

# 3D printers come to the desktop

3D printers – driven by simple desktop applications – allow designers to visualise a concept on a computer screen and turn the digital files into a physical prototype as easily as printing a picture

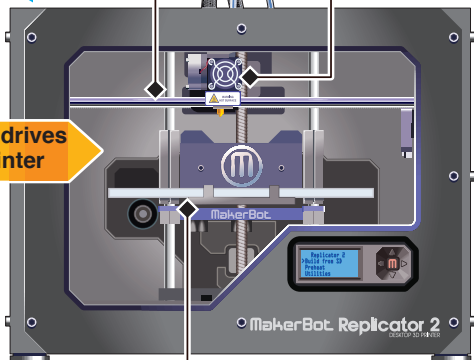
**1** Prototype built on screen using 3D design programme. Model is sliced into 15,000-plus digital layers. Each 0.1mm slice corresponds to one layer of model to be fabricated



Gantry allows print head to move in 3D

Filament guide tube  
Extruder

Code drives 3D printer

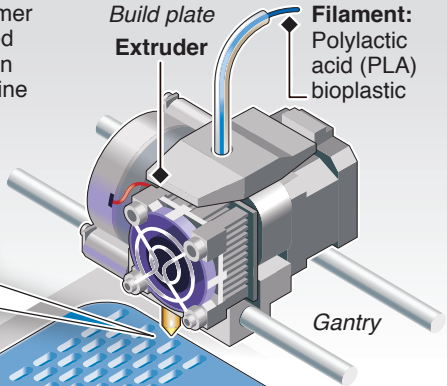


**2** Molten polymer filament – fed through extrusion nozzle – forms fine layer of material

Build plate  
Extruder

Filament:  
Polylactic acid (PLA)  
bioplastic

Build plate



Gantry

**3** Build plate lowered in steps of 0.1mm. Nozzle builds additional layers

**4** Prototype – including internal structure – formed as layers build up

Sources:

MakerBot,

National Additive

Manufacturing

Innovation Institute

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