A new dimension in design.

GCSE students use Autodesk Inventor to turn their 2D drawings into detailed 3D models.

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Ysgol Dinas Bran Llangollen School is a high-achieving bilingual school, ranked among the top five schools in Wales. A focal point in the community and a source of creative design inspiration for other schools in the region, it prides itself on its open-minded approach and promotes innovative, balanced education for all. Autodesk Inventor is widely used at the school, with pupils of all ages quickly adopting the 3D CAD software to produce high quality design projects. Ysgol Dinas Bran champions flexible and efficient design software for 21st Century schools, and regularly holds Autodesk training days.

The challenge
Ysgol Dinas Bran Llangollen School’s Head of Technology Rhys Evans wanted his pupils to enjoy designing using the most modern, intuitive and flexible software available. He needed a consistent interface that addressed all the design department’s requirements and that would be easy to integrate with the curriculum.

With a strong reputation for innovation in the teaching of creative design, Evans was keen for his school to maintain this momentum and continue to be a shining example of best practice in the use of innovative design techniques.

Evans challenged three Year 11 students to design a 3D retail product that would be both practical and elegantly designed, a product with real commercial potential.

The solution
The school began using Autodesk® Inventor® in 2002. An early convert to the benefits of 3D design, Evans quickly realised its potential, noting its flexible interface and advanced functionality. Autodesk Inventor is now the school’s primary design software, used extensively by pupils of all ages.

Pupils are introduced to the software at primary level (from Year 6), while a number of the school’s feeder primary schools are adopting Autodesk® 123D® Make. From Years 7 to 10, pupils use Autodesk Inventor for progressively more ambitious design projects, and must be able to use it well in order to succeed at GCSE, AS and A-Level.

Evans’s Year 11 pupils Gwennan, Robert and Christian used Autodesk Inventor to design three very different products: elegant dresses inspired by Jules Verne’s novel Around the World in 80 Days, a calming biomorphic lamp and a wine rack with a twist. Each pupil used the software to visualise their 2D drawings and transform them into high-quality 3D models.

The results
All three students found it surprisingly easy and intuitive to both transfer their ideas and images to Autodesk Inventor and to modify them, commenting that it felt very natural to be creative using the software.

By accurately and rapidly modelling their products in 3D, all three achieved a high level of quality, generating products that could feasibly be sold in stores. Christian’s wine rack received an enthusiastic response at Autodesk’s 2012 showcase of best practice, AU2012.

Evans describes Autodesk Inventor as a great digital toolbox and powerful way for pupils to first visualise and then realise their design intentions. Additionally, using advanced design software has ensured that design remains a relevant and popular subject at Ysgol Dinas Bran, with lots of pupils opting for design courses at all levels.

The UK government’s Inspectorate for Education and Training in Wales (ESTYN) has described the school’s design department as ‘a department that others can learn from’, while its results are among the best in Wales.

Autodesk software has been easily integrated into the school’s curriculum and responds effectively to its wide-ranging design needs. Pupils get to grips with the software very quickly and once they’ve used one Autodesk product, they rapidly understand how to use another.

Evans consistently recommends the software to other schools, emphasising the high level of precision it offers, as well as the budgetary and time-saving benefits of adopting free, easy-to-use digital tools.

‘The software encourages experimentation without penalty. It enables a level of precision in the work that would not normally be achievable by students. The products produced are of a standard that would not look out of place in a shop - and that certainly was not the case in the past’.

‘It is always a matter of great pride to see our students achieve and to hear their stories of what they have gone on to do when they move on to work, college and university. I still get a sense of awe and wonder when I see the results achieved’.

‘The things I see make me happy and I am confident I made the right choice when I made the decision to adopt Autodesk software. I have recommended and demonstrated Autodesk software. Many other schools and I have never heard anybody say anything other than positive things about it and many have gone on to adopt the software themselves’.

Rhys Evans
Head of Technology
Ysgol Dinas Bran Llangollen School

The following Autodesk product was used in this project: Autodesk Inventor

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