How designers use computers to create products

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What do designers do?

Designers create the look and feel of everything around us — from mobile phones and trainers to chairs and toys. Before anything is made in a factory, designers need to imagine it, sketch it, test it, and make sure it works properly. That's where computers come in handy.

Computer-aided design (CAD)

CAD software is like a magical drawing tool that lets designers create **3D models** of products on screen. Instead of drawing on paper, designers use special programs to build digital versions that look almost real. They can zoom in, spin them around, and see every angle and detail.

Think of it like making a character in a video game — you can see exactly what it looks like from every direction and make changes instantly.

Testing and improving designs

One of the biggest advantages of computer design is **testing**. Designers can use computers to see how a product will behave in the real world before spending money making it. For example, a **car manufacturer** might use computer simulations to test how a new vehicle performs in a crash, or whether it's comfortable to sit in.

Computers can also check if a design is strong enough, if it will break easily, or if water will leak through it. This saves time and money because designers can spot problems early.

Think of it like having a crystal ball that shows you what will go wrong before you actually build something.

Sharing and collaborating

Computer designs can be shared instantly with other designers, engineers, and manufacturers around the world. A team in **London** can work together with a team in **Tokyo** on the same product file at the same time. This makes teamwork faster and easier.

From screen to real life

Once a design is perfect on screen, computers help create the instructions for factories to make the real product. Some factories even use **3D printers** to create test versions (called **prototypes**) from the computer file, letting designers hold and test a real version before full production begins.

Without computers, designing products would be much slower, more expensive, and more wasteful. Digital design lets creativity and technology work together to make the products we love.

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