

Year 7 Home learning 2020 - Design & Technology

Novelty Earphone Storage – Sustainability/Laser Cutter

Design Context:

Environmental issues are more and more important to consumers to help reduce your carbon footprint and try to help the environment. You have been asked to design and manufacture in a socially and environmental responsible products that will reduce the effects on the environment and reuse existing materials/products or materials reclaimed or up cycled

As a designer, you have a social responsibility - a duty to act in a way that benefits society and the environment. Environmental, social and ethical factors can be tricky to get your head around.

Design Brief:

Using mainly **recycled or reclaimed materials** design a sustainable novelty ear phone storage holder or produce a range of ear phone holders. Your product or products should be **as environmentally friendly as possible** to reduce the carbon footprint. Most materials should be either reclaimed or recycled to produce a high quality and unique product that is **functional, aesthetic pleasing and a bit of fun.**

You should develop a range of creative ideas to ideally use old materials again in a different manner. You are not restricted on materials so long as most of the materials or components are reclaimed.



Task 1 Investigation - Image board

Investigate other creative earphone holders that are currently available and produce an image board designs below. Using annotation, state why have you chosen these designs to study, what do you like about the existing products that you have found.



D&T Tips for a successful and a high grade!

- Collect visual images of existing ear phone holders
- Cut and paste to fill up this page to form a collage
- Add detailed comments (annotation) to explain why you have chosen these images and what do you like about them.



Task 2 Investigation – Dimensions.



It is impossible to design for a product if you do not know the sizes needed. Measure your earphones and record in the table below, always work in mm's.

Product:	Length:	Width:	Thickness:

Task 3 – Specification

Using the specification below, to help you generate a range of ideas (7 or 8). Use your sketching skills that you have learnt recently to help you draw in a variety of ways. Your designs must include the following:

Specification:

- It must appeal to your target audience. (state your target audience below),
- It must be mainly or entirely made from ethically sourced materials e.g. reclaimed or recycled materials.
- It must be functional as well as aesthetically pleasing e.g. it must work and look good.
- It must hold securely and neatly all wires easily.
- It must be light weight and portable, yet strong
- It must be able to fold away or be flat packed to save space and store easily.
- It must be a quality and well-constructed product.
- It must have a durable finish to protect the materials from wear and tear.
- It must be able to be manufactured in either batches or mass produced.

My target audience are:

Discuss in detail who and what your target audience is or are.

Task 4 Initial ideas

Sketch your initial ideas below and read D&T Tips for a higher grade.

Produce a range of initial ideas 7 or 8 (by hand using different drawing and rendering techniques) and include annotation, apply surface decorations to give an indication of what it might be like. Look at existing earphone holders from your image board to help for inspiration. **Do not copy any existing designs, all work must be your own.**



Task 4 Initial ideas continued –

D&T Tips for a higher grade

- Be creative, original and use your imagination.
- Outline your designs and keep sketches neat/feint.
- Draw your designs in both 2D and 3D to show different views.
- Add dimensions e.g. main measurements in mm's.
- Add detailed comments (annotation) to explain design decisions, discuss materials and construction.
- Ensure you cover all points on the specification fully.
- Ensure you discuss any environmental issues.



Task 5 – Development

Using your favourite design from your initial ideas develop this further to produce your final design e.g. improve it to make it even better (include measurements in mm's).

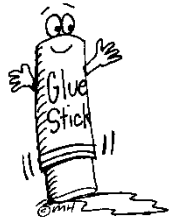
D&T Tips for a higher grade

- Be creative, original and use strong imaginative, eye-catching colours
- Outline you designs in black ink and keep sketches neat/feint
- Add dimension e.g. main measurements in mm's
- Use coloured pencils (felt tipped pens can be a little harsh, messy and bleed through the page!)
- Add detailed comments (annotation) to explain design decisions, discuss materials and construction



Task 6 – Model (Prototype)

Modelling is an essential part of designing and manufacturing. Produce an accurate and scale model of your earphone holder from your development. Test your prototype to see whether your design works or could be improved. Record findings or suggestions from others and modify appropriately. Take a photograph using your ipad and stick below. Include any suggestions for improvements from either yourself, your teacher or your peers.



Task 7 – Final Design

Using your improved design (model and development) now generate your final design (include measurements in mm's).

Task 7 Final Design continued –

D&T Tips for a higher grade

- Be creative, original and use your imagination.
- Outline your designs and keep sketches neat/feint.
- Draw your designs in both 2D and 3D to show different views.
- Add dimensions e.g. main measurements in mm's.
- Add detailed comments (annotation) to explain design decisions, discuss materials and construction.
- Ensure you cover all points on the specification fully.
- Ensure you discuss any environmental issues.



Task 8 Orthographic projection

Produce an orthographic projection below. Include all dimensions and use faint construction lines to generate your views.



Task 9 Manufacturing Flowchart

Produce a flowchart to show the manufacturing steps involved to make your phone holder. Include Quality Control (QC) loops to show where you have checked quality and accuracy.

Task 10 Parts List

Using your final design, list all pieces or components needed to produce your prototype below:

Part Name:	Material:	Dimensions: (Length x Width x Thickness) (mm's)	Quantity:
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			