

STEM Challenge Final Impact Summary

Report for : The Global Underwater Hub

26th July 2023

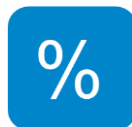
STEM Challenge Final Impact Summary

The GUH STEM Challenge Final brings together the regional winners from schools from across the UK. The session is delivered by a Smallpeice Trust educator. They provide students with STEM enrichment linked to the national curriculum and give the opportunity to build essential skills. The STEM challenge highlights the engineering design process, the underwater industry and key environmental themes.

Key stats



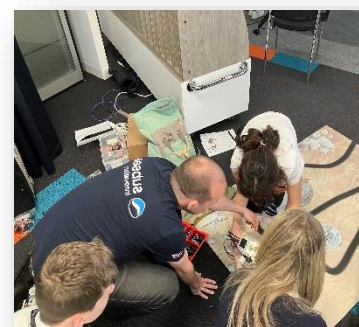
34 students attended the final



100% learnt something new and 97% gained new skills



91% gained an appreciation of what engineers do



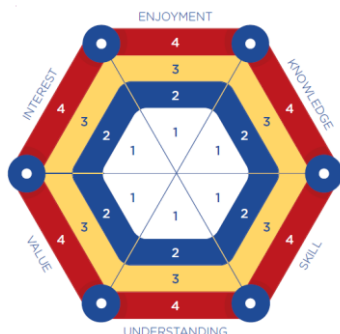
The Activity

The winners of the UK regional STEM challenge meet at GUH HQ in Aberdeen to face an enhanced challenge in which teams of 6 students aged 13/14 work together to compete to become UK champions.

Teams work on a more difficult project building a ROV arm on their underwater robot using Lego Mindstorms, then code it to follow a route and collect plastic from the ocean, with a focus on exploring how plastics impact the underwater environment.

Teams give presentations on plastics in the ocean and demonstrate how well their robots operate.

The winners are crowned UK Champions.



Measuring impact

The Smallpeice Trust uses the IMechE 6-point model for assessing the impact of the STEM activity (this model was adopted by the Government for the Year of Engineering). We request that all students and a teacher complete a feedback form.

- 100% of teacher evaluations were received
- 100% of student evaluations were received (34)

Encouraging students to learn through exploration

The STEM Challenge is an interactive workshop which brings science, technology, engineering, and maths (STEM) to life, complementing the national curriculum.

Teachers were asked to rate the STEM Challenge Day:

Standard of project	Excellent
Delivery of the day	Excellent
Overall score	Excellent



They thought the following curriculum areas were addressed:

Science	✓✓✓✓✓✓	Engineering	✓✓✓✓✓✓
Maths	✓✓✓	Inclusion	✓✓✓✓✓✓
Design & Technology	✓✓✓✓	Learning & thinking skills	✓✓✓✓✓

100% of teachers would like to request coming to another STEM event and 100% would recommend it to another school.

Engaging and perfectly pitched challenges, brilliantly organised

Teacher, Wolsingham School

Great experience, great organisation. Really valuable aspirational event

Teacher, Chilton Trinity School

34 students took part in the STEM Challenge final, 15 female and 18 male, so 44% female.

Feedback from the students shows:

- **100% enjoyed the day**
- **97% learned something new**
- **91% understand engineering better**

Thank you very much for giving us the amazing opportunity

Year 9, St Oscar Romero school

It was a great experience

Year 9 female, Waterhead Academy

Students building essential skills for the future

STEM Challenge Days give students the opportunity to build essential skills, incorporating the Skills Builder Universal Framework. Research by the Skills Builder Partnership shows the importance of young people developing these skills and how they can increase earning potential, well-being, and life satisfaction, which reducing the likelihood of being out of work.



The evaluation shows that 97% gained new skills.

Here are some of the skills students said they learnt on the STEM days you funded:

I learnt about ambition, engagement and resilience

Year 9 female, Chilton Trinity School

I learnt about engineering and problem solving

S3 female, Turnbull High School

I learnt that simplicity is best and to never give up

S3 female, Charleston Academy

Inspiring the next generation of engineers

Research with students by EngineeringUK* shows the power of role models.

- Young people who met an engineer held more positive views of engineering (81% compared with 64% who did not)
- Young people who spoke to someone about a career in STEM were more likely to see a career in engineering as desirable (71% compared to 53%) and have a good knowledge of next steps (73% compared to 54%)

The support from partners, STEM ambassadors and Smallpeice educators all helps bring this to life for the students. The evaluation shows:

- **91% now have a greater appreciation of engineers**
- **76% would consider being an engineer**

I learnt about perseverance, determination and thinking harder

Year 8 male, Wolsingham School

I learnt about having confidence and team building

Year 9 female, Waterhead Academy

Thanks so much for hosting an amazing activity

Year 9 male, Turnbull High School