Wind Tunnel Project 2016

15 April 2016 By Alex Lusty & Robin Saaristo

In commemoration of the 150th anniversary of the Society, a 'build a wind tunnel week' was held with the support of the Bedford branch, Lockheed Martin UK (LMUK) and the Aircraft Research Association (ARA). The activity week was held at the social club of the ARA, a world leader in aerodynamic testing. A group of school pupils from Goldington Academy had been down selected from a competition held earlier in the year, the pupils had shown enthusiasm for the subject by designing posters explaining how wind tunnels work, what they're used for and their history.

The first task was to assemble the new JetStream 500 wind tunnel, funded by RAeS. This gave the pupils (and volunteers) a chance to see how complex it is to assemble the different parts of a wind tunnel. They also had chance to see some operational wind tunnels during a tour of ARA.

Alongside building a wind tunnel, pupils learned about aerodynamic forces and other theory. This theory was proven later in the week by a selection of experiments and trials performed using the new wind tunnel. The pupils looked at the drag produced by simple shapes. They progressed to designing some aerofoils that were 3D printed for testing. The week concluded with a car building challenge, where the pupils created miniature cars from both foam, aiming to have the lowest drag, and from clay, aiming to have the highest downforce. Taking inspiration from the world of motorsports and F1, the pupils were able to design cars for both these objectives.

The wind tunnel that was produced is transportable. Both LMUK and RAeS hope to take the wind tunnel to local schools and fairs to give pupils of all ages the chance to learn about aerodynamics; in particular, to emphasise how important the application of Science, Technology, Engineering and Maths (STEM) subjects is in the modern world.

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