Foxford Learning Plan

YEAR: 10

Topic 3: 3D Printing

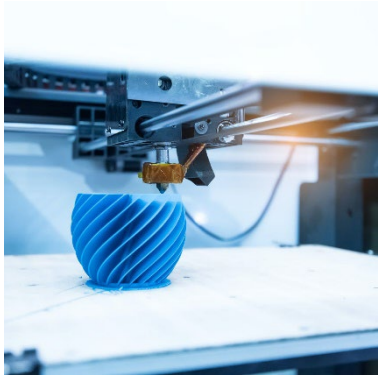
Spring Term

Key Vocabulary

Rapid Prototyping	The fast manufacture of a physical part, model or assembly using 3D computer aided design.
Google SketchUp	CAD software that 3D models can be created on. The software can link to a 3D Printer.
Pre-manufactured Components	Parts or components that are purchased by a manufacturer and are used in the manufacture of a final product.
USB (Universal Serial Bus)	External connection that can plug in to computers or other devices.
3D Printing	Process of making a physical object from a three-dimensional digital model, typically by of material building up on top of each other.
Accuracy	The process of being very precise .
Dimensions	Measurements of a product.
Computer Aided Design (CAD)	Use of computer software to design and develop products.

Key Skills

Over the course of the topic, I will be able
Produce initial design ideas by hand that are suitable for further design development.
Use Google SketchUp to design a product suitable for 3D Printing.
Use some of the advanced tools in Google SketchUp to develop designs and complex parts of my design.
Use a specification to make sure that my design is suitable for a target audience.
Research and analyse the work of existing designers in detail.



I will understand:

1. The importance of using a specification when designing.
2. How 3D Printing and Rapid Prototyping are used in industry when prototyping products.
3. The relationship between CAD and CAM, and be able to explain this in detail.
4. How CAD work needs to be highly accurate and to the correct dimensions to reduce errors before final manufacture.
5. Why and how designers analyse products.