

# STEM AMBASSADOR TRAINING.

Institution of  
**MECHANICAL  
ENGINEERS**

**Make 2023 your year of inspiration!**

28<sup>th</sup> Feb 2023

**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 with a mission to ignite inspiration and amplify 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) to bring local insight and inspiration.



# TRAINING PLAN.



- **28<sup>th</sup> Feb – Make 2023 Your Year of Inspiration! ONLINE 6-7pm**
- 29<sup>th</sup> March – Teacher’s Top Tips (Primary) ONLINE 6-7pm
- 25<sup>th</sup> April – STEM Ambassador Training Workshop. IN PERSON IMECHE HQ 1030-4pm
- 24<sup>th</sup> May – Teacher’s Top Tips (Secondary). ONLINE 6–7pm
- 20<sup>th</sup> June – Providing advice on the routes into Engineering. ONLINE 6–7pm
- 18<sup>th</sup> July - Inclusion at the core of STEM Outreach. ONLINE 6-7pm.
- 26<sup>th</sup> Sept - STEM Ambassador Training Workshop. IN PERSON Manchester 1030-4pm
- 17<sup>th</sup> Oct – STEM Outreach beyond the classroom. ONLINE 6–7pm.
- 21<sup>st</sup> Nov – Inspire young people with engaging STEM. ONLINE 6-7pm



# AGENDA

- What are the benefits of being a STEM Ambassador?
- What do they do? Hear from REOs
- Share your experiences and STEM outreach ideas
- How can you get involved?



# WHAT ARE THE BENEFITS FOR YOU?

- Grow confidence
- Grow skills – presentation / communication
- Build local community relationships
- Give back
- Make a difference
- Fall in love with STEM again
- Sense of personal achievement / reward
- Chartership / Fellowship
- Benefit your company – MPDS, staff satisfaction and development, PR, recruitment, CSR



# WHAT DO STEM AMBASSADORS DO?

Local examples – Alex Bond, Thamesway REO



## What can engineers contribute?

Engineers are typically well suited to the role of school governors and possess a unique skill set, expertise and experiences that could really benefit a school governing board:

- Ability to challenge and ask questions
- Strategic leadership and project management
- Creative problem solving and seeking improvements
- Experience of technical and vocational education
- Being collaborative and working as a team
- Curiosity, innovation and an analytical approach.



# WHAT DO STEM AMBASSADORS DO?

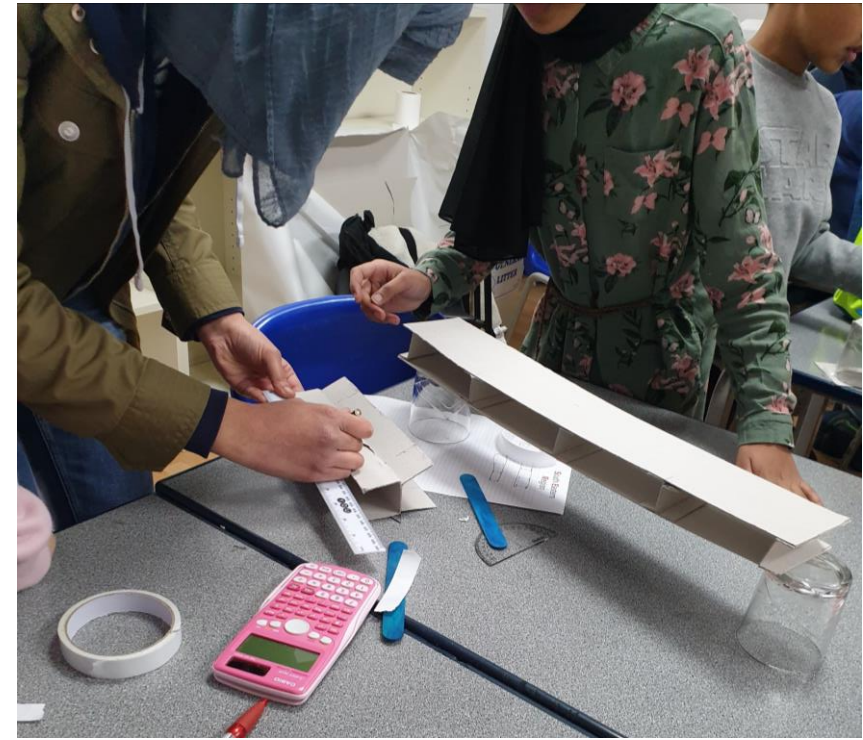
- Southeast Region REO - Khosru Rahman

The regional and local IMechE Committee members have and continue to support various STEM activities in the region

## Bridge Deck Construction Challenge

How do you make something flexible, such as a thin card, stiff enough to support a 1-2kg mass.

The winner is the bridge which is able to support the mass and is constructed using the least amount of material.



# WHAT DO STEM AMBASSADORS DO?

**Supported by Steve Smith (Kent Area IMechE Committee & STEM Ambassador)**

**Oct 2021 to June 2022**

Location - Various schools

Organisations

The MEBP, National Grid & BorgWarner Activity - Greenpower Goblin Gocart  
Year 6 students from 20 schools built cars with support engineers and ambassadors from National Grid,

BorgWarner & IMechE over 9 month period

Cars were raced over 2 day event at BorgWarner Gillingham site - June 2022  
Principles covered - Mechanics, electrical circuits, materials, design & team work.

**September 2022**

Location

HMYOI Cookham Wood

Organisations

The STEMHub & Youth Construction Trust Activity - STIXX Machines

2 sessions

2 groups of young offenders undertook the challenge to build a structure/bridge using STIXX.

Principles covered

Construction, structures, team work.



# 2023 ACTIVITIES

- Southeast Region & Kent Area upcoming and recent events
- Field vibration measurement of a model railway bridge
- Young Engineers involvement with the IMechE
- STEM in the Park  
20<sup>th</sup> May Crawley
- Goodwood Festival of Speed  
16<sup>th</sup> - 17<sup>th</sup> July

BAE Graduate Engineer giving a presentation 27<sup>th</sup> Feb. 2023



**Institution of MECHANICAL ENGINEERS**  
Improving the world through engineering  
South Eastern Region  
Kent Area Committee

**UNIVERSITY of GREENWICH**

**BAE SYSTEMS**

*Model Railway Bridge Vibration Response Measurement*

**Fred Sanders**  
Graduate Mechanical Engineer  
BAE Systems

**&**

**Khosru Rahman**  
Principal Mechanical Analysis Engineer  
BAE Systems



# WHAT DO STEM AMBASSADORS DO?



Chamboree attendees



Eisteddfod Design Contest



Chamboree materials



Schools Challenge



# 2023 ACTIVITIES

School Career Fairs 3 off to date.

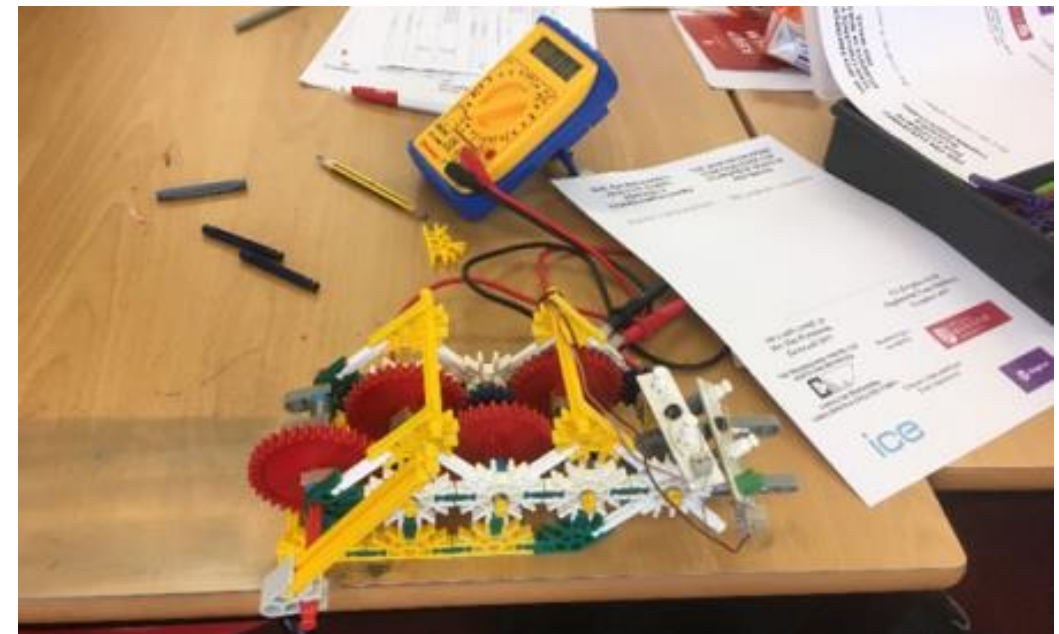
EESW schools Design Challenge.

Eisteddfod Science pavilion 8 days August.

University Careers Days.

Raytheon Quadcopter Challenge.

Jamboree.





# WHAT DO STEM AMBASSADORS DO?

- Run school activities
- Talk about engineering
- Attend shows & STEM events
- Engage with children & young adults



Midland Region events 2023  
Coventry Robot Day  
Cosford Air Show  
RAF Cadets Air Space Camp  
Engineer / Teacher Training  
Schools Air Quality Competition



# WHAT DO STEM AMBASSADORS DO?



HAVE FUN

INSPIRE THE NEXT GENERATION



# SHARE WITH OTHER MEMBERS WHAT ARE YOUR STEM AMBASSADOR EXPERIENCES?

- What have you been involved with?
- How have you benefitted?
- What other opportunities for STEM outreach can you share?





# HOW CAN YOU GET INVOLVED?

[www.imeche.org/careers-education/stem-ambassador](http://www.imeche.org/careers-education/stem-ambassador)



## Get registered as a STEM Ambassador >

You'll need to get registered via STEM Learning. This will include an induction and



## STEM Ambassador training >

We offer a programme of training webinars about our STEM at Home activities. Book a free place to attend one of our live sessions



## STEM activities library >

Discover new and engaging STEM activities. Download resources you can do at home or in the classroom, using everyday reusable

## Get in touch

Get in touch if you would like more information about our teacher support initiatives.

✉ [ambassadors@imeche.org](mailto:ambassadors@imeche.org)

☎ +44 (0)20 7973 1276

[www.stem.org.uk](http://www.stem.org.uk)

## How to sign up

Step 1. Create an account



Step 2. Complete your induction



Step 3. Complete a free enhanced DBS / PVG check



[Create an account and get started](#)

# HOW CAN YOU GET INVOLVED?

## Support network and resources

- Reach out to your Regional Education Officer - <https://nearyou.imeche.org/near-you/UK/regional-education-officers/Contact-us>
- Order free STEM at Home Toolkit resources - <https://www.imeche.org/careers-education/supporting-teachers/resources-and-activities/stem-toolkit>
- Make use of pre-prepared material - <https://neonfutures.org.uk>
- Access additional opportunities and support through IMechE Partners - <https://www.imeche.org/careers-education/education-partners>



# THANK YOU.

Institution of  
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+ 44 (0)207 304 6867  
education@imeche.org  
imeche.org

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# LET'S BUST SOME COMMON MYTHS.

- "I need to be a technical expert"
- "I need to join an organised activity"
- "I need to know schools to reach out to"
- "I need to be more confident first"
- "Managing the children's behaviour will be hard"
- "I need to know about other areas of engineering, not only my own"
- "Young people don't want to listen to old people"
- "I'm not senior enough"
- "My job isn't that interesting"
- "I don't have the time!"

