

**Technology Year 9 Curriculum:** There are 5 main areas of design and technology that will be covered in year 9: **Designing:** -Research and analyse products. Write a detailed specification. Use a variety of approaches to generate ideas. **Making:** - Using specialist equipment and a range of more complex materials and components. **Evaluate:** - Analyse the work of past and present professionals. Test, evaluate and refine ideas against a specification. Investigate new and emerging technologies. **Technical knowledge:** - Understand and use the properties of materials and electronic systems. **Cooking and nutrition:** - Understand the principles of nutrition and health. Become competent in a range of cooking techniques. Understand the source, seasonality and characteristics of a broad range of ingredients. The year 9 curriculum will be delivered in a rotation, where all students will study the projects listed below at some point in the year.

**Project 1 – Amplifier in a box**

- Understand the properties of materials
- Select from and use a wider, more complex range of materials and tools.
- Work accurately to construct the product.
- Develop and communicate design ideas using 3D annotated sketches.
- Understand the impact of using different woods on the environment and the responsibility of designers.

**Key Objectives for Project 1 (Amplifier in a box) – to be able to:**

- Demonstrate awareness of a range of materials, name them and suggest why they are appropriate
- Apply different more advanced manufacturing technique when making and understand the advantages and disadvantages of this method.
- Use the materials to good effect.
- Create detailed, improved ideas based on initial ideas and suggest materials.
- Comment on the environmental impact of using different woods.

**Project 2 – Resistant materials amplifier**

- Analyse a design brief.
- Analyse existing products.
- Produce a range of creative ideas.
- Use a range of materials effectively.
- Use a range of tools and equipment safely.

**Key Objectives for Project 2 (Resistant materials amplifier) – to be able to:**

- Analyse a design brief and write a detailed specification for the amplifier.
- Create a range of unique ideas based on the existing product research.
- Identify a number of electronic components and solder the amplifier circuit correctly.
- Use a range of tools and processes efficiently and safely without help.
- Evaluate the finished product against the original specification.

**Project 3 – Food**

- Use equipment safely and hygienically.
- Be able to use a small electrical appliance.
- Understand why starch rich foods and vegetables are important in the diet.
- Be able to combine foods to show a good balance of nutrients, colour and texture.
- Understand the meaning of a staple food.
- Be able to make a bread product.
- Produce a well presented and detailed design folder.
- Produce well planned and evaluated work.

**Key Objectives for Project 3 (Food) – to be able to:**

- To investigate the different types of starch rich foods and vegetables that are available for use in practical dishes.
- To understand the structure and nutritional values of selected ingredients.
- Demonstrate a range of practical skills using a wide range of different culinary equipment safely.
- To be able to evaluate a range of practical dishes.

**Project 4 –Product Design (Clock)**

- Understand the needs of a client/target market.
- Consider UMMFF (user, materials, manufacture, function, form) when creating designs.
- Produce a range of creative ideas inspired by chosen design movement.
- Making of high quality working clock.
- Use a range of tools and equipment safely.

**Key Objectives for Project 4 (Clock) – to be able to:**

- Research into a chosen design movement and present along with product analysis.
- Create a range of ideas inspired by research.
- Analyse and develop ideas by considering UMMFF.
- Use a range of tools and processes efficiently and safely without help.
- Evaluate the finished product against the original specification.

**Key Performance Standards**

**Knowledge:**

**Electronics:**

- Understand how more advanced electronic systems work.

**Resistant materials**

- Understand a more complex range of manufacturing processes
- Have an improved understanding of a range of woods, manufactured boards and metals, taking into account their properties.

**Food:**

- Understand the importance of temperature when cooking and storing food.
- Understand what a staple food is and why starch rich foods are important in a diet.

**Product Design:**

- Understand how the needs of a client can be used when producing a range of ideas.

**Skills:**

**Designing:**

- Research and analyse similar commercial products with comments reflecting user’s needs.
- Respond creatively to the design brief.

**Making:**

- Be able to manufacture using CAD/CAM and following a manufacturing plan.
- Be able to use a range of equipment safely whilst showing a range of practical skills to create healthy dishes.

**Evaluating:**

- Evaluate products using the thoughts of others in order to improve a design.
- Be able to test and evaluate products, comment on current and future technologies and the ethics of products.