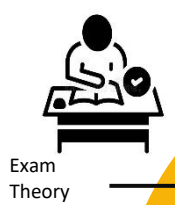


# Resistant Materials Learning Journey

Prepares you for further study or roles in:

Engineering, Furniture Design, Architecture, Construction, Product Design, Set Design, Building, Fashion Design, Manufacturing, Computer Game Design



Exam Theory

NEA Coursework

**YEAR 11**

**Begin Non Examined Assessment Coursework**

Designing Principles, Making Principles

Materials & their working properties

Energy, materials, systems & devices.

TECHNOLOGY REVOLUTION

New & Emerging Technologies

Advanced Drawing skills: Engineering Drawings, 1<sup>st</sup> & 3 angle projection



**YEAR 10**

**Multi Jointed Photo Frame**

Knowledge- Theory: Paper & Boards. Timber based Materials. Metal based materials. Polymers. Textile based Materials

Skills- Graphic Techniques: Isometric/ Oblique, 1 point & 2 point perspective drawings.

Application of the Design Process/ skills learnt at KS3

Advanced Practical skills: Widget made with precision- using Wood, Metal & Plastic from an Orthographic Drawing.

MOCK NEA Clock Project

Tech soft 2D Design Keyring

Skills- Advanced Practical skills: selecting and using appropriate Hand & Machine tools independently & with confidence to shape, form, construct & finish component parts to a high quality and standard



**Automata Toy**

End of unit test

Skills- Advanced Practical skills: Drawing and making of four different wood joints: Mitre, Half Lap, Dowelled Butt and Bridle Joint. Including decorative techniques such as Pyrography

Knowledge- Production types: Mass, Batch, One-off & Continuous production Knowledge- Explore the use of CAMS used in industry to create automated products

Knowledge- Introduction to Cams and Levers with links to Engineering & product production processes

Research skills- Creation of products with a user/ client/ target market in mind (in readiness for GCSE option)

Skills- Graphic Techniques: 3D drawings, plastic and wood grain shading techniques

Skills- Advanced CAD skills using Tech Soft 2D Design Tools & the Laser cutter to create cam parts

Selecting and using Hand & Machine tools for decorative & functional purposes

Development of the Design Process

**YEAR 9**

**Electronic Phone Holder**

Skills- CAD/ CAM using Tech Soft 2D Design Tools & the Laser cutter

Knowledge- The need to source renewable energy Depletion of fossil fuels, rising energy costs, higher demands

Skills- Developed practical skills: selecting and using appropriate Hand & Machine tools independently

Threshold Test

Development of Health & Safety in the workshop & Industry

Knowledge- of materials available including Electronic components



**YEAR 8**

**Hand and Machine skills**

Knowledge- Environmental Impact: Plastics in the ocean

Knowledge- Current Environmental issues, Pollution, Global warming

Recap Health & Safety in the workshop and Expectations

Threshold Test

Introduction to materials

Knowledge- Depletion of Fossil Fuels

**YEAR 7**

**Sustainable Garden Wildlife Project**

Skill: Introduction to Basic Practical Skills

Knowledge- Sources of Wood & Plastics

Introduction to Health & Safety in the workshop

Building on the use of Hand & Machine tools.

Baseline Test



Knowledge- Responsibly resource materials FSC & Sustainability- 6R's

FSC

Introduction to Basic Hand & Machine tools.

Introduction to the Design Process

What we learn and when we learn it!

