ExtraOrdinary Spaces

Engaging pupils with real-world engineering – a SEERIH approach to enrich science, design technology and maths.

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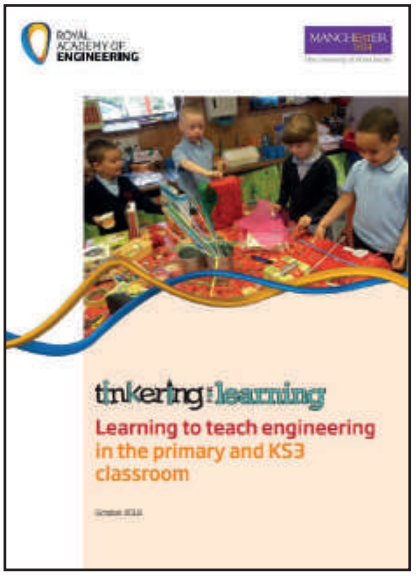
The Greater Manchester Engineering Challenge has been an annual innovative campaign taking place over the past three years. Designed to inspire and engage 7-14 year olds about engineering it has provided a valuable opportunity to invigorate opportunities for Design and Technology in primary and lower secondary classrooms. Based on the Tinkering for Learning approach (Bianchi & Chippindall 2018) this year's GMEC programme aimed to raise the profile of construction and civil engineering.



What's it about?

A key focus was on upskilling teachers and pupils in knowledge and skills but also demonstrating how curriculum objectives in D&T, Maths and Science could be meaningfully brought together. Teachers engaged in a professional development programme in which they grew in confidence using TinkerCAD (3D modelling software) and in understanding the habits and processes of engineering. Industry professionals broadened knowledge about careers into engineering and fascinated students about how sustainability is embedded into the materials and energy production and usage in a range of buildings across the Manchester.

The GMEC Challenge

There were two parts to the project. The first part completed in school, asked students to design and model a landscape to size and scale linked to a real community space in Oldham. The second part involved groups of students attending a Challenge Day where they showcased their imaginative designs. They were then asked to apply their knowledge and skills and work collaboratively in teams to create a huge 3D extraordinary space.

What was the impact?

All the teachers involved said they had learnt new skills to improve their engineering, science and technology skills, with 96% reporting they felt more confident in the area of engineering.

The pupils engaged fully in the real context of the task and began to appreciate how D&T is around them in all aspects of their life. They developed a much deeper understanding of how the design process can bring a project to life through collaborative and cross curricular learning, and the project led them to fully appreciate the bigger picture of the application of D&T and genuinely encouraged some to start considering engineering as a career for the future. All pupils said they had a better understanding of the importance of engineering in their lives.

For more information about GMEC go to https://seerih-innovations.org/tinkering4learning/gmec/

BIANCHI, L. & CHIPPINDALL, J. (2018) 'Tinkering for Learning'. The Royal Academy of Engineering and The University of Manchester.