

STEM AMBASSADOR TRAINING.

Institution of
**MECHANICAL
ENGINEERS**

Inclusive STEM Outreach


22nd May 2024

Improving the world through engineering

HI, I'M ALEX KNIGHT FOUNDER & CEO, STEMAZING

- Chartered Mechanical Engineer.
- Fellow of IMechE.
- Over 15yrs in Industry.
- Founded STEMAZING in 2019 to focus on inspiration and inclusion in STEM.
- Collaborating with IMechE to empower and support you to have a greater impact as a STEM Ambassador.
- Support from IMechE Regional Education Officers (REOs) and IMechE Partners to bring additional insight and inspiration.
- Wallflower turned active role model.





TRAINING PLAN.

ONLINE STEM AMBASSADOR TRAINING (6-7pm)

- 24th April – Become a STEM Ambassador
- **22nd May – Inclusive STEM Outreach**
- 25th Sept – Pitching Engineering to Primary School Children

IN-PERSON STEM AMBASSADOR TRAINING (full day)

- Sept TBC – Young Members' Board
- 16th Oct – Brunel University London
- 23rd Oct – Strathclyde University, Glasgow

**What do we mean
by 'inclusive STEM
outreach'?**

**Why is this
important for the
future of
Engineering?**



**"Improving the world
through engineering"**

ENGINEERING DIVERSITY VERSUS OVERALL WORKFORCE

16%
VS
48%

Women
engineers

11%
VS
13%

Minority ethnic
engineers

11%
VS
15%

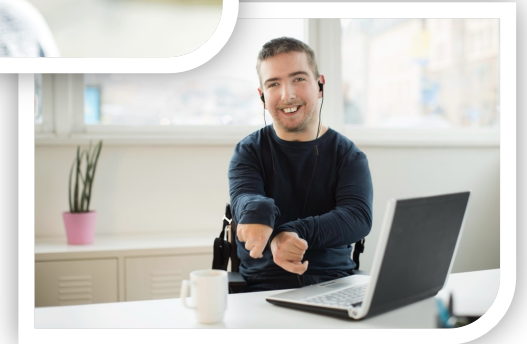
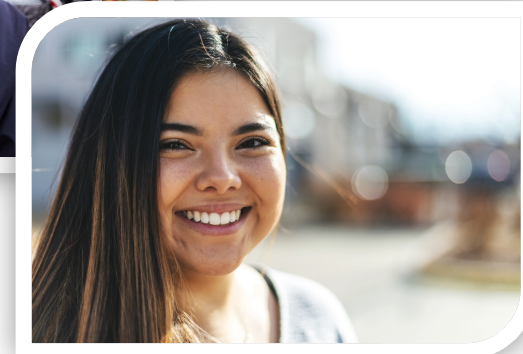
Engineers with a
disability

24%
VS
26%

Engineers from
poorer socio-
economic
background

YOU CAN'T BE WHAT YOU CAN'T SEE

- Representation matters
- Be intentional about showcasing diversity through
 - Images
 - role models
 - videos
 - examples
 - messaging



RELATABLE ROLE MODELS CONNECT TO THEIR AUDIENCE

- “Connection before Education”
- What can your audience relate to about you and being an engineer?
 - What you look like
 - What you sound like
 - What you enjoy
 - Your background
 - Your characteristics
- Ask your audience which characteristics they have – show how these relate to engineering

The 16 STEM Characteristics

Observant	Open-minded	Committed	Tenacious
Creative	Imaginative	Patient	Collaborative
Resilient	Communicator	Passionate	Organised
Curious	Self-motivated	Hard-working	Logical

<https://nustem.uk/stem-person-of-the-week/>

INCLUSION FOR PUPILS WITH SEND (SPECIAL EDUCATIONAL NEEDS & DISABILITIES)

> 1.5
million

Pupils in England
with SEN
(increasing trend
since 2016)

13%

Of SEN pupils with
no EHC plan
(Education, health
and care plan)

4

Average number of
children in every
mainstream Primary
class with SEN

ASD

Autism spectrum
disorder is most
common type of
need for EHC plan

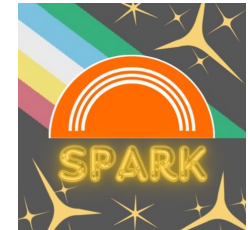
WHO AM I?

- Anna Preston
- Chartered Civil Engineer, MICE
- Employed in the Construction Industry
- STEM Role
- STEMAZING Academy Graduate
- Late diagnosed Autistic
- Passionate about inclusivity in STEM for SEND / ASN pupils.
- STEMAZING SPARK



WHAT HAVE I LEARNED?

- Demand for Neurodiverse and Disabled Role Models
- STEMAZING SPARK, inclusion is at the heart of what we are doing
- Understanding the needs of our audience and how to successfully interact
- Effective communication with teachers and other education providers
- Constantly learning from our experiences and making improvements to what we offer



How did you feel about this activity?



Sad



Content



Happy

Ask me questions



Listening



Break



Activity



Listening and thinking



Questions



**How will you aim to
make your future
STEM outreach more
inclusive?**



**“Improving the world
through engineering”**

THANK YOU.

Institution of
**MECHANICAL
ENGINEERS**

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