



# SAM

SECTOR SKILLS STRATEGY  
IN ADDITIVE MANUFACTURING

## What Is 3D Printing and How It Works?

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# How does 3D Printing work

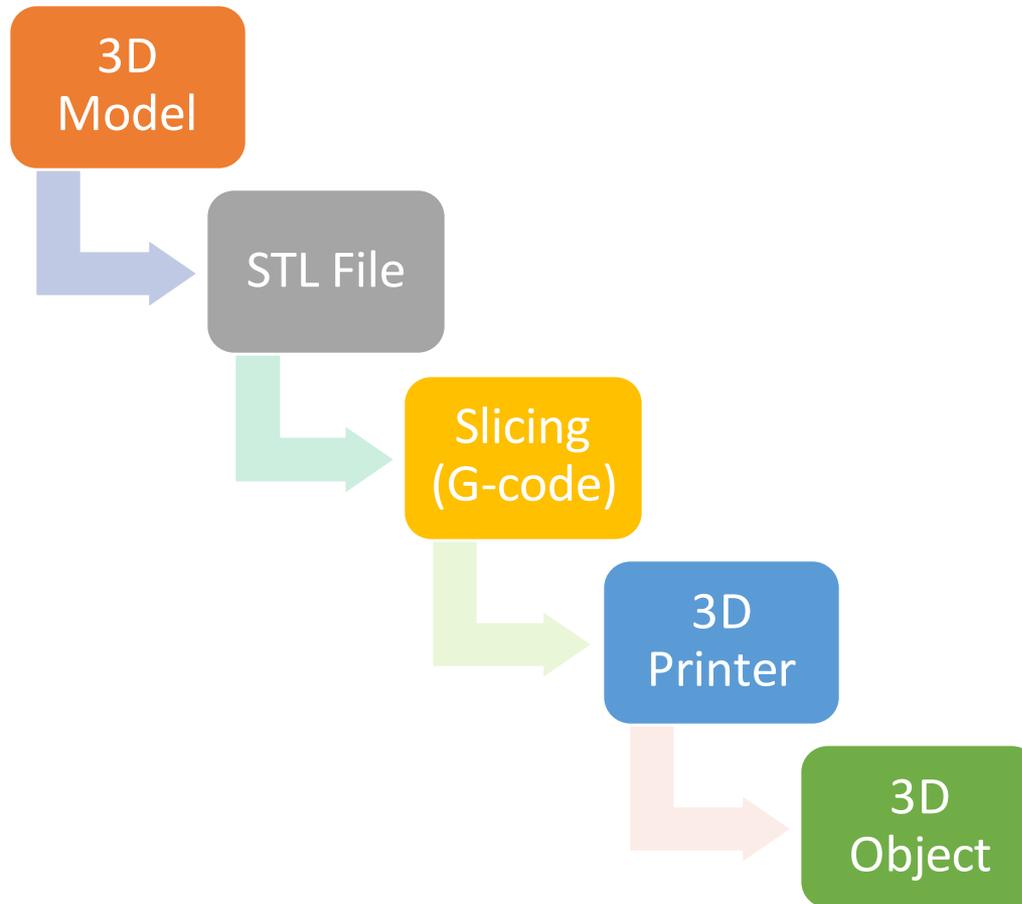
- ✓ Design a 3D Model of an object with a software
  - ❖ Free software examples include TinkerCAD (*shown in this tutorial*), SketchUp
- ✓ Convert the model into a format (called an STL file) that the 3D printer understands
- ✓ Print the object with a 3D printer
  - ❖ layer by layer, as shown below

Different types of 3D Printing processes  
**Material Extrusion is the most common**



Source: giphy (2020)

# 3D Printing process



## 3D printing process – free 3D models online

Another easy approach is download 3D models online (and modify, if you want)

✓ Thingiverse - [www.thingiverse.com](http://www.thingiverse.com)



✓ YouMagine - [www.youmagine.com](http://www.youmagine.com)



✓ MyMiniFactory - [www.myminifactory.com](http://www.myminifactory.com)



# 3D scanning (alternative approach)

- ✓ 3D scanning can turn objects/items into digital 3D models
  - ❖ Reverse engineer products
  - ❖ Preserve cultural or historical artefact
  - ❖ Recreate different models (e.g. toys)



Source: 3D Printers Online Store (2020)



Source: 3D Printing Industry (2020)



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