

Winners of WJEC's Innovation Awards 2022 Announced

The winners of our Innovation Awards 2022 have been announced at our prestigious ceremony, held at the Pierhead, Cardiff Bay in December. The Innovation Awards, in partnership with the Welsh Government, recognises the most original project work by students studying Design and Technology, with awards for GCSE, AS level and A level work. Awards were also given for Creativity, CAD/CAM (Computer-Aided Design and Manufacturing) and Intellectual Property.

The full list of Winners includes:

GCSE Winners

- **1st** - Jacob Taylor Chow, from Ysgol Glan Clwyd for his ingenious 'Bike Safe'.

Judges' comments: *A clever concept that automatically alerts emergency services if the bicycle is involved in an accident. Some high-quality engineering and programming, and useful Computer-Aided Design (CAD) testing undertaken when developing and refining the idea.*

- **2nd** - Steffan Hoogendoorn, from Ysgol Gyfun Gymraeg Bro Edern for his original 'Mountain goat inspired climbing shoe'.

Judges' comments: *The use of an emerging material TPU95 as a flexible polymer to achieve the nature-inspired sole of a shoe is effective. The design is based on a goat's hoof and provides enhanced grip and traction for different terrains when out walking, climbing, and hiking. Evidence of extensive CAD skills to model, test and develop the concept through the iterative cycles, culminating in 3D printing the final proposal.*

- **3rd** - James Clark, from Ysgol Gyfun Gymraeg Bro Edern for his useful 'Gym spotting device that uses repurposed seatbelts from scrapped cars'.

Judges' comments: *A well-engineered safety aid for spotting during weight training. Very effective use of waste materials, sourcing and adapting car seatbelts, using a cradle-to-cradle approach rather than manipulating new materials. A well-constructed, fully functioning product responding to a real-life problem.*

AS Winners

- **1st** - Finnley Colwill-Downs, from Brynteg Comprehensive School for his fresh 'Crutch Design Proposal'.

Judges' comments: *A revitalised design of a walking aid. Good use of ergonomic data*

to fit human bodies, with enhanced features where the aid is held, gripped and how the device cushions impact as the user moves.

- **2nd** - Ewan Brough, Brynteg Comprehensive School for his excellent 'Integrated Kitchen knife Block'.

Judges' comments: *An improved kitchen block, removing the risk of young / small children gaining access to knives from the block. A unique locking system prevents removal. Creative CAD work, with effective 3D Computer-Aided Manufacturing (CAM) output.*

- **3rd** - Charlotte Warren, Ysgol Uwchradd Aberteifi for her brilliant 'Food Peg'

Judges' comments: *A clever concept that promotes environmental awareness and supports children with plants and growing organic produce / encouraging nature / gardening. This 3D printed mould takes mashed food waste, freezes it into a pointed shape for inserting into the ground to biodegrade as a fertilizer. Excellent CAD CAM skills, and a multiple focus product.*

A Level Winners

- **1st** - Benjamin Morris, from King Henry VIII Comprehensive, Abergavenny for his superb 'Toe protection for cricketers'.

Judges' comments: *A very detailed design journey, showing how this cricketers foot protector prevents injuries. Some excellent testing and development. Much commercial viability in this product. A very hard-hitting video summarising this project.*

- **2nd** – Jacob Davies, from Ysgol Uwchradd Aberteifi for his smart 'Portable Blood Centrifuge'.

Judges' comments: *Extensive research into Malaria disease, and the outcome allows the user to separate a blood sample to test for Malaria. Unpowered, this design is completely portable, allowing simple testing in remote areas with no need for any additional specialist equipment.*

- **3rd** - Sophia Grace Evans, from Ysgol Llanfyllin for her creative 'Quad Clamp'

Judges' comments: *To combat the theft of farming / agricultural vehicles / machinery, this device is fitted to the floor, so that the quad bike can be locked to it, preventing it from being moved and stolen. A clever approach to securing valuable*

equipment that is relied upon every day. A different method of security compared to current products available on the market.

Other prizes went to:

- **Intellectual Property Prize** - Niamh Harris, Brynteg Comprehensive School.

Judges' comments: *No need to worry about tangling your hose pipe and pressure washer cable - this portable pressure washer allows the user to walk freely with no reliance on power cables. Some high-quality designing and development which follows detailed and critical user needs and wants investigations.*

- **Creative Prize** - Polly Robatto, Ysgol Gymraeg Bro Morgannwg

Judges' comments: *An eco-environment, very aesthetic and supporting of the natural environment. A high-quality scale model of a high-quality modern dwelling.*

- **Computer-Aided Design / Computer-Aided Manufacturing (CAD/CAM) Prize** - Dylan Brannigan, Ysgol Gyfun Gwyr.

Judges' comments: *Perfect for swimmers and surfers who rinse and dry wetsuits after use. Effective hanging design, complete with air cooling system with sustainable power supply. A neat, compact answer to a popular problem!*