspire more young people from a range of diverse backgrounds into a future in technology and engineering
- Increasing young people’s knowledge, skills and understanding in engineering
- Increasing the likelihood of young people’s knowledge, skills and understanding in engineering
- Increasing young people’s knowledge of pathways into engineering and technology
- Increasing young people’s knowledge about pathways into UCL Faculty of Engineering

WHAT WE ACHIEVE – ADULTS
- Increasing teachers’ knowledge, skills and understanding of, and their confidence in, teaching concepts engineering design skills and processes
- Increasing teachers, employers, UCL students and staff knowledge, skills and understanding of how to inspire young people into engineering and technology
- Increasing teachers’, employers, UCL staff and students understanding of an inclusive approach approach in engineering and technology
Priority Areas of the 50.50 Engineering Engagement Strategy

- Promoting INCLUSION and DIVERSITY in every sense
- Inspiring through RELATABLE ENGINEERING ROLE MODELS
- Supporting teachers through PROFESSIONAL DEVELOPMENT
- Prioritising EARLY INTERVENTION
- Learning through EXPERIMENTAL ENGINEERING
- Discovering STEM CAREER pathways
The 50:50 Engineering Engagement Strategy - Achievements

- Creating a step change in the representation of girls & under-represented groups
- Inclusive both in pupil participation and programme design
- Sustained & meaningful engagement. Working with entire classrooms / schools
- Changing stereotyped perceptions of suitable choices & careers
- Including & empowering young people excluded due to invisible social structures
- Enabling equal opportunity to engineering education from a very early age
STEM Literacy Programme in primary schools

https://tinyurl.com/buddingengineers
STEM Teacher Action Research Project

- Evaluate impact - data
- Share learning
- Theory of change
- New questions

Reflect: Day 3 June

Ask: Day 1 October

Innovate: Day 2 February

Investigate: inter-session

- Research question / enquiry focus (data informed)
- Expected outcomes / the difference you want to make
- What works?

- Refine and re-trial strategies
- Track evidence of change (of practice and learning)
- How to report impact?

Baseline evidence - data
What can I learn from the literature?
Apply and track the impact of new strategies

©London Centre for Leadership and Learning
A holistic wrap around support STEM programme for young people from Black and other global majority backgrounds across East London.

Fostering resilient and health-promoting education, combining educational wellbeing and academic progression, for widening access and participation in STEM education.

A multi-partnership, knowledge-sharing approach bringing together community centres, local knowledge & culture, young people’s voices, UCL Engineering staff and students, mental and physical health experts, youth workers, educators and business.

Building on young people’s education and wellbeing from primary to secondary education, university and work, focusing on sustained engagement over time.

A safe, inclusive and nurturing learning environment to help support, teach and shape the leaders of the future.

Over 11,000 hours of tutoring and mentoring offered during the COVID19 pandemic.

**KEY STATISTICS:**

- Black boys achieved A*-B grades across all their GCSE’s.
- 89% of participating pupils went to study at top Russell Group universities in September 2022 and all chose UCL as one of their university options.
- All Year 13 girls applied and went to university in September 2022.
- 81% of young people improved their grades by an average of 1.5 – 2 progress points.
Maximising impact & reach through collective efforts
Maximising our impact and reach through collective efforts

A shared purpose & objective
To strengthen and diversify the UK STEM workforce

- Learning from each other and sharing good practice and specialist know-how
- Bringing together business, government, universities, professional institutions, museums, third sector organisations and more
- Working together to improve the quality, inclusivity, targeting and reach of our programmes, making these accessible to all young people
- Supporting with the funding, design and delivery of STEM engagement and outreach activities and programmes

A code of conduct shaped around 4 key pledges

- Pledge 1: Inspiring Connection
- Pledge 2: Driving Inclusion
- Pledge 3: Showcasing Engineering
- Pledge 4: Improving Impact

https://code.tomorrowsengineers.org.uk/
Pledge 1: Inspiring Connection

Bringing together a STEM ecosystem of different stakeholders, building on our collective intelligence, knowledge and expertise

Aligning, growing and optimizing our existing regional and national programmes while meeting the specific needs at local, regional and national levels

Learning from each other, through specialist workshops, webinars, business breakfasts and an annual conference

Sharing resources. Human resources, financial, venues, kits for activities, specialist know-how and impactful delivery, identifying and targeting gaps in our delivery and support for under-served communities

Ensuring our programmes contribute to a sustained and meaningful STEM journey from all young people

Organisations coming together to work and make a difference, increase their impact and reach

Collaboration is a mindset. Diversity in viewpoints & expertise is our strength
Pledge 2: Driving Inclusion

Ensuring all young people have opportunities to engage in STEM careers inspiration activities and no one if left behind

Inspire young people from a diverse range of backgrounds, to want make a difference through engineering

Taking an intersectional approach on diversity and inclusion, so that young people feel our programmes are “for them”

Offering a holistic wrap-around support system approach for the “whole child”

Consider the diversity of young people and cater for a broad range of abilities and levels of understanding to ensure inclusiveness, equality and access

Widening access to young people who would otherwise be excluded from STEM, due to invisible social structures

Raising awareness of our programmes through multiple and diverse channels

Inspire a sense of belonging in engineering, through strong role models and the opportunity to meet people like themselves who are studying or working in STEM
Pledge 3: Showcasing Engineering

Promote a positive, compelling and authentic view of engineering, showcasing the breadth of opportunities

Embed engineering and technology within primary and secondary learning

Making the connection of STEM subjects to real-world challenges, the world of work and everyday life

Showcase the creativity, humanitarian and environmental nature and impact of engineering

Invite young people to discover modern engineering and help them navigate through the wealth of fascinating, diverse and wide-ranging STEM career pathways

Enable young people and their key influencers to achieve a better understanding of what it is that engineers do and their significance to society in solving our global challenges.
Pledge 4: Improving Impact

Improving monitoring and evaluation of programmes and activities to develop a shared understanding of what works

Evaluating the impact of our programmes so that we build a better evidence base to identify what works and does not in delivering the greatest impact

Developing and sharing an understanding of what works to drive continuous improvement and increase investment in activities with proven, evidence-based impact and KPIs in mind

Sharing our learning through case studies and specialist workshop sessions
Bringing STEM to life through real-world engineering

Brilliant experiences, inspiring careers resources and stories that showcase modern engineering

Find experiences

Near me  By experience name

Enter school name or postcode  Search

Even during COVID, you can still inspire your students with our brilliant digital experiences!

My World, My Future
Where can STEM take me?

New engineering careers resources
Download now on Neon

https://neonfutures.org.uk/resource/

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We had the pleasure of meeting Dr @clare_elwell the inspiration behind one of the awesome @UCLEngEdu diversity stickers which @LPFKiddiesClub have been using as part of the extended learning from our STEMHEROES project. We have matched Clare and @f_lakinmolayan who will be next?
Thank you!

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