

Year 10 Wooden Amplifier Project

In this project you will:

- investigate different commercially available designs;
- enhance marking out techniques and skills using traditional wood
- learning about wood joining techniques and finishes; and
- create a wooden amplifier project for a smartphone.



Name: _____

Class: _____

Teacher: _____

Design Situation

Young people like to hear loud music. Unfortunately, the volume from a smartphone is not loud enough and can sometimes be distorted.

Design Brief

The challenge of the project is to design and make an acoustic amplifier for a smartphone. The design will be tailored to the individual needs of each pupil's smartphone.

Materials

You will be given four pieces of veneered plywood, 190*75*12. Any other materials can be suggested and if appropriate used.

Specification

Write out 5 specification points that would help in the manufacture of about your project. These points can be used as points for assessment and should help focus thinking.

1

2

3

4

5

Make sure you take accurate measurements and plan your work with precision to enable your design to be manufactured to fulfil the requirement of the design brief.

When built the product will be finished to a high standard using a choice of finishes including wood stain, clear varnish, wax and paint.

Investigation Task – Mood Board

Using a different sources, find examples of existing wooden amplifiers. Present them as a mood board in the space below. Include pictures, images or text related to a design situation. Consider colour, shape, location and size.

My Mood Board

Homework Research Task – Evaluating Existing Products

Use a variety of sources to find three wooden amplifiers. Complete the table below to evaluate each design considering each design in terms of its shape, colour, theme and who you think it has been designed for.

Picture	Shape:
	Colour and material:
	Theme:
	User:
Picture	Shape:
	Colour and material:
	Theme:
	User:
Picture	Shape:
	Colour and material:
	Theme:
	User:

Using Mathematics in Technology and Design

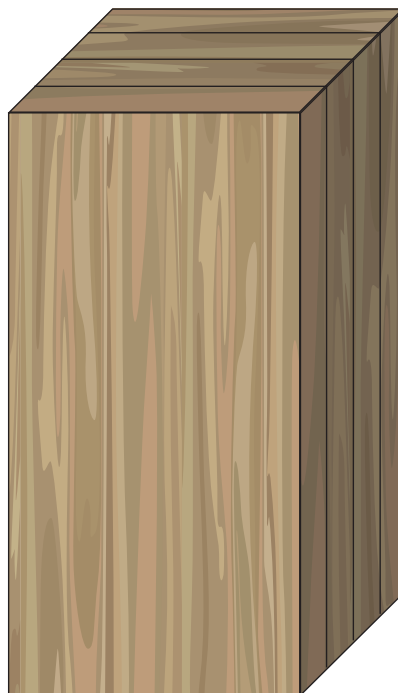
Using a ruler, draw leader lines and add dimensions for the template. Remember to include the unit of measurement: millimetres (mm).

Example of a Leader Line and Arrow:



Actual size of the material you will receive

- To make your design, you need to have four pieces of material all the same size.
- It is your task to work out your design onto each piece.
- The design for each piece should be a different shape.
- You will not need to cut the back piece.
- Each piece of plywood will be 12 mm thick.
- Work out the overall thickness of the materials and add three different measurements to the sketch below.



My Design

Sketch several different designs that fulfil the design brief.

When drawing your designs, consider:

- how many output amplification holes you want on the front;
- the size of your smartphone;
- where to place the smartphone and the amplification hole or holes; and
- how the sound will travel from the smartphone to the amplification hole or holes.

My smartphone is:

The size of my smartphone is:

My Templates

Remember the back piece should be solid and you do not need cut it.

Front

Inside 1

Inside 2

Design and Manufacturing Diary

Use sketches and notes to explain each stage of manufacturing your amplifier project. Write about what tools, machines and equipment you used each day. Remember to include information about health and safety.

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Design and Manufacturing Diary

Use sketches and notes to explain each stage of manufacturing your amplifier project. Write about what tools, machines and equipment you used each day. Remember to include information about health and safety.

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Date:

What I did today:

Learning intention:

By the end of this lesson you should be able to name, describe and use each of the marking, cutting and shaping tools named below.

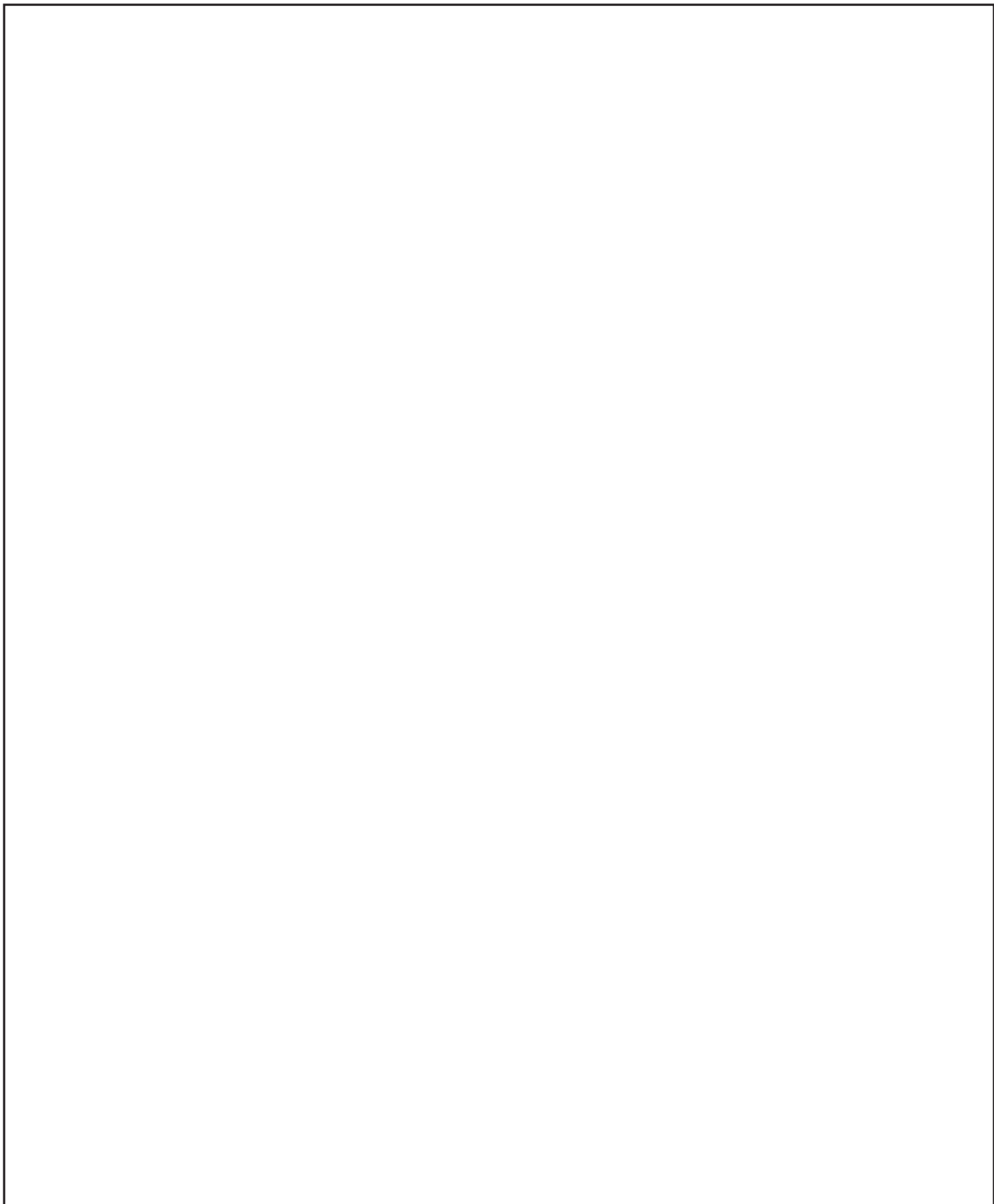
Try Square	Scroll Saw	Coping Saw
Picture	Picture	Picture
Used for	Used for	Used for

Steel Ruler	Linisher	Pedestal Drill
Picture	Picture	Picture
Used for <i>A steel ruler is used for measuring a piece of material. It can also be used as a straight edge. In Technology we measure in millimetres (mm).</i>	Used for	Used for

Presenting the Final Design

Draw your final design in one of these ways:

- freehand, showing sizes and annotated notes;
- orthographically, showing Front, Side Elevation and Plan, including sizes; or
- on a computer, including sizes.



Amplifier Mark Sheet

See separate document for further breakdown of marks.

Task and personal comment on your performance	Mark	Max
Mood Board		8
Research Task		3
Using Mathematics		5
My Design		15
Template Drawings		10
Diary		4
Tools		5
Manufacturing		50
Total		100

Feedback to include a photograph

What have I done well?

What could I improve?
