Bat Doctor to find out about

the housing needs of bats

# Pewter casting 🕞 Slot together furniture 🔞 Passive speaker 🛭 🔁 Cross curricular

# **DESIGN** TECHNOLOGY KS4

**Y10 UNIT 1** 



**Y10 UNIT 2** 

(a) Amaths, E1M

How do I design to meet a user's requirements?

Who can be a client?

How can I gather information about my client?

How do I research my client?

What are hardwoods and softwoods?

What is timber and how is it grown responsibly?

How can I use isometric and other drawing

How can I safely use hand tools and machines to

How can I join timbers using different fixings?

What is sustainability?

produce a finished product? boxes

**RSPB Newtown** Creek, Isle of Wight to find out about the



Maths

How can I use CAD/CAM to manufacture a quality product?

What is CAD/CAM?

How can I use CAD and CAM to model

How do I 'plan up' for manufacture to save waste?

How can I include pre-existing and pre-manufactured items into my design? How can I manufacture within a tolerance?

What is a laser cutter?

YR10

Hampshire and Isle of Wight Wildlife Trust to learn more about the needs of our local wildlife Local primary school to test our products



product?

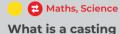
How can I use anthropometric data?

How can I join materials without fixtures and fittings?

How can I model and prototype my ideas using lightweight materials?

How can I visualise a

two dimensions?



### What is a casting mould?

What is a ferrous and non-ferrous metal?

What are the properties of metals?

How can I include surface detail to a cast product? How do I prepare a CAD/CAM file for manufacture?

How can I use PPE to be safe when working with materials?

How can I use CAD/CAM to produce a 3-dimensional metal outcome? What are mould layers?

How can I ensure a quality of finish on my products?

What are the qualities of a finished metal product?

Y10 UNIT 3

**Y11 UNIT 2** 

**Y11 UNIT 3** 

Y10 UNIT 3





IKEA, Southampton

## Art and Design

### What modifications can be made to improve the use of an existing product?

What shapes help sound amplify?

When can I use models and prototypes to test my ideas and designs? How do I include information about existing products into the design process?

What are Art and Design movements?

How can I refer to/acknowledge Art and Design movements in my designs? How can I use modelling/prototyping at 1:1 to show my ideas and designs?

How can I combine and join materials in 3-dimensions?

How can I use layers to shape materials and make a 3-dimensional outcome? What is a quality of finish for timber?

### Investigate, Design, Make, Evaluate

You will respond independently to a design context continuing into Year 11.

### YII UNIT I

### How can I investigate a design context?

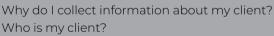
What is a design context?

What are the needs of my client?

What problems have I identified within the design context?

What is primary and secondary research? How can I use research to help identify the problems within a design context?





### **Y11 UNIT 4**

### **Evaluate**

### What is an effective evaluation? How you I use a

specification to evaluate my final outcome?

When is it important to get the view of a client?



### What are the processes involved in modelling, prototyping to generate a final product?

What is a prototype?

Why do I make models at scale?

What is a 'proof of concept' model?

How can I use CAD/CAM to produce a physical product?

What do I do to support designing

How can I use the information from a

design problem to generate a design

How can I use sketches and drawings

to communicate my design ideas?

What is the design process?

What is a product life cycle?

effective products?

How do I compare hand tools and CAD/CAM?

How can I shape materials?

What is a quality finish for a product?

What is Quality Assurance and Quality Control?

How can I safely use tools?

### How can I combine materials?

## **Exam preparation**

Form courses?

How can I make sure I am revising effectively for

How do I memorise and recall knowledge I need for the exam?

How do I maximise marks in this subject's exam?

What are the gaps in my knowledge and how can I address them? How do I approach exam questions in this subject

to ensure I reach the highest grade? What do I need to do to prepare myself for Sixth

## **BRIDGING UNITS**

How can I design to solve problems? Identify a design problem and research existing products that have tried to solve the problem before.

How can I design using the style and the influence of other designers? Create a timeline of influential designers over the last two centuries.

How can I effectively test materials strength, resistance to corrosion and degradation?

How can I work within and test the mechanical and physical properties of materials?



techniques to communicate my designs and ideas?

How can I reuse materials?

Y10 UNIT 3

# How can I manufacture a flat pack

How can I gather information about a range of users?

What is a design context?

What is an ergonome? What is a scale model or prototype?

three-dimensional object in







