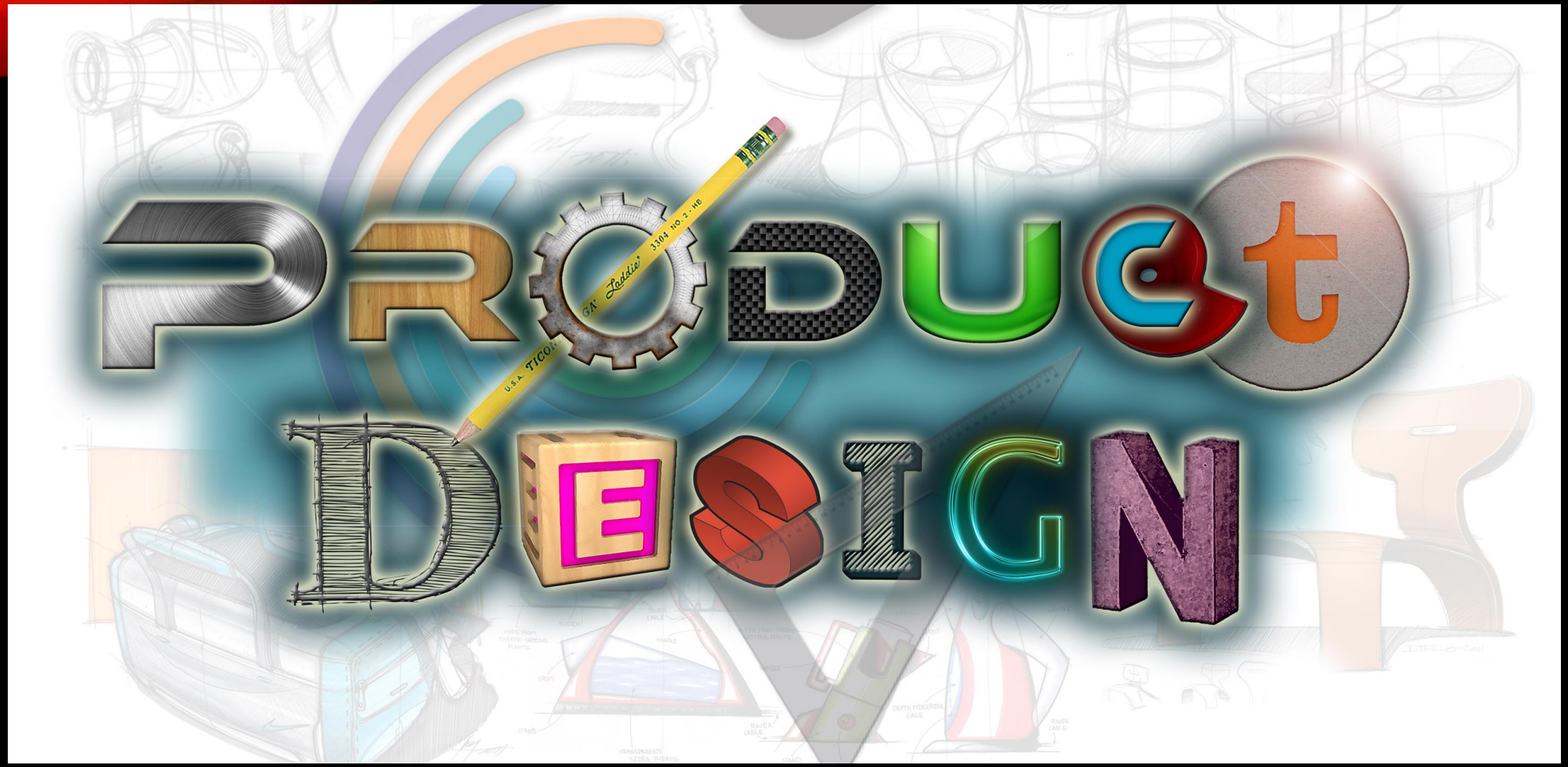

PRODUCT
DESIGN

DESIGN & TECHNOLOGY
PRODUCT DESIGN

- Thank you for choosing to study **A-level - Product Design** at Penistone Grammar School

- This document is designed to give you a brief overview of the course, some suggested resources/wider reading so you can familiarise yourself with the specification and course requirements and give you an introduction to the first design task of Year 12.

DESIGN & TECHNOLOGY
PRODUCT DESIGN

- The course will delivered by 2 different members of the design & Technology department
  - Mr Dobson – Will deliver the practical NEA (Coursework element) worth 50%
  - Mr Jones – Will deliver the theory side of the course (Exam element) work 50%

A LEVEL ASSESSMENT OVERVIEW

Component 1: Principles of Design and Technology	Component 2: Independent Design and Make Project
• Written exam, externally assessed • 2 hours 30 minutes • 50% of qualification • 120 marks	• Non-examined assessment, internally assessed and externally moderated • 50% of qualification • 120 marks
The paper includes calculations, short-open and open-response questions. as well as extended-writing questions focused on: • Analysis and evaluation of design decisions and outcomes, against a technical principle, for prototypes made by others • Analysis and evaluation of wider issues in design technology, including social, moral, ethical and environmental impacts. • Students must answer all questions. • Students must have calculators and rulers in the examination Content is Topics 1 - 12	The investigation report is internally assessed and externally moderated. • Students will produce a substantial design, make and evaluate project which consists of a portfolio and a prototype • The portfolio will contain approximately 40 sides of A3 paper (or electronic equivalent) There are four parts to the assessment: Part 1: Identifying Opportunities for Design Part 2: Designing a Prototype Part 3: Making a Prototype Part 4: Evaluating own Design and Prototype

EXAM BOARD INFORMATION

Specification – Edexcel Design & Technology – Product Design (2017)

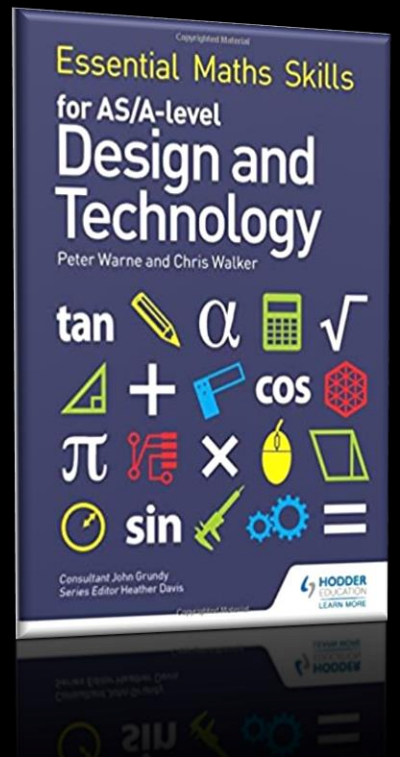
https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/design-technology-product-design-2017.html

Resources for Product Design

Product Design Textbook

Essential Maths skills for D&T

You will have access to a digital copy of these textbooks in school



RECOMMENDED EQUIPMENT

- A large lever arch file and file dividers to keep work organised into sections
- An A3 sketch book/A3 portfolio display folder for A3 design work, sketching and storing coursework pages
- **Basic essential equipment – Pen, HB pencil, Eraser, 300mm rule, pencil sharpener, compass, calculator and maths set**
- ***Recommended equipment – Black Fine liner, 0.5mm mechanical pencil, set of good quality coloured crayons, highlighters, Circle template, ellipse template, set square and 30/60 square***

YEAR 12 DESIGN TASK

Your first project will be a redesign and manufacture of an existing desk lamp

- This project is designed to enhance and develop your :

  - Design thinking, creativity, innovation and problem solving skills
  - Designing, sketching and communication skills
  - Modelling skills (both 2D and 3D manual and CAD)
  - Introduce advanced materials properties and manufacturing processes
  - Improve your CAD skills and manufacturing abilities
  - Improve time management
  - Produce high quality products
  - Evaluating products and suggesting areas for development and improvement

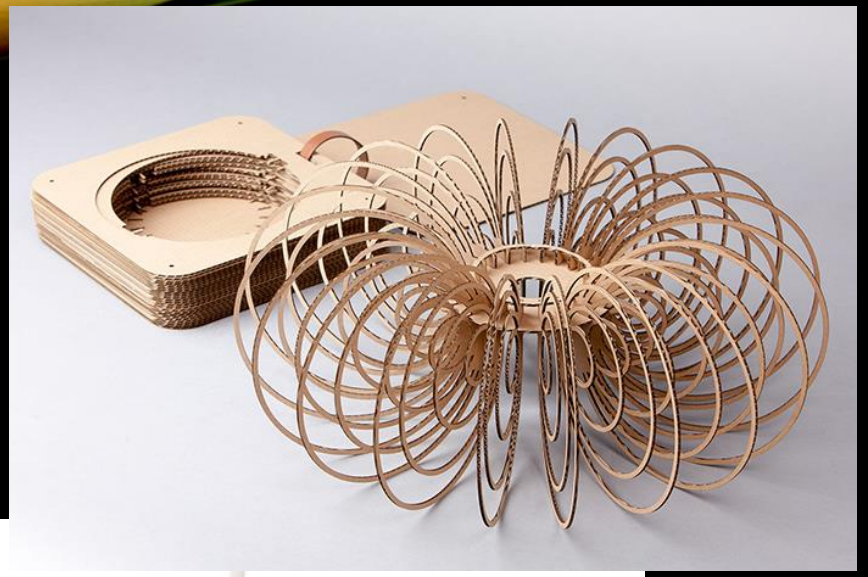
BASIC LAMP DESIGN

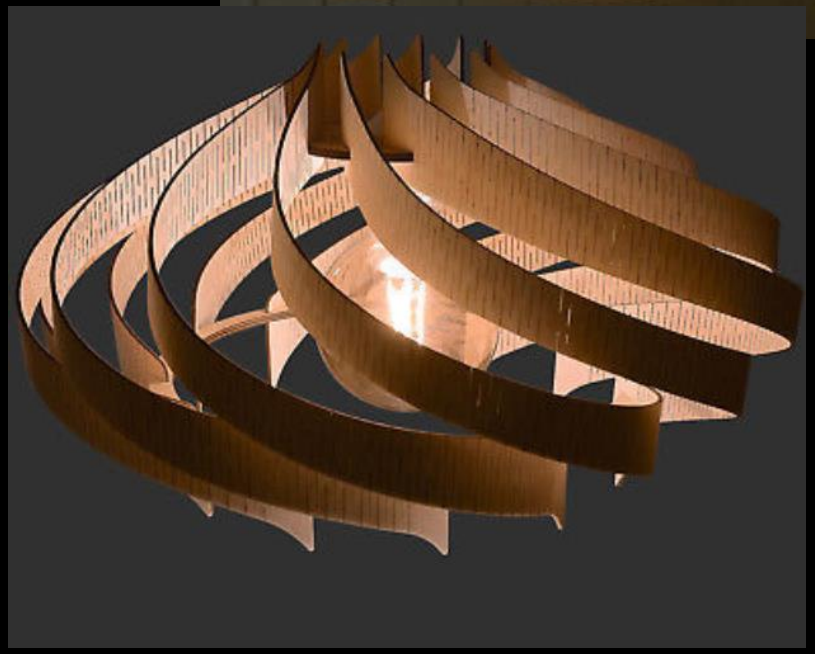
Design Challenge

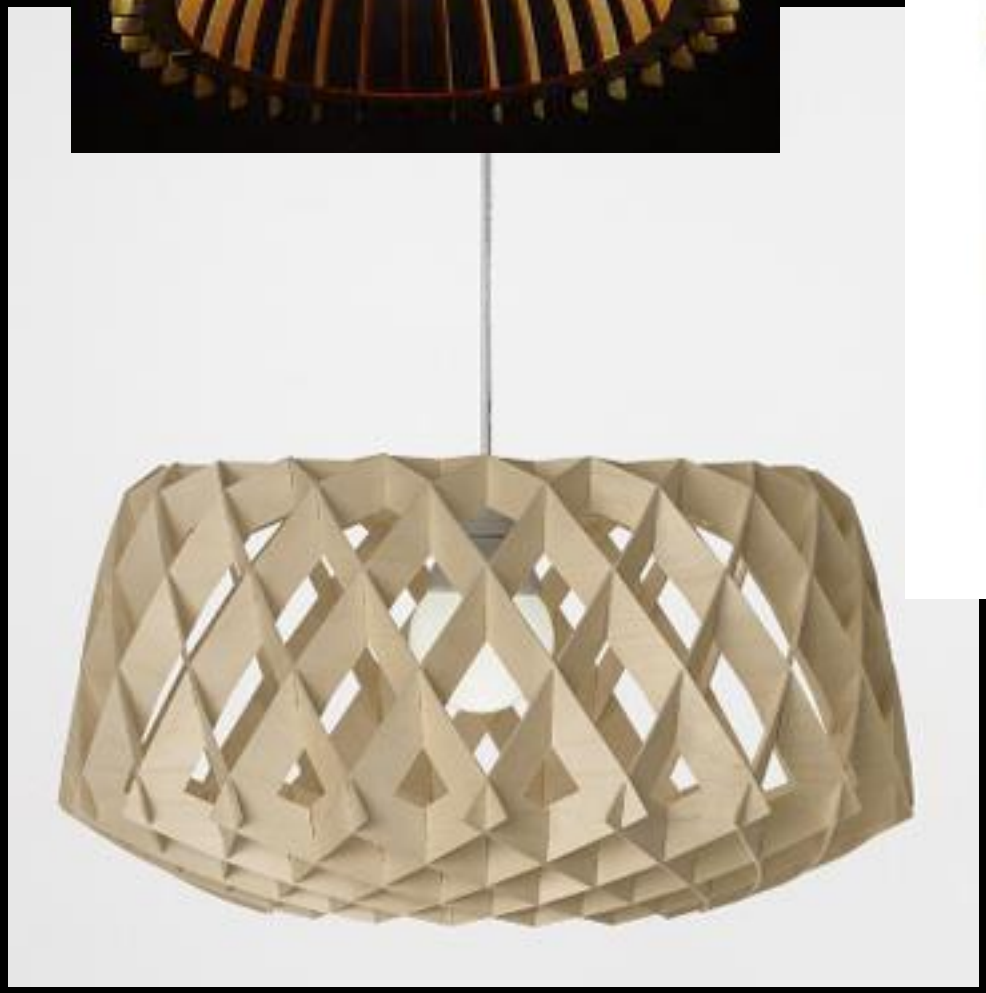
- Your first task will be to redesign the lamp shade opposite so that it can be manufactured using only a laser cutter and can be assembled or slotted together without the use of any adhesives
- The shape, style and material used will be entirely up to you as long as it can be cut on our school laser cutter
- All work to be completed on PowerPoint – sketches and images will need to photographed and uploaded to your PowerPoint

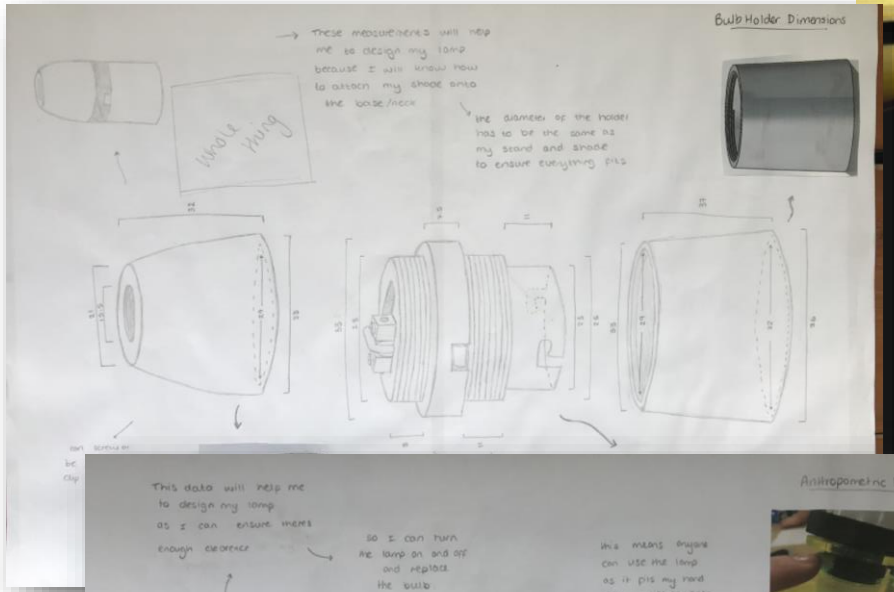
TASK 1

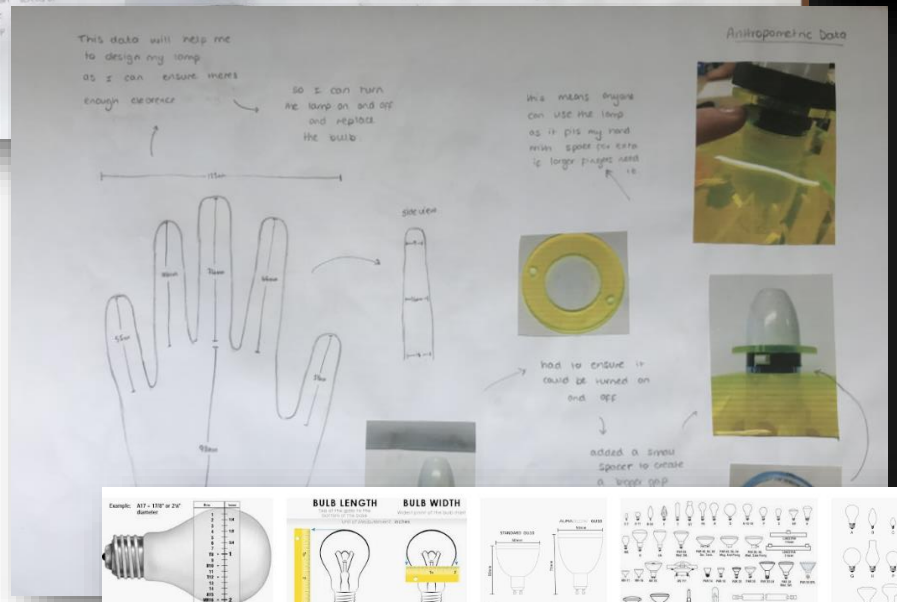
Create a design mood board of existing products

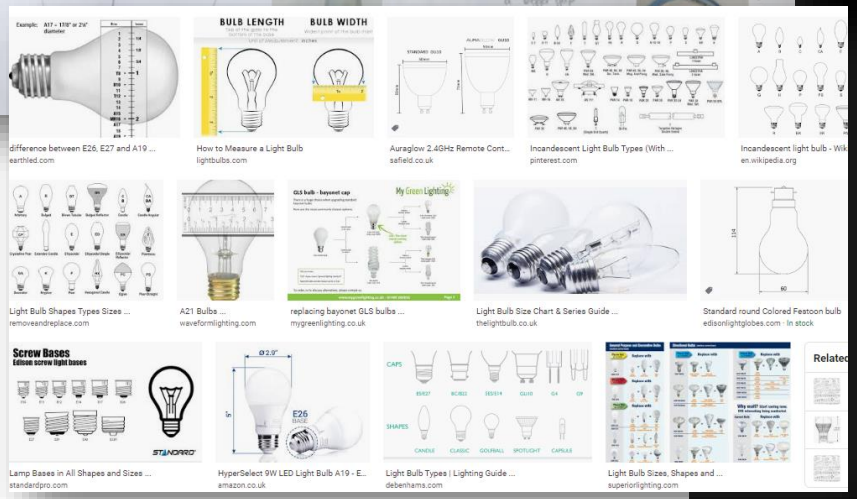










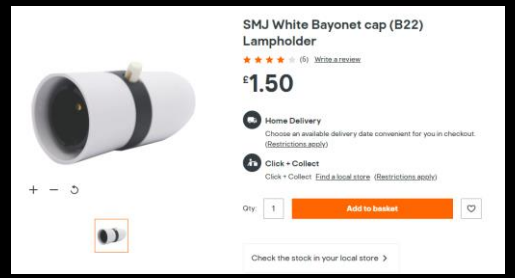


TASK 2 - INVESTIGATION

You will need to carry out some **basic research** before you start designing your lamp shade

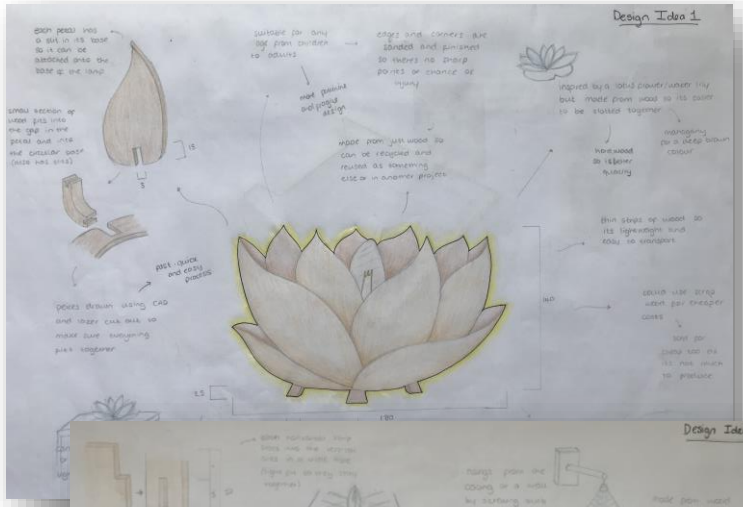
This should include:

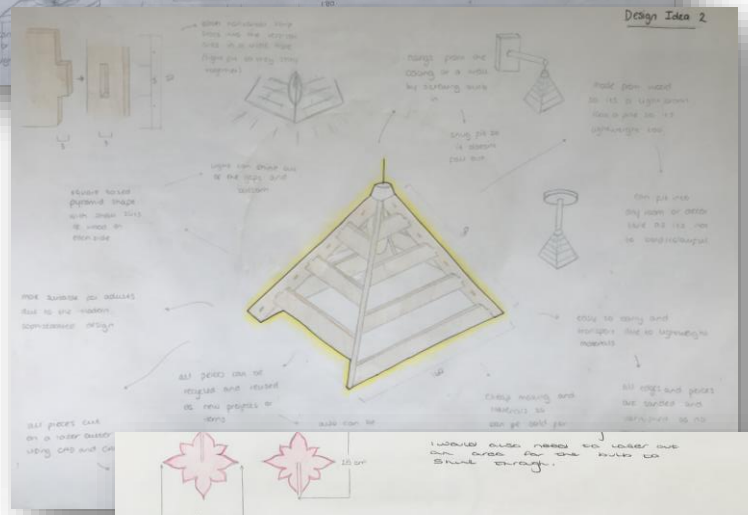
- Bulb holder sizes and dimensions
  - B&Q Bulb holder link
- Bulb sizes

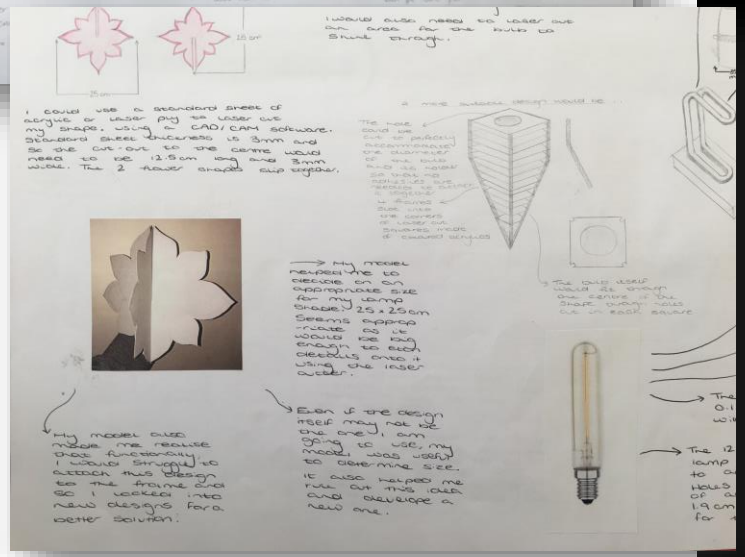


Anthropometric/ergonomic data

- Hand/finger sizes to allow for switching the lamp on and off and easy removal and replacing of bulbs etc.







TASK 3 - DESIGNING

Produce 4 different design ideas pages

Try to include a range of communication techniques

- 3D/Isometric
- Exploded views
- Detailed views
- Construction methods
- Detailed annotation

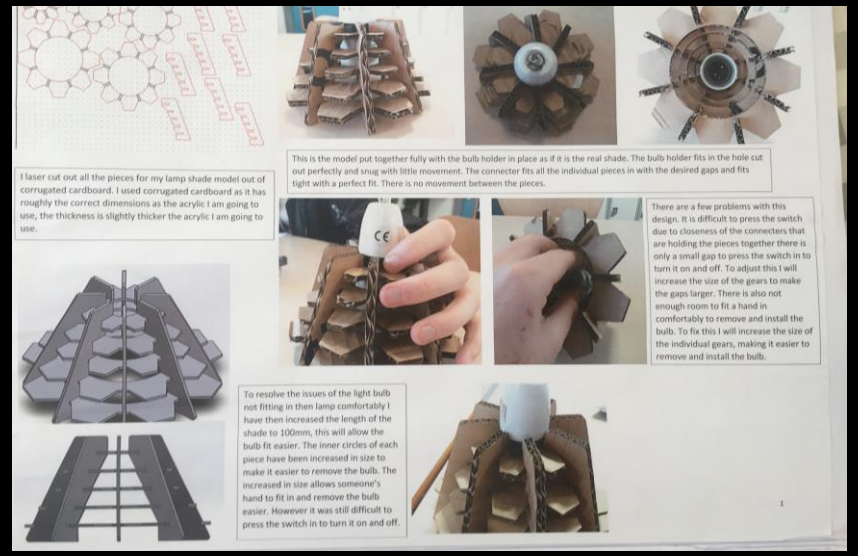
TASK 4 - MODELLING

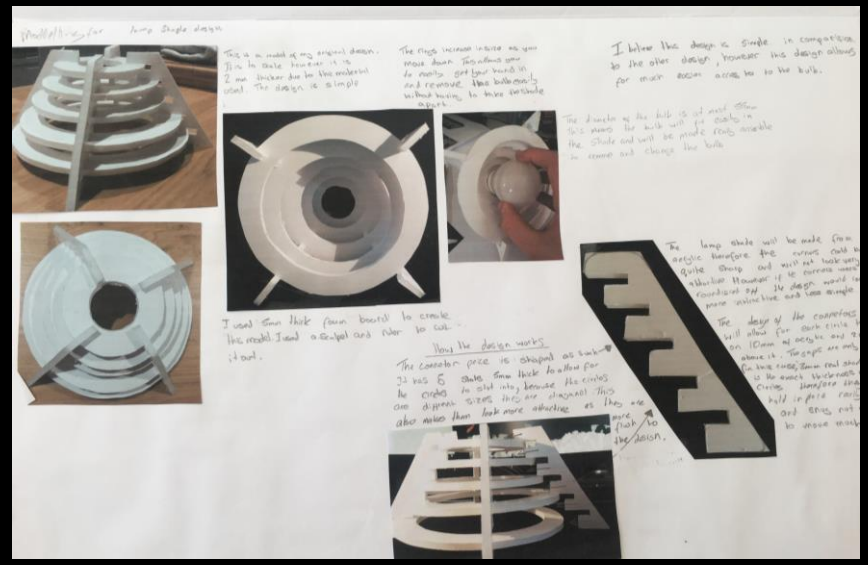
Model one of your design ideas in cardboard or suitable modelling material

This model should:

- be actual size (to scale)
- Test that the design is workable
- The design will slot together easily
- Allows the user to easily remove and replace the bulb

You should evidence this work through a series of annotated photographs and sketches





BE CREATIVE…

You can make a start on this work as soon as possible

Feel free to e-mail any questions or queries you may have to:

bDobson@penistone-gs.uk

If I don't see you before we return in September have a great summer and stay safe

Thanks Mr Dobson & Mr Jones