Acoustic Amplifier

The Acoustic Amplifier above amplifies sound from a phone without the use of electrical components.

How does it work?

TASK 1: Research how this product works.

What makes this product be able to amplify sound without the use of electronic components?

How does the material, shapes and forms of the product help to make it work effectively?

What features have been used to ensure the phone is held securely?

What features have been used to ensure the product is stable?

What aesthetic features have been used to ensure the product is desirable?

Why would a person buy a product like this? Why would they buy this over an electronic one?

What are the advantages or disadvantages of this product when compared against an traditional amplifier with electronic components? When comparing, consider sustainability, issues the quality of sound, aesthetics, and function

Display your finding on a PowerPoint slide with diagrams where necessary.

How does it work?

TASK 2: Write a specification for this type of product from your research (a specification is a list of things it would have to have to be a successful product)

1) Identify the all key performance requirements for this product to amplify the sound.

2) Identify the key performance requirements for the product to locate and hold the smart phone.

3) Identify who the target market are for this type of product and why it would be desirable to them.

4) Identify the key performance requirements that make it desirable to the target market.

Your specification for this product should cover criteria that refer to the Function, Aesthetics, Materials, Finishes, Sizes, Sustainability.

Present your specification and justifications on a PowerPoint slide – you should be able to research or think of over 15 realistic criteria that include technical and measureable ones.

What does it need to work well and be desirable?

TASK 3: Research the four different Design Movements listed below.

Bauhaus (1919 to 1933 – Key designer: Marcel Breuer)

Art Deco (1925 to 1939 – Key designer: Eileen Gray)

Streamlining (1935 to 1955 – Key designer: Raymond Loewry)

Post Modernism (1975 to Present – Key designer: Philippe Starck)

1) Gather some pictures of products from each design movement including products from the key designers listed above).

2) Identify what the key features from each design movement are.

3) What are the ideas and philosophies behind the design movements (what were the designers trying to achieve and why? What events in history or changes in society led to the develop of the design movement.

Present your research and notes on two slides (half a slide for each design movement.

How has design evolved over the last 100 years?

TASK 4: Designing an Acoustic Amplifier.

Now you have a specification for an Acoustic Amplifier you need to add the specification points below to it.

“The amplifier must be inspired by one of the Design Movements listed above.”

TASK 4:

Using the images from your research design and develop two different ideas for an acoustic amplifier in you chosen style/s. Explain what idea/aesthetic feature you are trying to create your ideas from.

KEY FOCUS ASSESSMENT CRITERIA:

Designing an idea is not about creating one. Good ideas come from repeated evaluation and development, redrawing and modifying where required.

You need to explain your thinking throughout.

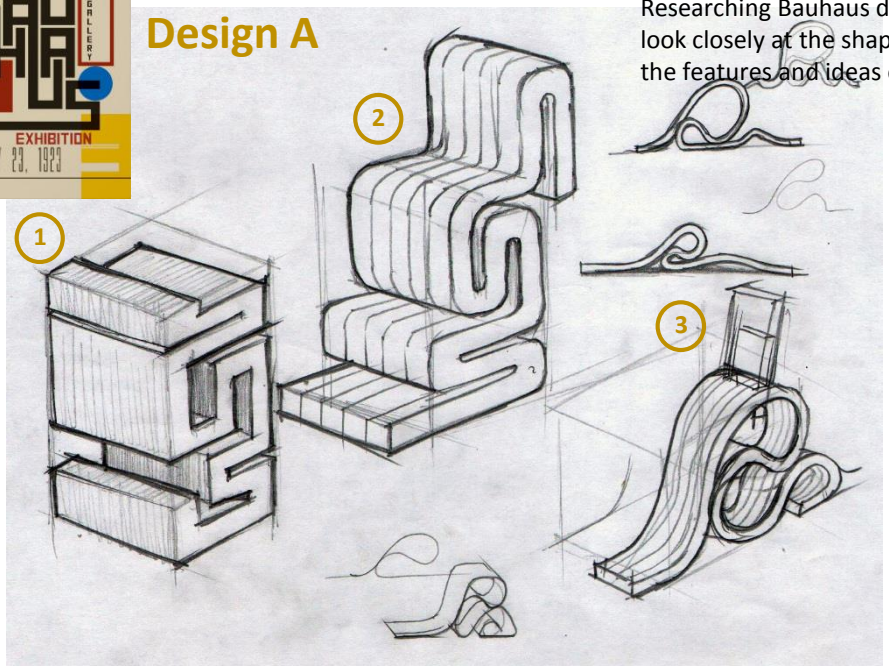
Present your two ideas and developments with notes on a slide like the examples below.

SEE EXAMPLES ON THE NEXT PAGE

BAUHAUS

Design A

I started by researching a variety of different designs from the Bauhaus movement. I wanted to identify some key design features or ideas that I could use in my design. Researching Bauhaus designs gave me the opportunity to look closely at the shapes, forms, colours, textures and the features and ideas of their products.



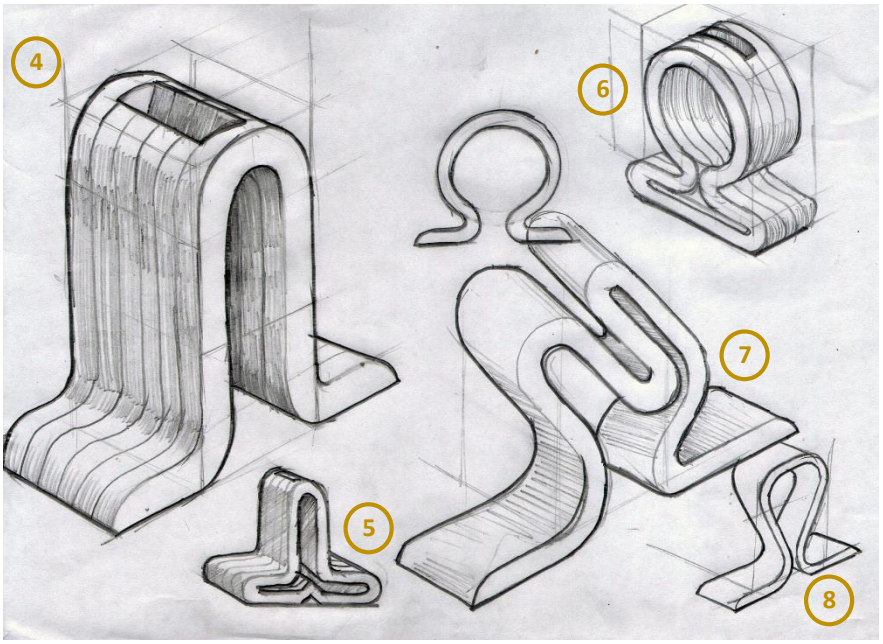
Design A: I liked the idea of the continuous and winding line from this Bauhaus poster so I began mimicking and extending it's shape.

1

I explored the use of right angles to maintain the strong geometry of the Bauhaus style. Although this shape could be developed to better hold a phone or MP3 player and to function successfully I believe the idea could create an intriguing object that would look desirable on a desk or shelf.

2 I developed it further by adding curved corners to add fluidity to the twists and turns of the material. I think that creating shape with smooth and fluid curves and twists from a solid material would make an interesting contrast. The strength of the material would contrast with the soft flowing curves.

3 I tried to take this idea forward and began exaggerating the curves to make the form mimic a folded fabric. This was to further emphasise the contrast between material and form.



Review

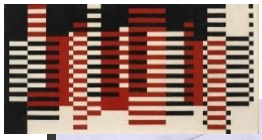
I reviewed my ideas at this point to establish which route I wanted to take my design down. I chose to further develop my ideas around design 2 because I liked the combination of the soft curves with the strong geometric lines. I experimented further with different shapes

What Next?

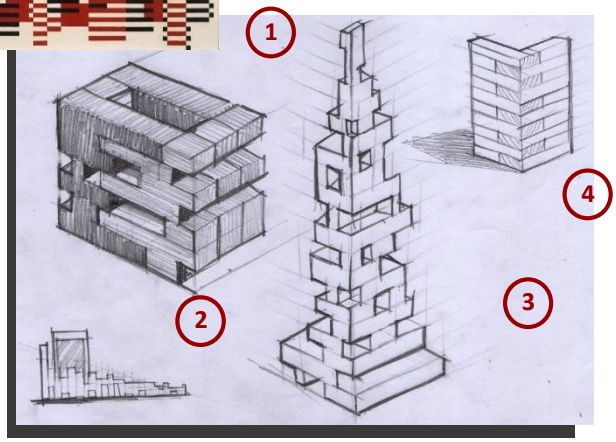
I will develop a combination of design 6 and 4, where I include the full circle with the base from design 4. I will need to model this idea in 3D and test how the phone will be supported and how to maximise the amplification of the sound.

4 5 I wanted to try simplifying the shape of my ideas to create a symmetrical idea with a strong central focus. I added a curve on the bottom so the material appeared to turn in to the desk or shelf it would be placed on. This softened the look of the edge, complemented the curved shape and provided a stable base. I extended this idea to incorporate two further folds and created a continuous loop. I liked the idea of including an angle to contrast the curves so I added one in Design 5.

6 7 8 In design 6 I wanted to make the cavity larger in expectation that the sound would be more amplified. Design 7 and 8 are further experiments around the same idea.



Design B



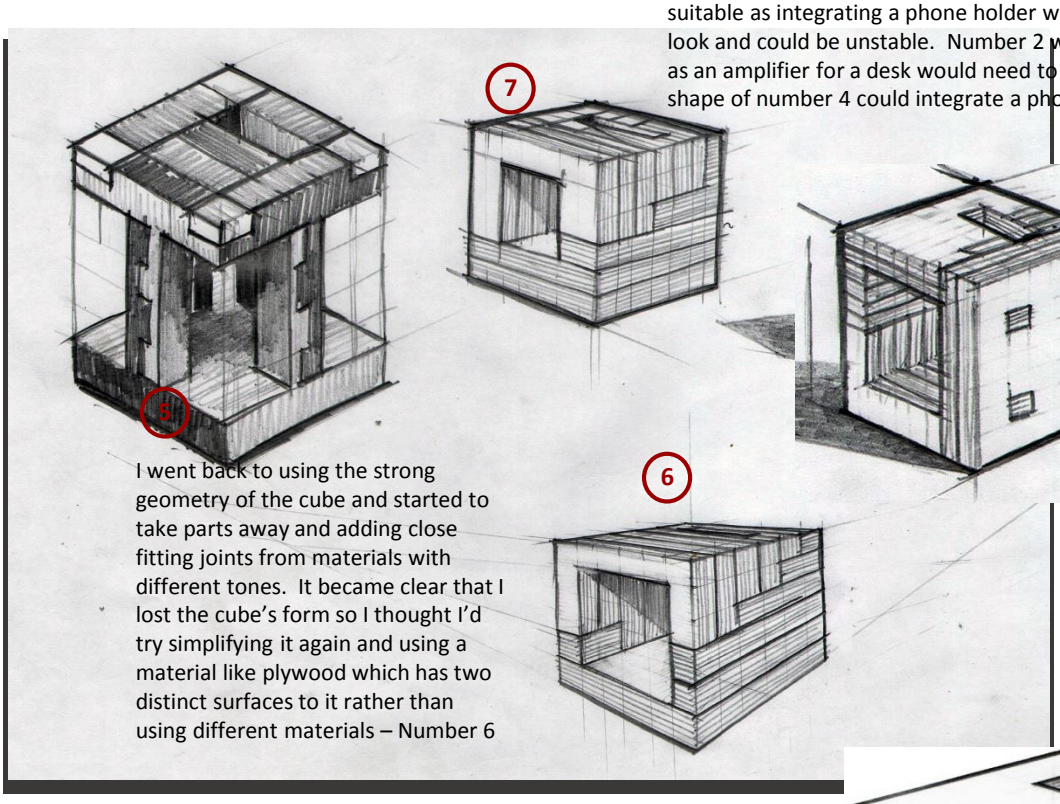
Design B: I liked the idea of using interlocking shapes of this Bauhaus poster so I experimented with turning this idea in to a 3D form. I thought that if this feature was made accurately with either different materials or colours/tones it could be interesting and desirable.

1

I started with a strong geometric form and divided it in to two halves that interlock. The two halves could be different woods, a dark and light colour. I liked the idea that the strong geometric shape was incomplete so I included gaps in it. I think the idea would be a stronger design if it was in a cube, sphere or a pyramid. It could also be more interesting if I was more calculating about where the gaps were and how big they were – to try to compose the object's negative space.

2 3 4

I tried to develop it further, creating a vertical and a horizontal design so I could assess the merits of these approaches. When evaluating these developments I felt the number 3 wasn't suitable as integrating a phone holder would compromise it's look and could be unstable. Number 2 wouldn't be as compact as an amplifier for a desk would need to be. I didn't think the shape of number 4 could integrate a phone holder effectively

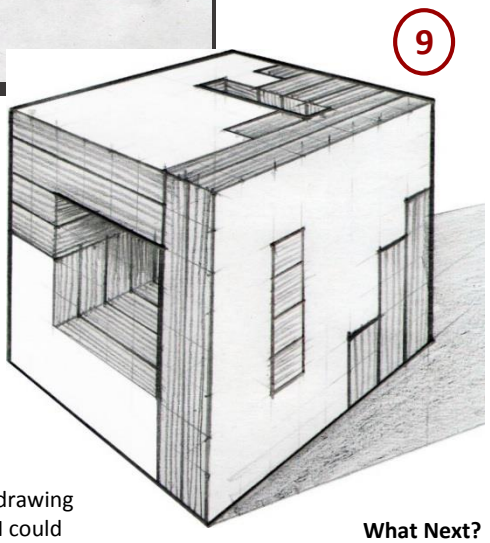


I went back to using the strong geometry of the cube and started to take parts away and adding close fitting joints from materials with different tones. It became clear that I lost the cube's form so I thought I'd try simplifying it again and using a material like plywood which has two distinct surfaces to it rather than using different materials – Number 6

6 7 8

I decided to try to use the different directions of the surfaces of the plywood to emphasise the different dimensions. I drew it out more accurately so I could begin to include some of the details in the junctions between the pieces of plywood.

I tried different arrangements, changing how much of the edges of the plywood were visible. On number 7 I added a smooth surface to the top. I then continued this idea in to number 8 but added some edges coming through one of the surfaces.



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I draw it out again, slightly larger and using perspective drawing to help me create a drawing that allows me to see more of the top. I drew it accurately using vanishing points so I could get a clear idea of what it will look like if it was made. I decided to change the surface on the right side to include more of the edges of the plywood and thought the idea would look more consistent if I used the same dimension of the phone holder slot on the side rather than the four squares in number 8. When I drew it I also considered how many layers of 12mm thick plywood would be needed. This design would therefore be 96mm cubed

What Next?

I will need to model this idea to test how the object will fit together, how it will hold the phone securely and what it will look like all the way around