

Demystifying CAD

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CAD stands at a crossroads in secondary education, with over 95% of design, engineering and manufacturing industries now requiring CAD proficiency as a foundational skill. At a time of curriculum review and as cloud-based platforms and AI-assisted features become increasingly accessible, now is a great time to address some of the myths surrounding CAD and reassess approaches to teaching CAD.



Myth 1: CAD is too complex for secondary school students

Schools in the UK and worldwide report that with structured training and support, students not only quickly master fundamental CAD concepts, but that leveraging it often leads to a dramatic improvement in their quality of work and understanding of core engineering principles. Platforms like Autodesk Fusion provide industry tested capabilities, whilst maintaining intuitive, user-friendly interfaces suitable for beginners and secondary students.

Phil Hall from The Windsor Boys School, a comprehensive all-boys upper school and sixth form said *"students now see CAD as a tool which they can use on many levels. Some use it as a way of simply visualising their concepts but most then take it to where we find most value, which is in the development of ideas through to physical products. It's absolutely pivotal in what we do."*

Myth 2: CAD is expensive and requires specialised hardware

In a time of squeezed budgets, the perception that implementing CAD requires substantial financial investment persists, and often deters schools from modernising their curriculum. However, there are many free CAD solutions available to education. Autodesk and others offer fully featured education licenses to software at no cost. The integration of CAD with Computer Aided Manufacturing (CAM) can even support the teaching of manufacturing concepts without CAM machinery. Whilst practical experience is invaluable, CAD

& CAM can enable students to virtually follow the manufacturing process, helping students explore complex design-to-production workflows when expensive machinery is unobtainable.

Myth 3: CAD is only relevant for mechanical engineering and architecture

The perception that CAD is only for engineering significantly understates its versatility. In science, CAD enables the visualisation of structures and simulation of forces, while mathematics teachers can use it for geometric modelling or exploring spatial relationships.

Cross-disciplinary projects, such as F1 in Schools, demonstrate how CAD enables a huge variety of disciplines including technical design, marketing, presentations, sponsorship, documentation and many more. Additionally, teachers across subjects can create custom interactive models (datasets) as dynamic exploratory resources instead of relying on static images or outdated animations.

Myth 4: CAD should be taught as a standalone, generic skill

Teaching CAD in isolation can significantly limit its value. In his review of the Scottish Curriculum Kier Bloom reflected that *"skills are the accumulation of knowledge. Without knowledge there can be no skills."*

Students need exposure to real-world contexts through practical challenges that integrate with broader design thinking processes. Industry practices demonstrate that CAD functions as part

of an integrated approach, considering manufacturing constraints, material behaviour, cost implications, and much more, simultaneously.

Myth 5: CAD is too time-consuming to integrate into a packed curriculum

Curriculum time is increasingly tight, and CAD can seem like an extra burden. But teachers who've introduced it find that CAD actually enhances lessons while building essential digital skills. Modern CAD systems offer features that go beyond manual capabilities: rapid design variations, simulations, and integration with manufacturing processes.

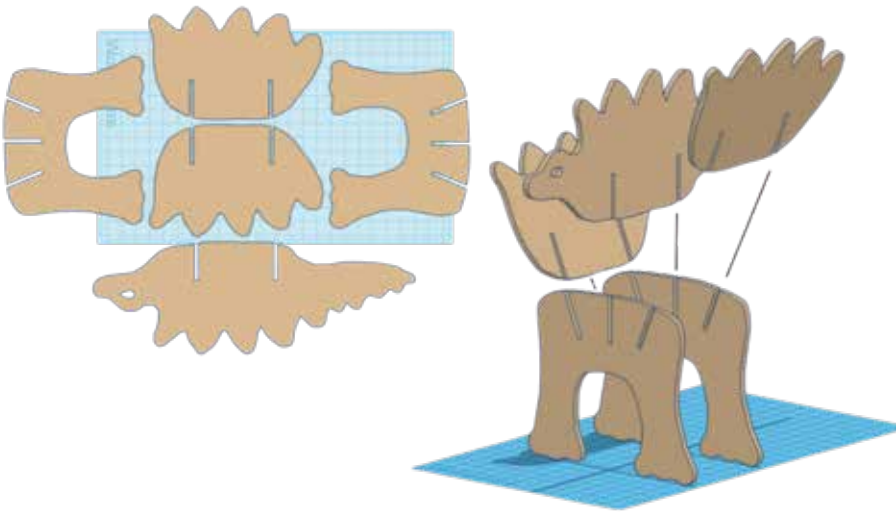
It is a robust platform for design, testing, and manufacturing that mirrors real-world workflows and supports many core curriculum concepts.

For teachers concerned about learning CAD themselves, the process is now easier than ever, with intuitive interfaces, tutorials, curriculum and workbooks, plus funded educator training available from Autodesk Learning Partners.

Empowering students

We believe that design is a superpower. The integration of CAD into secondary D&T offers opportunities for students to develop not just technical proficiency, but also problem-solving skills and an authentic experience of digital workflows so they can make the changes we need in the future.

From experience, teachers who embrace digital transformation often realise that it enhances their ability to deliver engaging content, connected to industry practice. The result is an experience



Example renders made using Autodesk Tinkercad which relates to our supplementary 'Dinosuit Focused Task' units for the Design & Technology Association 'Inspired by Industry' contexts.



Inspired by Industry



Dinosuit Focused Task (member-only)

that better prepares students for their NEAs, while fostering their creativity and innovation. Indeed, Pearson/Edexcel have recently updated their D&T GCSE NEA requirements, making CAD mandatory to access some of the higher grade bands.

Maintaining traditional-only approaches can leave students unprepared and at a disadvantage for their future careers.

Look out for announcements from the Design & Technology Association for a free webinar to discuss these principles and myths in more detail and how to get started with Autodesk Fusion.

Sign up to our fully funded training courses in Autodesk Fusion, or reach out to either:

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