|  | **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** | EngineeringIntroduction 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** | EngineeringIntroduction to prototyping | Producing a prototype and risk assessment | * Modelling materials
* Workshop practices
* Risk assessment
 |
| **9 – half term 3** | EngineeringEngineering 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** | EngineeringMaterials and processes | Understand products are made from and how they are made | * Categories of materials
* Manufacturing processes
 |
| **9 – half term 5** | EngineeringProduct 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** | EngineeringPrimary and secondary research | Difference between primary and secondary researchHow research is used to inform product design and developmentPresentation of data | * Primary research types
* Secondary research types
* How to collate results
* How to present finding
 |

**Year 9 Engineering**