

**Rugby Free Secondary School Curriculum Sequence Overview 2023-24**

**Key Stage 2 Key Links:**

The National Curriculum for Design and Technology states that students should be taught to:

1. apply their understanding of how to strengthen, stiffen and reinforce more complex structures
2. understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
3. understand and use electrical systems in their products

**Year 7 Link to Key Stage 2:**

1. generate, develop, model and communicate their ideas through discussion
2. investigate and analyse a range of existing products
3. evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

**Year 8 Link to Year 7:**

1. select from and use a wider range of tools and equipment to perform practical tasks
2. understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
3. understand and use the properties of material achieve functioning solutions

**Year 9 Link to Year 8:**

1. Pupils learn to develop, model and communicate design digitally through the use of different CAD packages.
2. pupils learn to select from and use a wider range of tools and equipment to perform practical tasks for their material of chosen study
3. understand and use the properties of their chosen material study and the performance of structural elements to achieve functioning solutions

**Year 10 Link to Year 9:**

1. pupils learn to identify and solve their own design problems and understand how to reformulate problems given to them
2. pupils learn to select from and use a wider, more complex range of materials, components taking into account their properties
3. Pupils will learn about new and emerging technologies that have replaced the tools they have learnt previously.

**Year 11 Link to Year 10:**

1. Students complete their NEA task (50% of final grade). The NEA is a substantial design & make task assessing areas such as research and investigation, communicating design ideas and realising design possibilities.
2. Students complete the written examination (50% of grade), which is split in to 3 areas: A – Core technical principles (20marks, B – Specialist technical principles (30 marks) and C – Design & making principles (50 marks)

**Year 12 Link to Year 11:**

1. Pupils learn to provide detailed and justified explanations of why specific materials and combinations of materials are suitable for given applications, with reference to physical and working properties.
2. Students learn to develop an awareness of the relationship between material cost, form, and manufacturing processes, and the scale of production.
3. Students learn to be aware of how computer systems are used to plan and control manufacturing, reduce waste and respond quickly to changes in consumer demand.

**Year 13 Link to Year 12:**

1. Students complete their NEA task (50% of final grade). The NEA is a substantial design & make task assessing areas such as research and investigation, communicating design ideas and realising design possibilities.
2. Students complete the written examination (30% of grade), which covers technical principles in a mix of short and extended response questions
3. Students complete the written examination (20% of grade), which covers the designing and making principles in a mix of