Project 1; Balance Lamp - Why do we study Resistant Materials?

By studying Design and Technology we allow opportunities to develop skills and knowledge across a wide range of disciplines using creative, practical and computer aided tools. Technology is all around us and is driven by market pull, social factors and clients' needs, which are reflected in the reactive design and manufacture of prototypes and end products. Students must understand the properties of materials across the breadth of subject areas to problem solve and make informed decisions that influence design performance, practicality, aesthetics, suitability and cost. Students will learn to communicate ideas through hand sketching in 2D and 3D, using CAD to develop designs and CAM outputs within their workshop manufactured prototypes.

The balance lamp project focuses on expanding your practical skills developed in year 7&8 using more complex machinery and tools. This develops your material and process knowledge, supporting successful design decisions for your lamp and future projects.

Practical sawing, sanding, drilling and assembly with the Racing Car and Game Box projects

Using digital and creative skills

Electronic circuit work within the Racing Car and FloGlow

Manufacture of the aluminium arms

Electronic circuit manufacture

OnShape & CAD skills

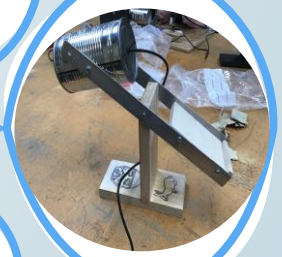
Bespoke finishing & evaluation

Manufacture of the plywood base

Upcycling and usings JIGs

Hand sketching skills

Location research and personalised designs



Project 2; Passive Amplifier - Why do we study Resistant Materials?

By studying Design and Technology we allow opportunities to develop skills and knowledge across a wide range of disciplines using creative, practical and computer aided tools. Technology is all around us and is driven by market pull, social factors and clients' needs, which are reflected in the reactive design and manufacture of prototypes and end products. Students must understand the properties of materials across the breadth of subject areas to problem solve and make informed decisions that influence design performance, practicality, aesthetics, suitability and cost. Students will learn to communicate ideas through hand sketching in 2D and 3D, using CAD to develop designs and CAM outputs within their workshop manufactured prototypes.

The passive amplifier project uses the pupils practical skills and knowledge built through the balance lamp and previous projects to give them freedom within the design of a bespoke passive amplifier. They can manufacture using timber, polymers or CAM, or a mixture, providing them with opportunities to take design risks throughout the iterative process of sketching, modelling, testing, prototyping and manufacture.

Practical timber, polymer and CAM knowledge and skills from the balance lamp and year 7&8

Using CAD CAM skills and knowledge

Creative design skills from GiaB, FloGlow, & Pencil Case

Client & location research

Initial ideas & sketching skills

Modelling

Manufacturing of a bespoke product

Context analysis

Brief & Specification

Work of Others inspiration

Technical drawings for manufacture