

Fun Engineering Project for Primary Schools - Inspiring the Engineers of the Future

The popular and successful IMechE "fan boats in primary schools" initiative, developed by Fellow and STEM educator Caroline Alliston, was launched in Western region in 2015. It was subsequently adopted in the Midland and South Eastern regions. A planned roll out in Scotland last year was postponed due to the pandemic.

Now, in collaboration with Professor Reza (Midland Region Chair), the project activity has been enhanced by the inclusion of climate change and air quality issues. This added dimension makes the pupils aware that these major challenges are out there and need to be solved, but without asking them to tackle anything which is beyond them at this stage.



Engineers attend a training session in which they get to design, build and test their own electric fan boat and then they deliver the activity in class. They are supplied with a class pack of materials which provides the wherewithal to build 16 fan boats, enough for a class of up to 32 children working in pairs. They are also provided with a lesson plan, sample risk assessment, PowerPoint and pupil worksheet to help them to plan and execute the activity, supported by the class teacher.

The boats are later broken down and the parts re-used with future classes and schools to save on costs. The hull of the boat is made from polystyrene foam pizza discs which can be cut with scissors and joined with glue guns or tape to create the chosen design. Refill packs of consumables such as the pizza discs are available to enable the activity to be re-run.



Engineers are encouraged to spend a short time at the beginning of the day telling the class a little about themselves and their career before embarking on the activity. This gives the children a chance to engage with a real engineer throughout the day, and also explicitly links the design, build, test and improve process to engineering, demonstrating how much fun it can be!

Midland region plan to launch the new fan boats activity in May via a virtual workshop. Caroline has been running virtual workshops for Western region during lockdown in which the parts to make vibrating brush monsters, balloon buggies and Cartesian divers were posted out to participants prior to the workshop. This has proved extremely popular. However this will be the first time a virtual fan boats workshop has been run, where we hope to iron out any teething problems. Western region plans to launch the new fan boats activity in the Autumn— hopefully in person depending on the current situation.



If other regions wish to run the activity at some stage, either virtually or in person, they are welcome to drop Caroline an email at technologyforfun@hotmail.co.uk to discuss further details. Funding will be required for the initial workshop, the class kits and the refill packs.

Here is some feedback from the "Fan boats in schools" initiative:

Engineer: *"I had great fun delivering the session and was amazed at the variety of designs the kids came up with!"*

Head of Science *"The activity was fantastic and the children definitely bought into the fun, purpose and challenge of the sessions. What an excellent idea from such simple components!"*

Head teacher: *"Absolutely brilliant! The children's squeals of delight when they launched their boats was a moment not to be missed. The children said they had 'the best day ever'. They were talking about streamlining and modifying their models and were obviously gripped by the experience."*

