

## Case study: Technicians going that bit further

The landscape has changed over the years for those providing technical support. Broader job descriptions, more bureaucracy, and procurement challenges mean there may be fewer opportunities for technicians to make tangible contributions. But these opportunities do arise.

Such an occasion arose at the Douglas Ewart High School (DEHS), Newton Stewart. In 2016 we received a laser cutter. This was primarily to educate the students in automated fabrication, but we quickly realised there was potential for other applications.

The science department had, for many years, through no fault of its own, taken a rudimentary approach to teaching S1/2 electronics. We could not afford the shiny plastic mounted & labelled components from the catalogues. So unmounted battery holders, crocodile clips, and homemade paperclip switches were the order of the day (see images 2 and 3). However, the laser cutter changed things drastically. We could buy a few sheets of



*Image 1: Scott, with his pride and joy*

acrylic and some electronic components, and, hey presto, we had something nice to use at a fifth of the cost. All it took was a few days of getting your head around the vector graphics software (I used Serif draw plus X8) and a lot of soldering and sticking (see images 4 and 5).

It wasn't long before other projects were requested. The laser cutter came to our aid during Advanced Higher Biology investigations. Two of our students wished to perform animal behaviour experiments. This required making aquatic mazes for goldfish to solve and cages for spiders (see images 6 and 7). These projects would've been significantly more difficult, if not completely impractical, without the laser cutter.

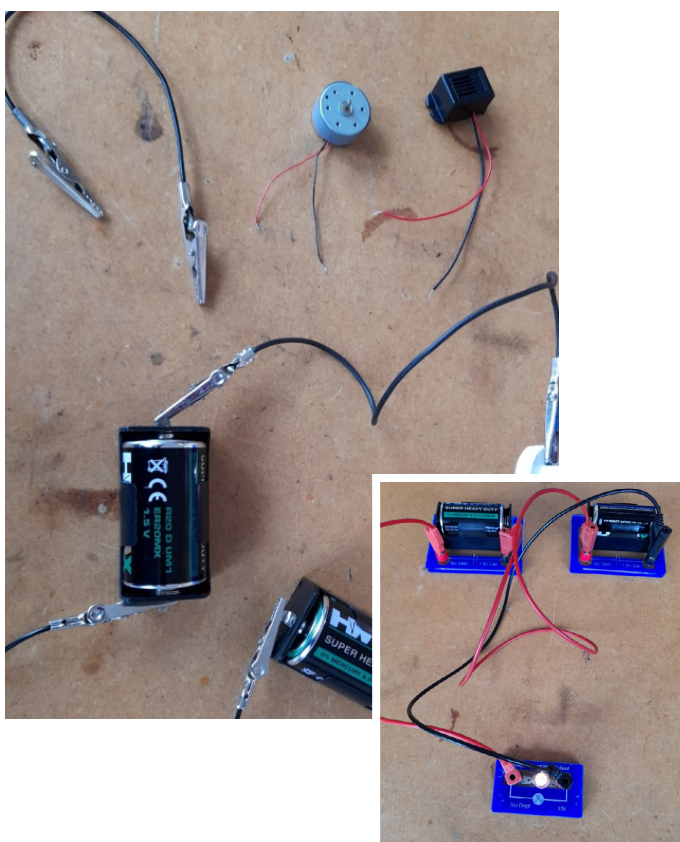
During and post-lockdown, we employed the laser cutter again. We made visors for care staff, vulnerable people, and at-risk workers. We also required some way of protecting science staff in two labs, where it was impossible to maintain a safe distance. The purchased solutions were expensive (£600) and unsuitable. So

we made our own safety partitions to prevent Covid transmission. The Laser-cutter, while not replacing certain engineering skills, does give staff the option to be creative in a cost-effective way. Yes, the laser-cutter is very expensive, but for it to be there solely as a curiosity for lower school pupils, & an enabler of upper students would be a waste. Allowing staff the time to get proficient with such equipment will pay back in many ways and will only be limited by imagination.

Obviously, none of this could've been achieved without cross-department support. So there are some acknowledgements to make.

Thank you to the DEHS Tech Department, especially Scott Templeton, who co-worked with the projects and manned the Laser-cutter and Jane Kennedy, Science PT, for understanding & sharing the vision.

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Images 2 and 3: Pre-laser-cutter electronics kit



Images 4 and 5: What we use now



Image 6: Goldfish maze



Image 7: Spider cage