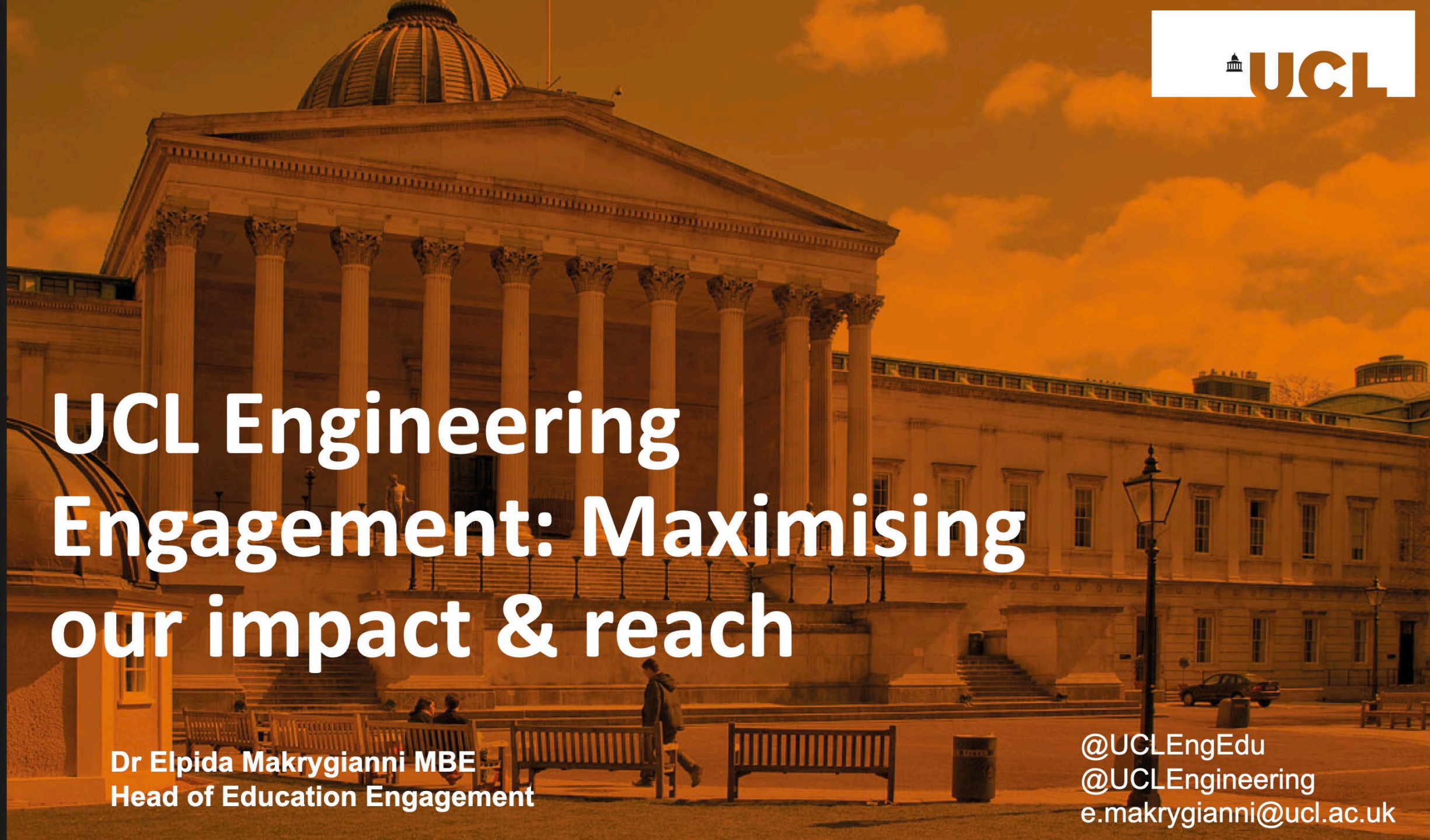

UCL Engineering

UCL Engineering Engagement: Maximising our impact & reach

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UCL Engineering

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

PRIORITIES

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

INCLUSION

WHAT WE ACHIEVE – CHILDREN AND YOUNG PEOPLE

Inspire more young people from a range of diverse backgrounds into a future in technlogy and engineering
Increasing young people's knowledge, skills and understanding in engineering and technology
Increasing the likelyhood of young peoples' 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

SKILLS JOURNEY

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 engagagements 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

YOUNG AGE PRIORITY

VALUES

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 appproach 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

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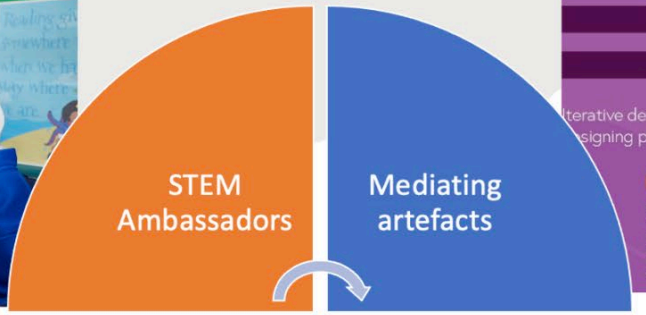
STEM Literacy Programme in primary schools

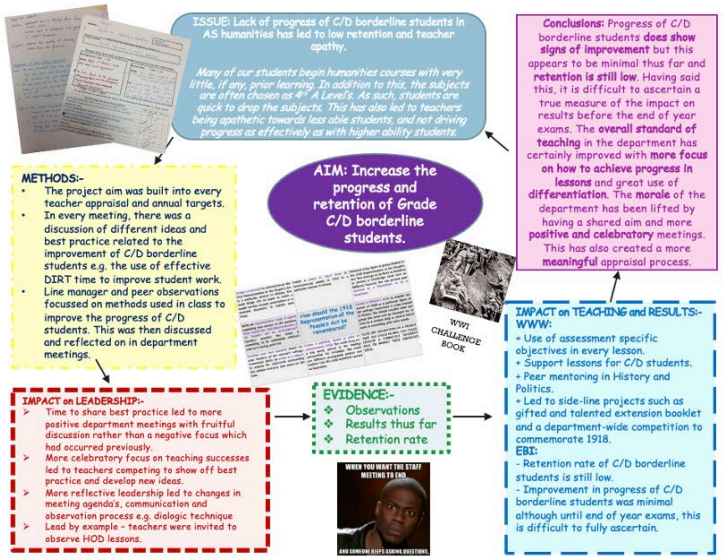


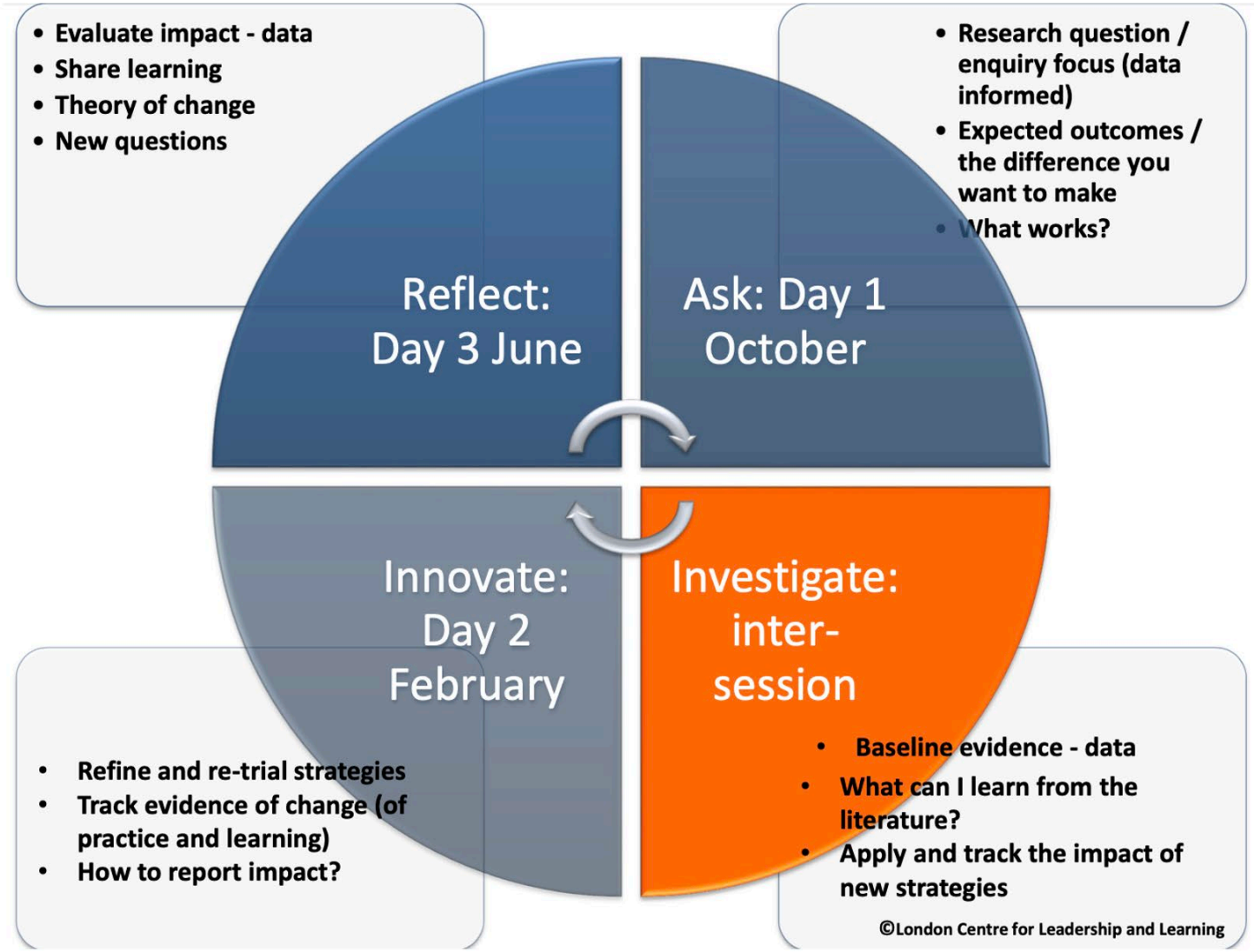
https://tinyurl.com/buddingengineers

Royal Academy of Engineering

UCL

STEM Teacher Action Research Project





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BADU

UCL ENGINEERING

BRIDGING THE GAP

Partnership Approach

- 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

UCL Engineering

Maximising impact & reach through collective efforts

UK Research and Innovation

THALES
Building a future we can all trust

UCL

SCIENCE MUSEUM GROUP

Royal Academy of Engineering

SIEMENS

Department for Education

Department for Business, Energy & Industrial Strategy

wes
Women's Engineering Society

UK SPACE AGENCY

EngineeringUK

STEM LEARNING

TOMORROW'S ENGINEERS CODE
OVER 250 MEMBERS

NetworkRail

IOP Institute of Physics

EDF

UK ENGINEERS WITHOUT BORDERS

TOYOTA MANUFACTURING UK

Institution of MECHANICAL ENGINEERS

VEX ROBOTICS

UCL Engineering

Maximising our impact and reach through collective efforts

https://code.tomorrowsengineers.org.uk/

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

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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

UCL Engineering

National / International Partnerships & Membership

UK Research and Innovation

Department for Education

UCL

UNESCO
United Nations Educational, Scientific and Cultural Organization

Royal Academy of Engineering

EngineeringUK

EU STEM COALITION
Science Technology Engineering Mathematics

European Commission

ice
Institution of Civil Engineers

IOP
Institute of Physics

IET
The Institution of Engineering and Technology

STEM LEARNING

OECD

Institution of MECHANICAL ENGINEERS

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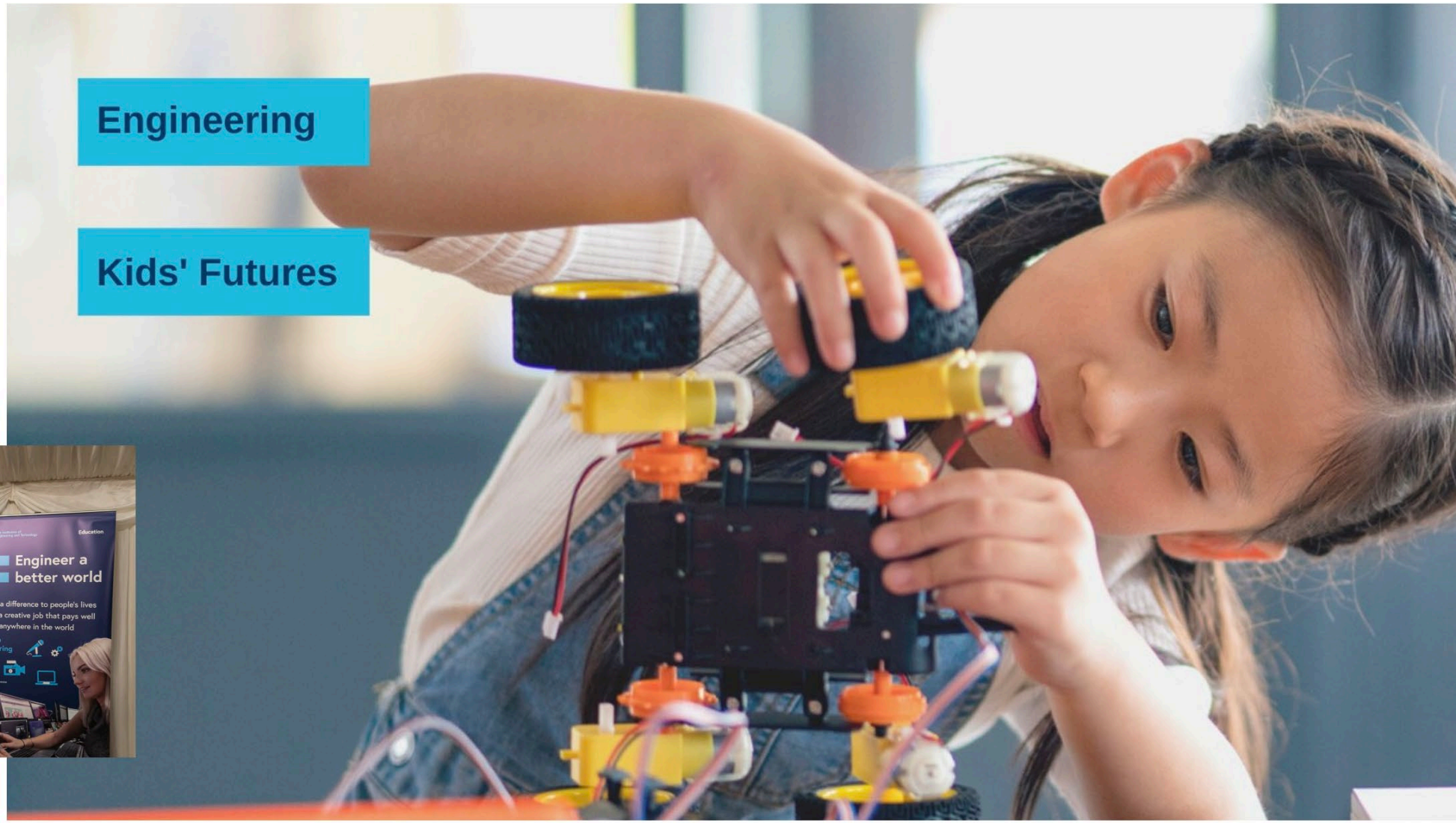

https://www.theiet.org/media/11077/engineering-kids-futures.pdf

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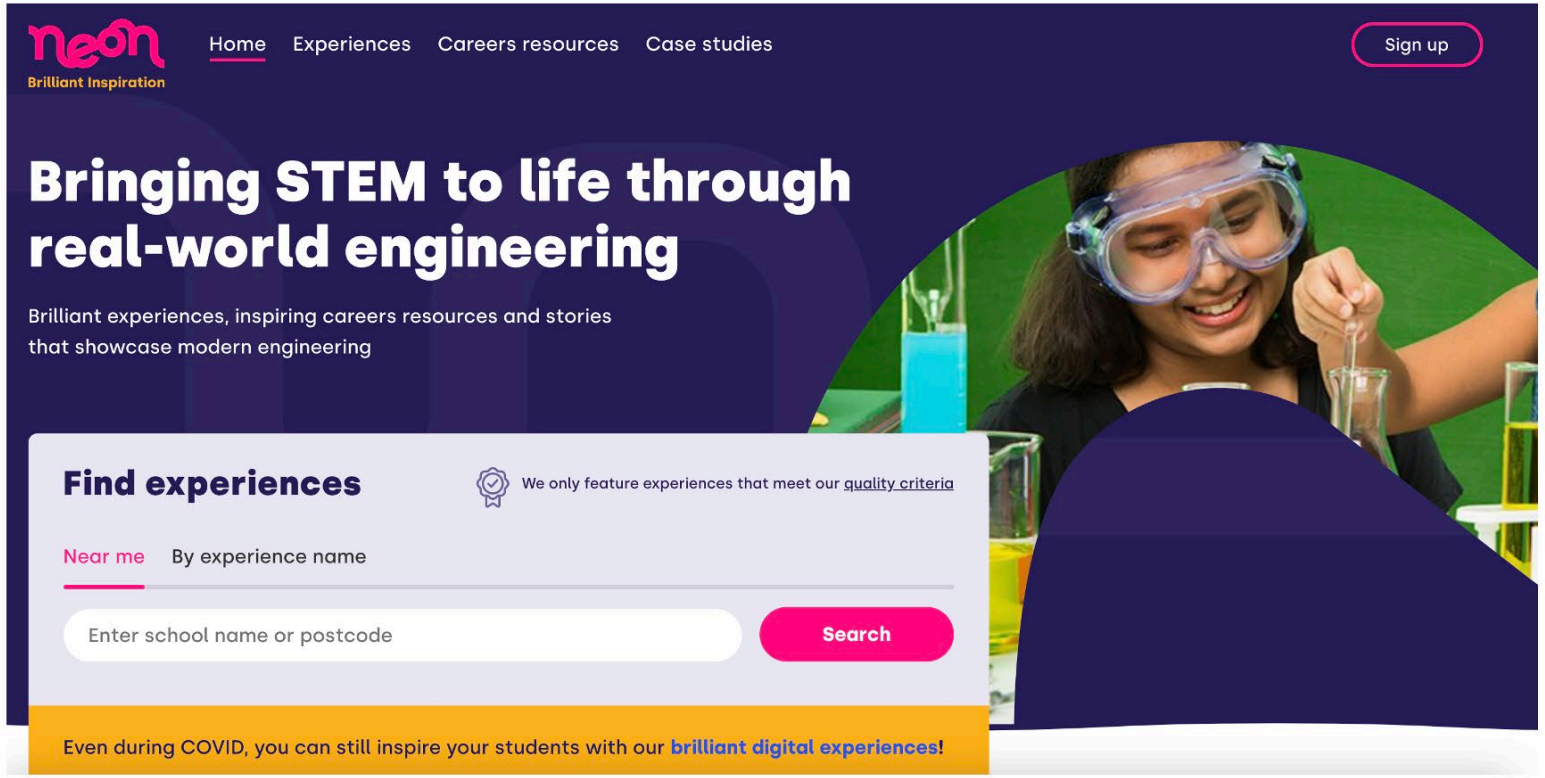

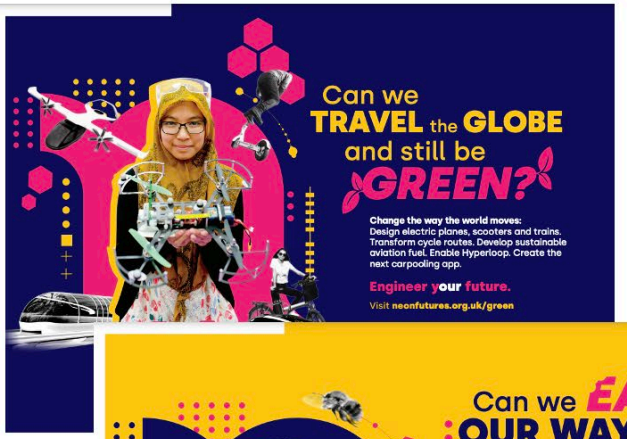

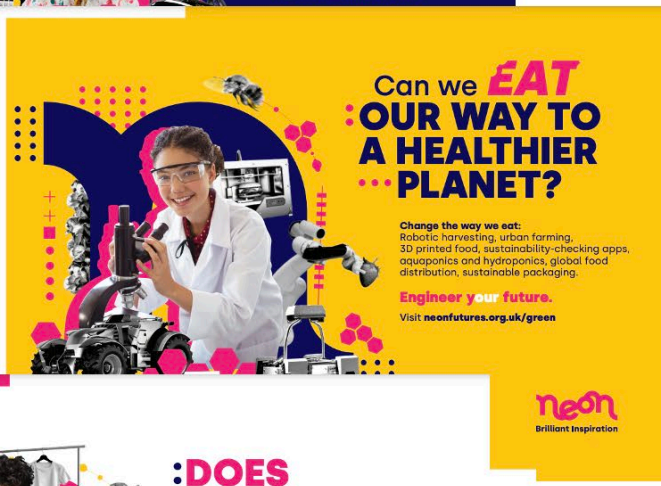

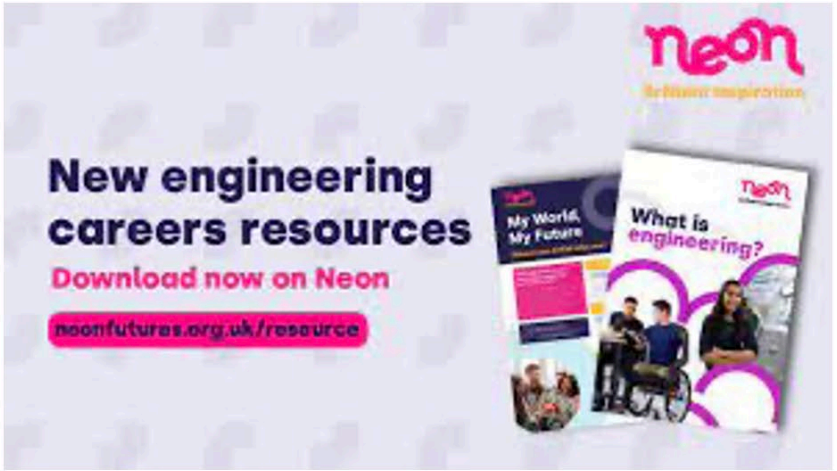

https://neonfutures.org.uk/

National UK STEM Campaign
“Meet The Future You”

UCL STEM
@UCLEngEdu

Mariya Gabriel, the @EUparliament Commissioner for Digital Economy and Society loves our @UCLEngineering stickers! #EducateToCreate #EUDigitalEducation #InclusiveSTEM #diversitymatters @YoEgovuk

LPF Kiddies Club
@LPFKiddiesClub
Following

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_akinmolayan who will be next?

Viana Maya
@Vfm12
Following

Thank you 😘 @UCLEngEdu and the young one is happy too. Now sorting them out to share with her friends. #STEM

https://mtfy.org.uk/

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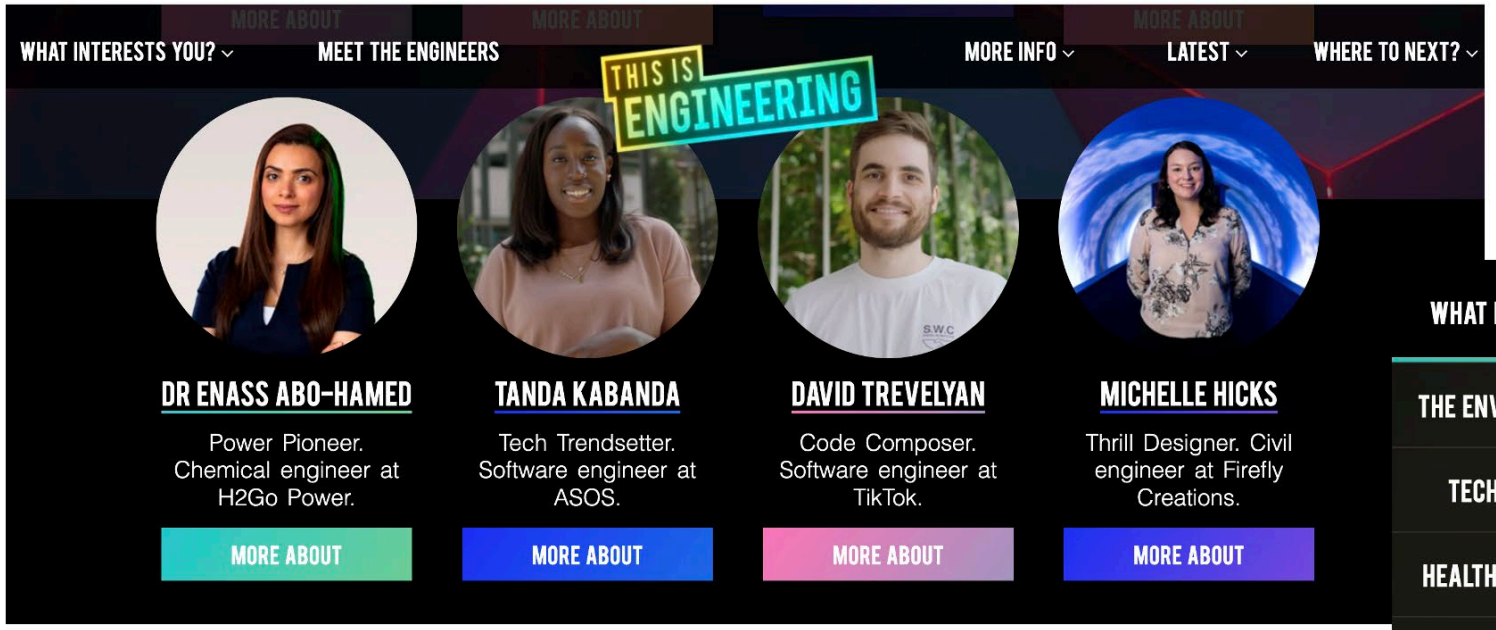

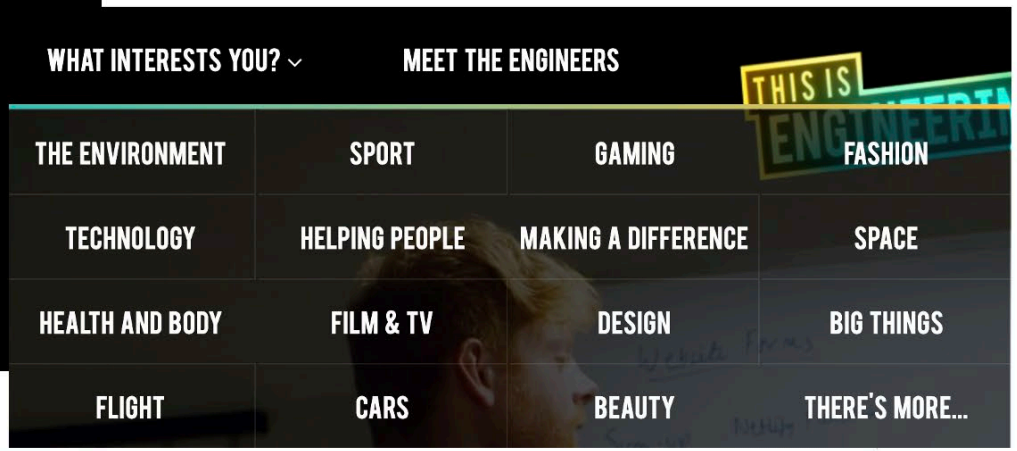

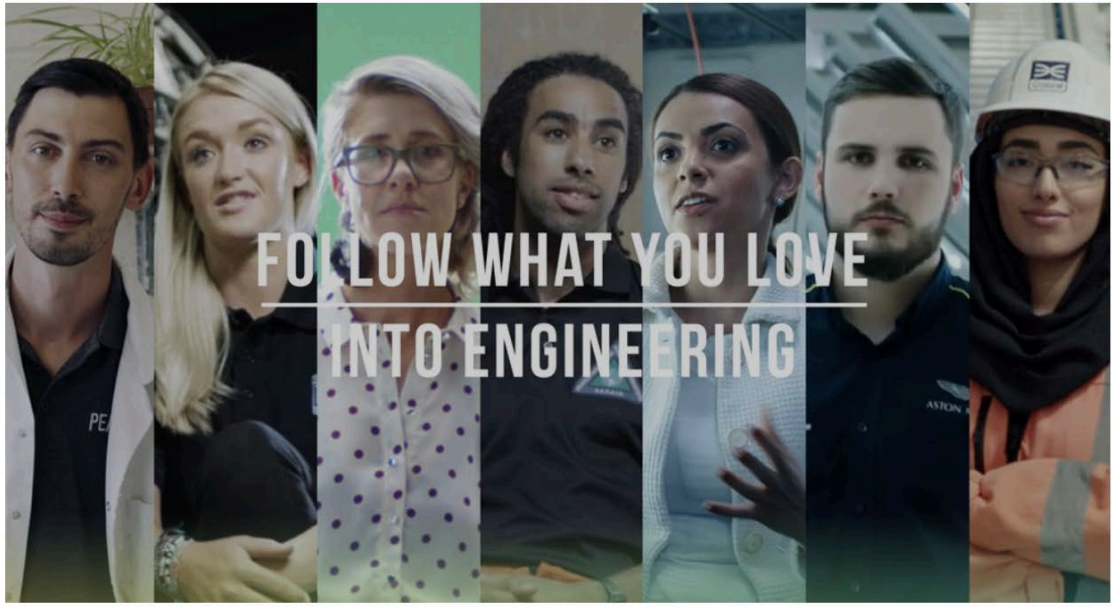

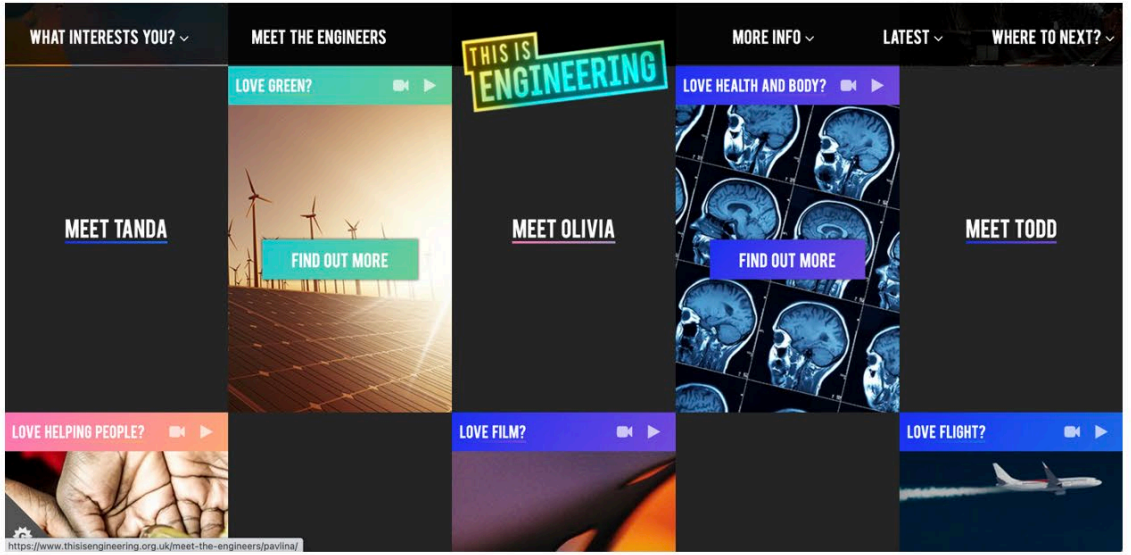

https://www.thisisengineering.org.uk/

Thank you!

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