

Design Technology (Resistant materials)
Product Analysis, Product Design , & Materials
Year 7
Home Learning Booklet

Name _____

Tutor Group _____

Subject Teacher _____

Given out: Monday 21 October Hand in: Monday 4 November

Parent's Comment

Staff Comment

Target

Aims and Objectives

The aim of this booklet is to develop your understanding of Product Analysis and Product Design; also to look at man-made and natural materials. Finally to look at the tools you are most likely to use in school.

- Learn the skills that are needed to analyse someone else's design.
- Develop a product of your own.
- Learn to improve presentation skills.
- Enforce your knowledge of equipment used in school

Tasks

T1) Reading

A) Using the range of information supplied answer the questions set.

T2) analysis

A) We are going to ask you to look at a product— look at how it works, what it is made from and how well you think it is made.

B) We are going to ask you to look at a product in your own home and look at how it works, what it is made from and how well you think it is made.

C) You will then take what you have found and come up with a design of your own that changes some of the product's features and adds your own ideas.

D) Finally you will evaluate your design ideas and ask others what they think.

T3) Fill in the following areas; types of equipment and their uses and health and safety when using.



TASK 1

WOOD RECYCLING / REUSING and UP CYCLING



In landfill wood is a wasted resource. Wood can be reused as building material, recycled into mulch for landscaping or pulp for paper production and used beneficially as a fuel. Reusing and recycling wood reduces the need to cut down trees. Eighty percent of materials thrown away are resources - not waste.

Can wood be recycled?

Wood that has been pressure treated, painted, varnished or otherwise finished is not a good candidate for recycling. However, it can be used for upcycling by removing the treatments such as paint so that you are left with fresh wood that then can go on to be used in repairs or in building. The main uses for recycled wood are compost and garden amendments like mulch. Many people who claim to recycle wood burn it for heat or energy.

What types of wood can be recycled?

Before you start working with recycled wood, you should familiarise yourself with the three kinds of wood: hardwood, softwood and plywood. Hardwood comes from deciduous trees like oak, walnut, cherry, mahogany and maple. Softwood is made from coniferous trees like pine, hemlock, spruce, cedar and redwood.

How does recycling wood help the environment?

Wood recycling also helps reduce environmental impact by preventing less trash from ending up in the landfills, which in turn means reduced air and water pollution. Wood recycling is an ideal technique for ensuring that the environment is maintained in its natural state.

Having read the information on the previous page can you answer the following questions?

What types of wood are good for recycling or upcycling?

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What types of wood are not good for recycling or upcycling?

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How does wood recycling or upcycling help the environment ?

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TASK 2 Product Analysis

Product analysis can be carried out by: 1. An individual product being analysed. 2. Comparing a number of similar products with each other using the same criteria.

WHAT IS THE PURPOSE OF PRODUCT ANALYSIS?

A product may need analysing by a potential customer to help him/her decide whether it is worth buying. A product may need analysing so that the design can be improved. Sometimes a prototype or model may be analysed. In this way improvements can be made before the full sized, costly product is manufactured.

ERGONOMICS

Is the product the right size? (height, length and width) Will a potential customer be comfortable when using the chair? Will this chair fit a range of customers or would it be suitable for a range of different size customers?

COST

How much will it cost to manufacture the product? How much will it sell for in the shops?

AESTHETICS

Does the product look good? Is it stylish? Is the style to the customer's liking?

CONSTRUCTION METHOD

How has the product been made? What joining methods/ techniques have been used? Is the product well constructed? (Will it fall apart when in use? Will it scratch easily? etc..)

CLIENT REQUIREMENTS

Is the product what the customer wants? What changes are required to make the product suitable for the client/customer? Does the customer like the product?

HEALTH AND SAFETY

Is the product safe? Would it be dangerous for some customers to use? For example small children.

COLOUR AND TEXTURE

Is the colour/texture of the product effective? Is it what the customer wants?

MATERIALS

Are the materials suitable for this type of product? Are they quality materials or do they make the product look cheap?

ENVIRONMENTAL IMPACT

What is the environmental impact of the product? Is it manufactured from materials supplied by resources that can be replaced? For example, if manufactured from natural woods, have they been supplied from sustainable forests? Can the materials be recycled or reused?

Look at the chair in this picture.

2A) When analysing a product first prepare a list of questions, this is known as a criteria. The criteria listed below could apply to the product when it is being analysed.



ERGONOMICS

AESTHETICS

CONSTRUCTION METHOD

HEALTH AND SAFETY

COLOUR AND TEXTURE

MATERIALS

ENVIRONMENTAL IMPACT

2B) Choose a product from your home. In the middle of this page produce a detailed drawing of it.

Considering the criteria previously listed (over page) write comments about your chosen product around your drawing. Think about your answers- they should include your own opinion about the product.

2C) -Product Development

On this page we would like you to develop an idea of your own. Your task is to design a storage unit that would hold books or small items and that could be sold to a range of customers. It must include the following criteria:

- Be made from two different materials.
- The type of finish that would be used.
- Where it would be placed.
- How would you make it secure so that it will not fall over?

Produce some drawings of your ideas and write notes around them explaining why you have chosen specific design features.

Produce a final drawing of your product in this box.

2D) What do other people think about your product? Ask your friends & family to write a comment in the space below.

Good points

Things you could change

TASK 3

Basic Tools used in school



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Health and Safety Tip



Name

Use

Important rule ?