



# DESIGN & TECHNOLOGY - KS4

## Year 10

### Half Term 1

The categorisation of core materials. Ferrous and non-ferrous metals, paper and boards, thermoforming and thermosetting polymers, fibres and textiles, natural and manufactured timbers. Practical skills board: wood joints, plastic forming, laser cutting.

### Half Term 2

Using communication techniques to present design ideas: sketching, 3D drawing (oblique, isometric, perspective), orthographic and exploded views, assembly drawings, 3D modelling.

### Half Term 3

**Timber trinket box project:** design contexts, sources of timber, selection of timber, strengthening timber, stock forms and size, manufacturing processes, surface treatments and finishes for functional and aesthetic purposes, equipment and processes used to make prototypes.

### Half Term 4

**A solar powered torch project:** energy generation, storage and choosing appropriate sources, electronic systems, programmable components, systems and schematic drawings.

### Half Term 5

**Mechanical devices used to produce movement:** levers, linkages, cams, followers, pulleys and belts, cranks and sliders, gear types, maths in practice. Mechanisms skills board.

### Half Term 6

Preparing for component 2: controlled assessment, design process.  
NEA: Investigation of needs and research.

## Year 11

### Half Term 1

All design and technological practice takes place within contexts which inform outcomes, challenges that influence the processes of design and making, Investigate the work of professionals and companies to inform design.  
NEA: investigation of needs and research continued, specification.

### Half Term 2

The impact of new and emerging technologies, evaluating new and emerging technologies to inform design decisions.  
NEA: design ideas, review of design ideas, development of design ideas.

### Half Term 3

**Smart and composite materials and technical textiles.**  
NEA: development of design ideas continued, communication of design ideas, review of chosen designs, selection of materials.

### Half Term 4

**Maths:** preparing for your exam and revision.  
NEA: manufacture, skills and processes, quality and accuracy, testing and evaluation.

### Half Term 5

Preparing for your exam and revision.

### Half Term 6

Exam.





# ENGINEERING - KS4

## Year 10

### Half Term 1

Reading engineering drawings.  
Interpreting engineering drawing in preparation for manufacture.

### Half Term 2

Engineering materials.  
Planning for manufacture and risk assessment.

### Half Term 3

Manufacturing processes.  
Workshop practice: marking out and using tools and equipment.

### Half Term 4

Manufacturing processes.  
Workshop practice.  
NEA assessment: working towards.

### Half Term 5

Manufacturing processes.  
Workshop practice and NEA assessment.

### Half Term 6

NEA assessment: submit for moderation.

## Year 11

### Half Term 1

Scales of manufacture.  
Preparing for scale manufacture.  
  
NEA assessment: working towards.

### Half Term 2

Quality.  
CAD/CAM programming.  
NEA assessment: working towards.

### Half Term 3

Inventory management: lean manufacturing.  
NEA assessment 2: resubmit for moderation.  
NEA assessment 1: submit for moderation.  
Examination: early opportunity.

### Half Term 4

Globalisation.  
CNC setup and operation.  
Quality control activities.

### Half Term 5

Revision of topic areas and exa .  
Examination: final opportunity.  
CNC setup and operation.  
Quality control activities.  
  
NEA assessment 1: submit for moderation.

### Half Term 6





# FOOD AND NUTRITION - KS4

## Year 10

### Half Term 1

**Introduction to nutrition:** eat well guide, fruit and vegetables (provenance, food science, linked skills/recipes).

### Half Term 2

**Protein:** meat, fish, eggs, fish and alternatives (provenance, food science, linked skills/recipes).

### Half Term 3

**Fats:** butter, oil, marg, milk, cheese and yoghurt (provenance, food science and linked skills/recipes).

### Half Term 4

**Carbohydrates:** cereals, rice, sugar (provenance, food science, linked skills/recipes).

### Half Term 5

**Factors affecting food choice:** religion, ethics, sustainability, environmental impact, allergies, medical issues, special diets, life stages.

### Half Term 6

**Methods of cooking:** convection, radiation, conduction, moist, dry and frying methods. Mock exam and NEA 2 prep.

## Year 11

### Half Term 1

NEA 1.

### Half Term 2

Completion of NEA 1 and begin NEA 2.

### Half Term 3

NEA 2 practical exam and written work.

### Half Term 4

NEA 2 completion.

### Half Term 5

Exam preparation.

### Half Term 6

Exam preparation.

