|  | **Topic** | **Key concept – what do I want the students to learn from this unit?** | **What knowledge will they acquire?** |
| --- | --- | --- | --- |
| **Year 9 Engineering overview** | | | |
| **9 - half term 1** | Engineering  Introduction to design cycle | Design brief, specification, design ideas | * Purpose of a design brief * Purpose of a specification * Creation of design ideas * Problem solving |
| **9 – half term 2** | Engineering  Introduction to prototyping | Producing a prototype and risk assessment | * Modelling materials * Workshop practices * Risk assessment |
| **9 – half term 3** | Engineering  Engineering drawing | Understand how ideas are communicated visually using a range of drawing techniques | * Freehand sketching * rendering * Orthographic * Isometric * Use 2D & 3D CAD |
| **9 – half term 4** | Engineering  Materials and processes | Understand products are made from and how they are made | * Categories of materials * Manufacturing processes |
| **9 – half term 5** | Engineering  Product analysis | Designer’s responsibility to develop sustainable products.  Impact of products on the environment | * 6R’s * Environmental impact * Finite and non-finite resources * Waste management |
| **9 – half term 6** | Engineering  Primary and secondary research | Difference between primary and secondary research  How research is used to inform product design and development  Presentation of data | * Primary research types * Secondary research types * How to collate results * How to present finding |

**Year 9 Engineering**