

3D Printing

A new dimension in printing

3D printing is an additive process

This means it adds material rather than taking it away. Most manufacturing processes are subtractive, cutting away material and creating a lot more waste.



Fancy printing out your own trainers?

You may soon be able to download **CAD** information to your computer and print them out at home!

This will **cut down on the costs and pollution** associated with transport and storage.

Complex structures can be built inside the 3D printed item

Engineers are looking at our **skeleton** to help them to design lightweight internal support structures inside products.

This copying of nature is called **biomimicry**.



The printing process

- A 3D image of the product is created using **computer-aided design (CAD) software**. Software splits this image into a series of very thin layers.
- The **CAD information** is sent to the printer.
- The item is built up by printing it **one layer at a time**, from the bottom up. Instead of ink, the printer can use plastic, powders, resins, ceramics and even some metals, deposited in the exact shape of each layer.