

Technology Year 7 Curriculum: There are 5 main areas of design and technology that will be covered in year 7: **Designing:** - Using research to identify user's needs. **Making:** - Using specialist equipment and a range of materials. **Evaluate:** - Test, evaluate and refine ideas taking into account the views of others. **Technical knowledge:** - Understand and use the properties of materials. Understand more advanced electrical and electronic systems. Understand mechanical systems. **Cooking and nutrition:** - Understand the principles of nutrition and health. Become competent in a range of cooking techniques. The year 7 curriculum will be delivered in a rotation, where all students will study the projects listed below at some point in the year.

Project 1 – Electronic nightlight

- Analyse a design brief.
- Produce creative design ideas.
- Understand about resistors, batteries, LEDs, LDRs, switches, transistors.
- Recognise a range of plastics
- Work with a range of tools, materials and be able to solder accurately.
- Produce a well presented and detailed design folder.

Key Objectives for Project 1 (Electronic nightlight) – to be able to:

- Write a design brief commenting on the problem and explain how to solve it.
- Create a range of ideas with detailed notes related to the specification.
- Combine some initial ideas to improve the solution with notes on changes.
- Use a range of tools and processes efficiently and safely without help.
- Evaluate using the specification and thoughts of others and suggest improvements to the design.
- Suggest how basic components could be used to work in the circuit.

Project 2 – Resistant Materials – Wooden Boat

- Use a range of tools and processes and machines safely.
- Explain the advantages and disadvantages of different materials.
- Use and apply a variety of different techniques to communicate ideas.
- Construct and explain a variety of different mechanisms.
- Produce a well presented and detailed design folder.

Key Objectives for Project 2 (Resistant Materials) – to be able to:

- Work safely with a range of hand tools.
- Use workshop machinery safely and independently.
- Describe forms of movement and construct simple mechanisms.
- Suggest suitable tools and equipment for specific tasks.
- Justify design features through detailed annotation.

Project 3 – Food

- Understand the term sensory descriptor.
- Produce a star diagram, key and product profile.
- Peel, grate and chop fruit and vegetables.
- Demonstrate the rubbing in method.
- Demonstrate the creaming method using a hand held mixer.
- Understand and demonstrate sound hygiene and safety rules.
- Understand the principles of healthy eating.
- Produce a well presented and detailed design book.

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

- Plan a dish to be made in a 50 minute lesson.
- Demonstrate how to use the oven safely.
- Use a range of tools and equipment safely and without help.
- Evaluate the design and making of a food product.
- Suggest how a food product might be improved.

Project 4 – Product Design (Travel Game)

- Creative designing based on environmental issues.
- Use of CAD/CAM to manufacture components.
- Desk top publishing rule booklets.
- Writing manufacturing plans.
- Learning about time management.
- Evaluate and test products.

Key Objectives for Project4 (Product Design) – to be able to:

- Respond creatively to the design brief.
- Be able to desk top publish with flair.
- Use CAD/CAM confidently and appropriately.
- Be able to manufacture in line with a manufacturing plan.
- Understand the importance of time scales and deadlines.
- Be able to test and evaluate products.

Key Performance Standards

Knowledge

Electronics:

- Understand a systems approach, using processes that respond to inputs and control outputs.
- Understand and be able to use electronic components.

Resistant materials:

- Understand and be able to apply knowledge of materials.
- Describe forms of movement and construct simple mechanisms.

Food:

- Understand basic principles of nutrition and health and apply knowledge of materials.
- Understand and be able to use hand equipment, hobs and ovens.

Product Design:

- Understand how to use a range of materials, apply them to my work and state their advantages and disadvantages.
- Understand how to use CAD/CAM in my project.

Skills

Design:

- Write a design brief commenting on the problem and explain how to solve it.
- Understand and be able to apply drawing and rendering techniques when designing.

Make:

- Use a range of tools and equipment safely and without help.
- Suggest suitable tools and equipment for specific tasks.

Evaluate:

- Evaluate using the specification and thoughts of others and suggest improvements to the design.
- Suggest how a food product might be improved.