

SQA ASSESSMENT

NATIONAL 5 DESIGN AND MANUFACTURE

SKILLS, KNOWLEDGE AND UNDERSTANDING

- analysing information
- applying knowledge and understanding of:
 - idea-generation techniques
 - design factors
 - graphic & modelling techniques
 - planning and evaluation techniques
 - tools, materials, and processes
 - manufacturing techniques
- knowledge and understanding of commercial manufacture
- knowledge and understanding of the impact of a range of design and manufacturing technologies on our environment and society

THE COURSE ASSESSMENT HAS THREE COMPONENTS

- Component 1: question paper 80 marks
- Component 2: assignment — design 55 marks
- Component 3: assignment — practical 45 marks

QUESTION PAPER

- design (30 marks)
- workshop-based manufacture (30 marks)
- commercial manufacture (20 marks)
- **Section 1** has 60 marks. This section assesses design and workshop-based manufacture and consists of six or seven questions.
- **Section 2** has 20 marks. This section assesses commercial manufacture and consists of four or five questions.

ASSIGNMENT — DESIGN

Marks are awarded as follows:

- Analysing a brief Carrying out research 5 marks Writing a specification 3 marks
- Generating ideas 9 marks
- Exploring ideas towards a proposal 6 marks
- Refining ideas towards a proposal 6marks
- Applying knowledge and understanding of design 4 marks
- Applying knowledge and understanding of materials and manufacture 4 marks
- Applying modelling techniques 6 marks
- Applying graphic techniques 6 marks
- Producing a plan for manufacture 6 marks

Notes to candidates

Before you start the research you should have read the instructions for candidates and be familiar with:

- the brief
- the skills you have to demonstrate
- the type of evidence you have to provide

You should speak to your teacher or lecturer if you are unsure about the areas above.

Research

The company has carried out research and identified a few requirements for the shelf. You should gather further information to ensure the proposal is suitable for the company and the teenagers you know.

You should record your research information on this sheet (you can use both sides).

You should use findings from your research to complete the specification below.

A small shelf - specification

The shelf must:

- demonstrate a high level of craftsmanship.
- have simple modern design
- use calm, neutral colours and materials
- be influenced by guitars.
- incorporate guitar features such as strings
- hold hair brushes (see research for size)
- hold hair dryer & straighteners (research has sizes)
- be easy to get things in and out
- be easy to wall mount.

I am going to design for teenage girls. your style?



A B C D

Some of the reasons: A - Calm colours, simple, relaxing, modern, white wood

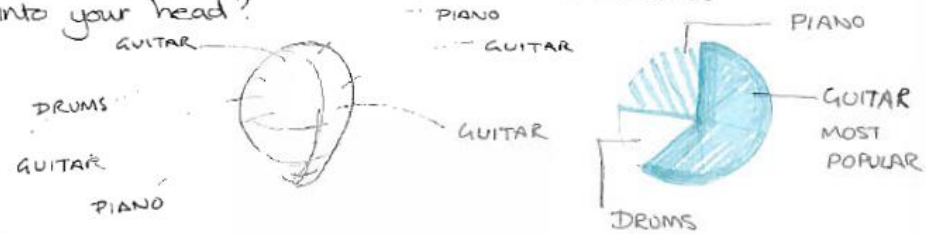
B - Too busy, too much pattern.

C - Too busy, too bright, chaotic

D - Simple, light wood, not too busy

MUSIC THEME

What is the first musical instrument that comes into your head?



FUNCTION

I am designing a shelf to store hair products. Which of these should it store?

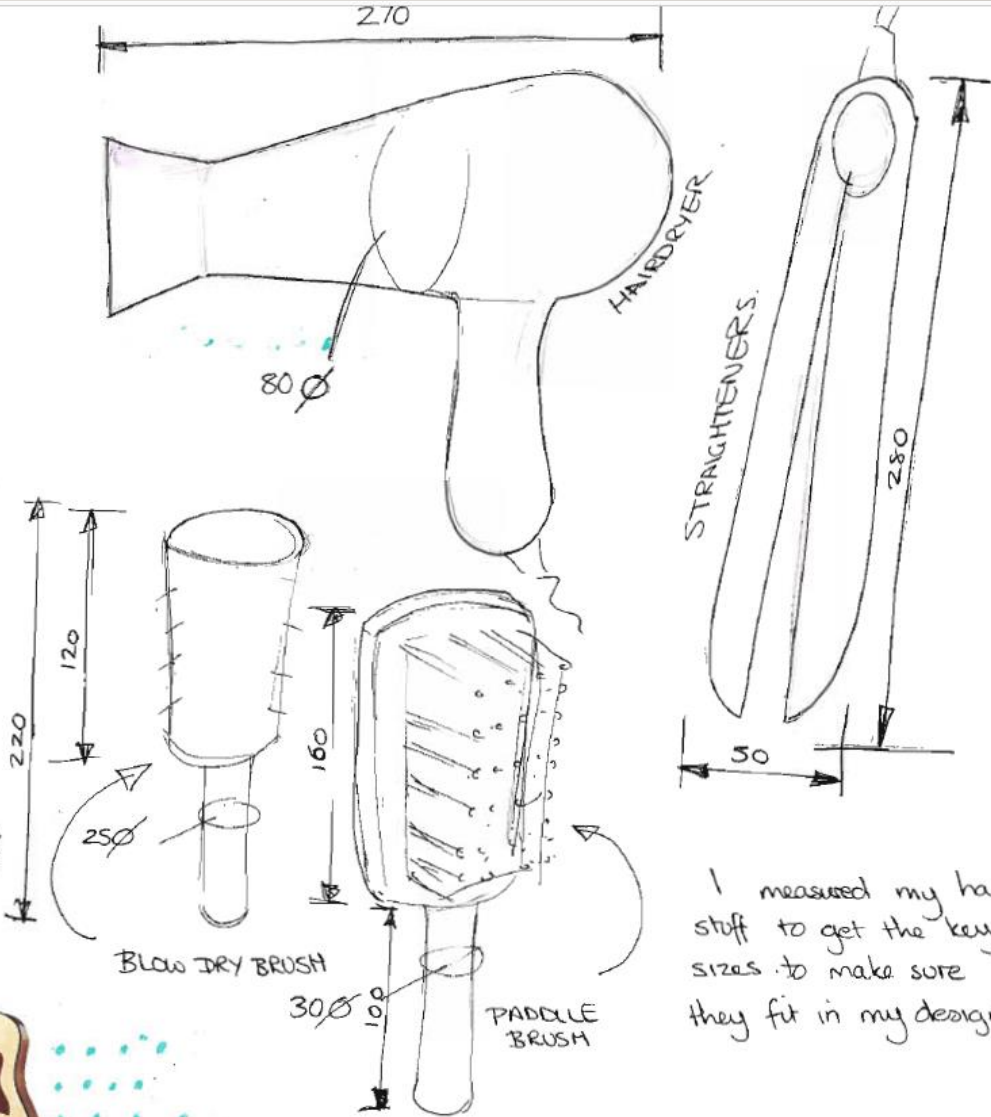
Hair dryer	5/7
Straighteners	6/7
Brushes	7/7
Comb	2/7
Hair products	3/7
Accessories	4/7

CANDIDATE B - 1



GUITAR LESSONS
 ALL SKILL LEVELS
 235-8342 call for details

• OPEN POSITION
 • CLASSICAL PICKING
 • BASS TABS
 • FRETBOARD



I measured my hair stuff to get the key sizes to make sure they fit in my design.

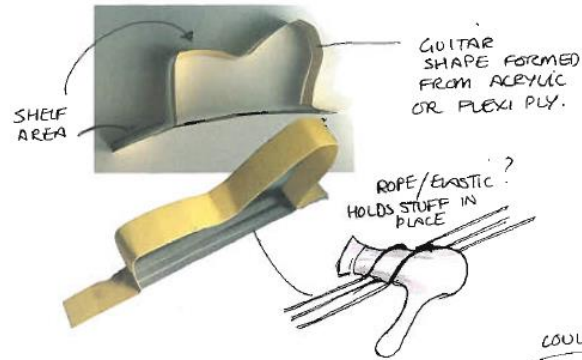


HAIR DRYER SITS IN SHELF INDENT



HOLES TO STORE BRUSHES

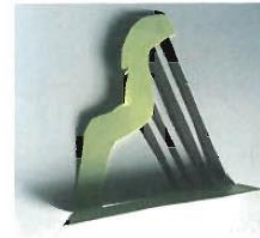
IDEA FROM ELECTRIC GUITAR



SHELF AREA

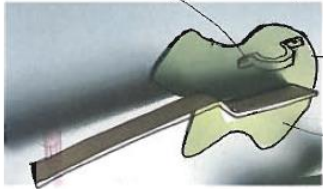
GUITAR SHAPE FORMED FROM ACRYLIC OR FLEXI PLY.

ROPE/ELASTIC? HOLDS STUFF IN PLACE



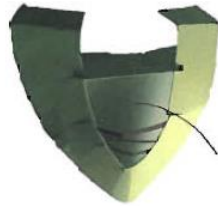
BRACKETS TO STORE HAIR DRYER / STRAIGHTENER

COULD BE METAL OR PLASTIC RODS



LIMITED ASSEMBLY

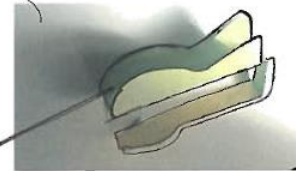
LOOKS TOO MUCH LIKE A GUITAR



HAIR DRYER STORED IN POCKET AREA

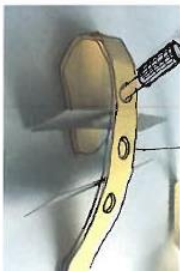
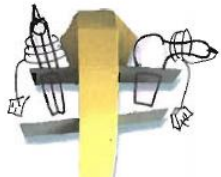


HEMS HIDDEN IF USED THIS WAY UP

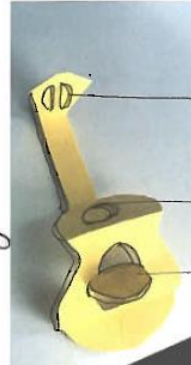


COULD ALSO BE USED LIKE THIS

SUBTLE MUSIC THEME



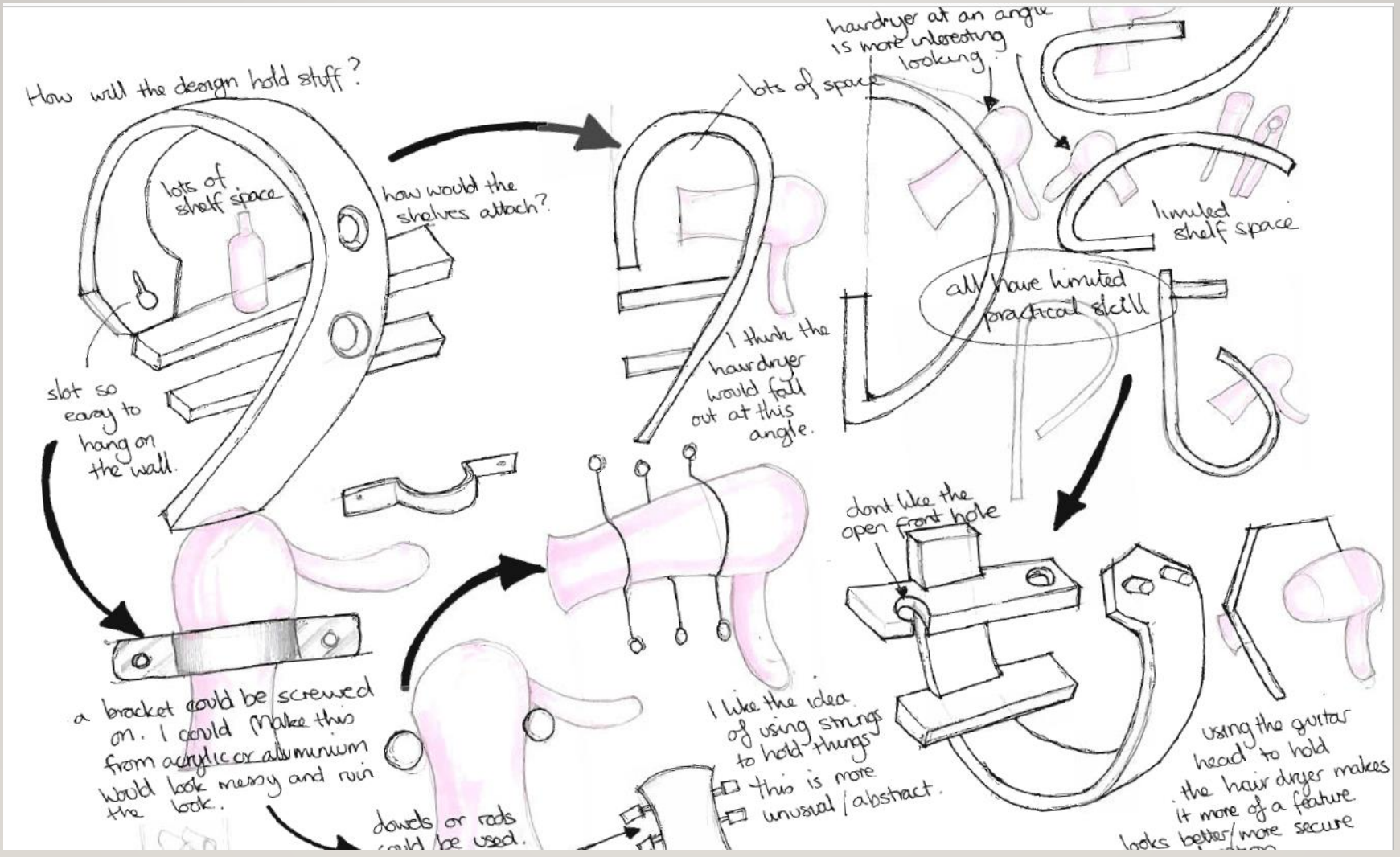
HOLES TO STORE BRUSHES

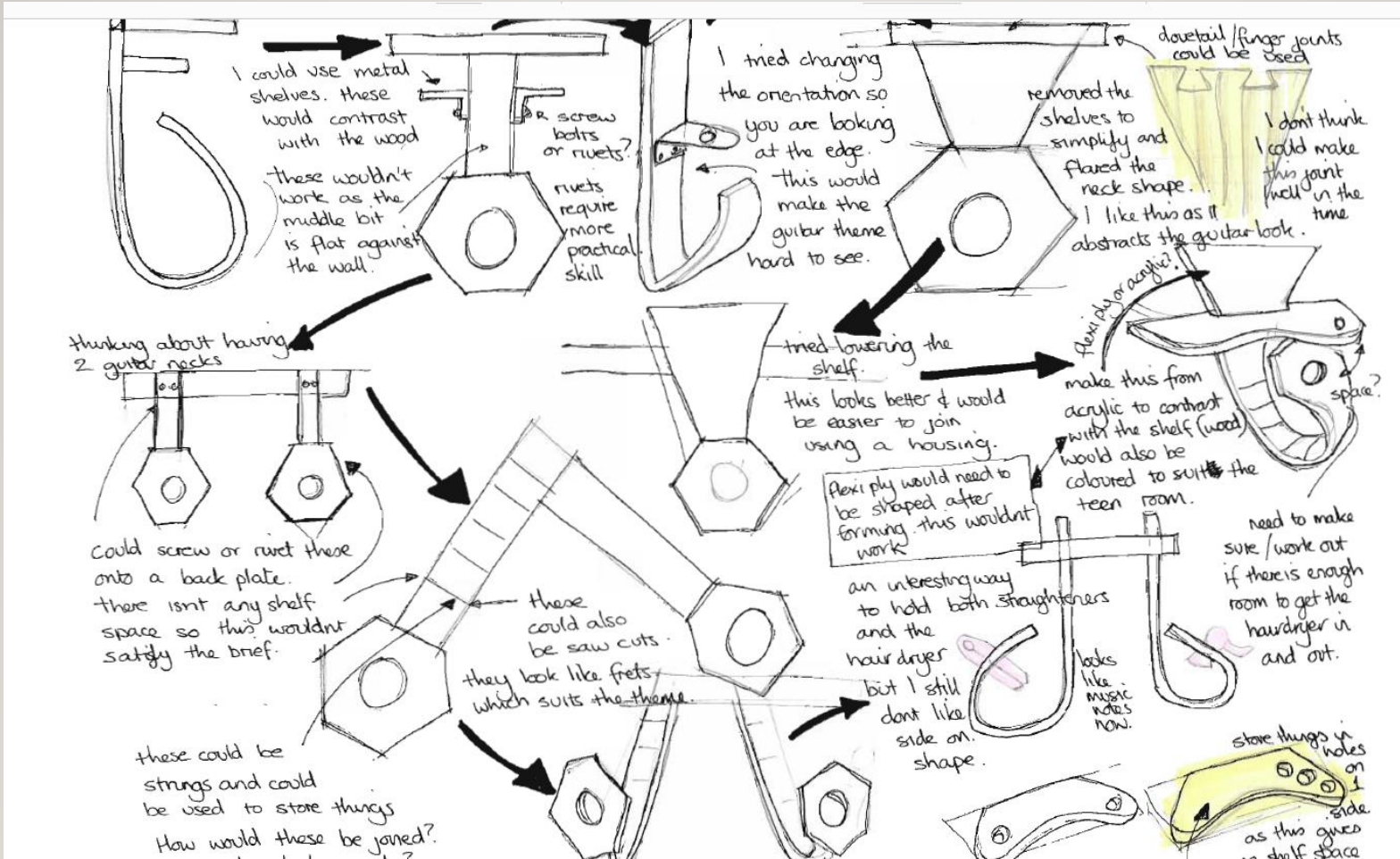


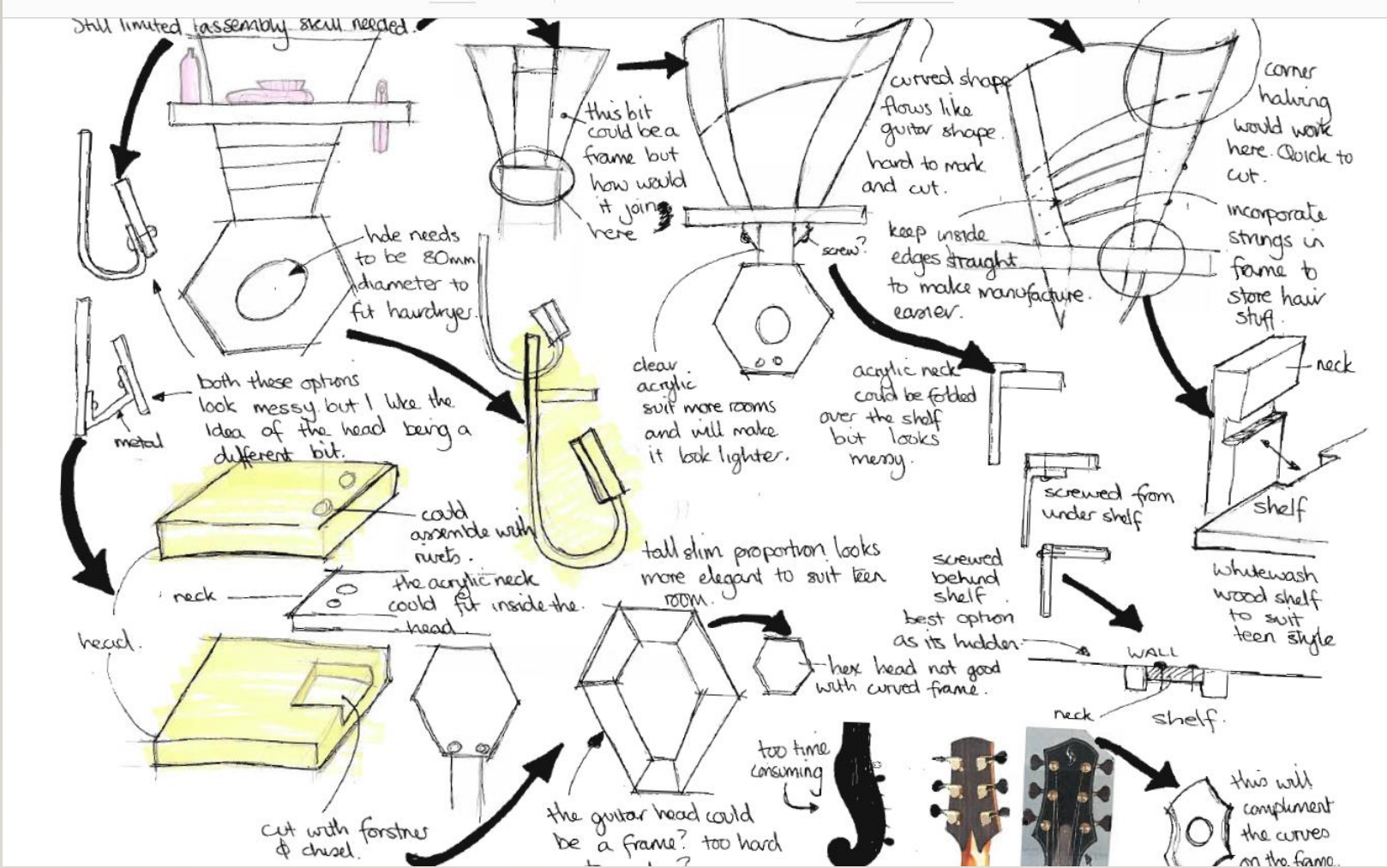
SPLIT HOLE FOR STRAIGHTENERS

HOLE FOR HAIR DRYER

COULD REVOLVE MIRROR/SHELF







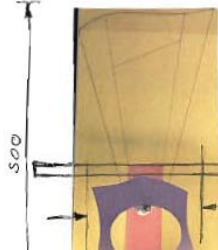


The hairdryer will need to be held in a slot close to 45°. I tried more vertical angles but the hairdryer kept falling out.

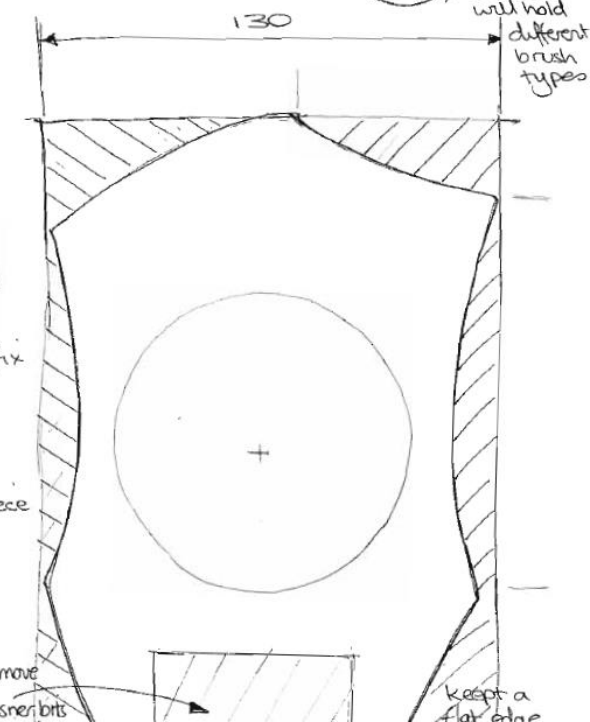
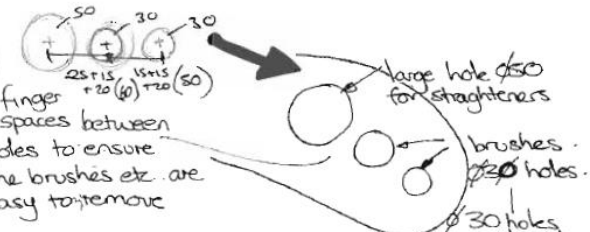
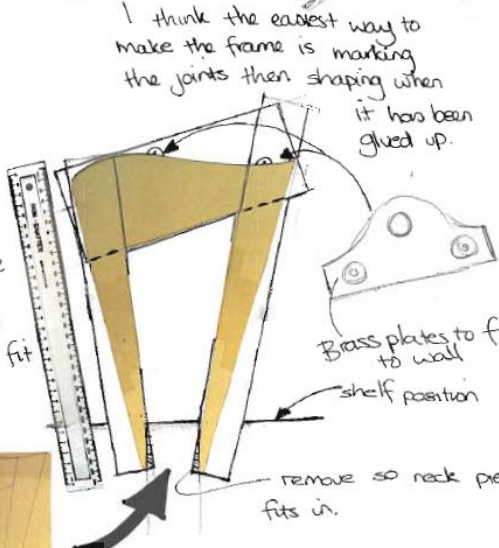
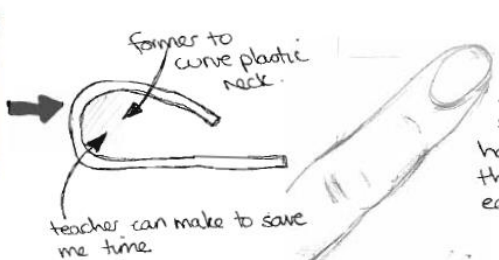
The angle on the model is suitable to hold the hairdryer. I can use sizes from the model to plan the manufacture



The full size model was made to be 500 tall to fit in the box.



shelf positioned above the guitar head
holes for brushes & straighteners will

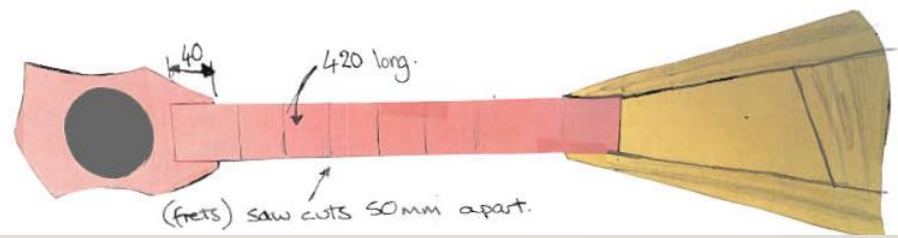
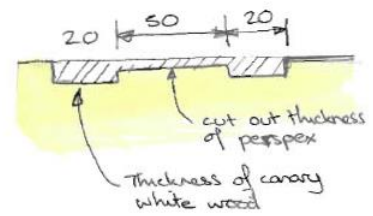
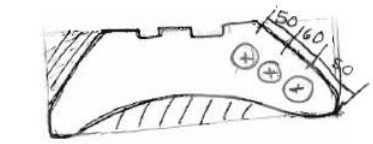
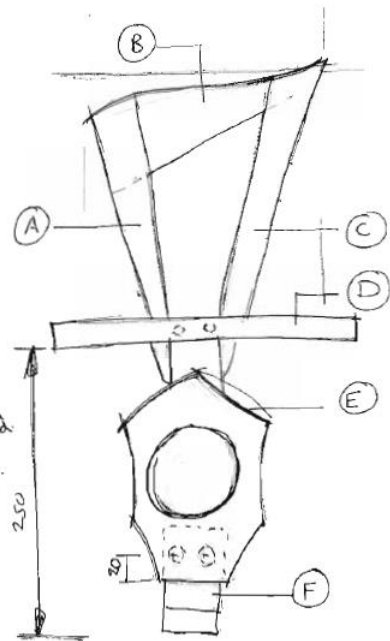


SEQUENCE OF OPERATIONS

STAGE	OPERATION	TOOLS/EQUIPMENT
	PERSPEX: Mark out holes and frets. Saw lines & drill finish edges then form.	steel rule, try square. drill and saw. file and wet and dry oven and former.
	FRAME: Mark joints and shape. Cut and fit. Sand and assemble	sliding bevel tejon saw/chisel glue and clamps
	GUITAR HEAD & SHELF: mark shape, holes and joint. cut and finish	Template / freehand. try square coping saw, sand & wax.
	ASSEMBLY: • rivet head to neck • screw neck onto shelf • glue shelf to frame	rivets and hammer screws and screwdriver PVA and clamps.

CUTTING LIST

PART	MATERIAL	QNTY	LENGTH(mm)	BREADTH(mm)	THICKNESS (mm)
A	carany white wood	1	310	50	16
B	"	1	230	20	16
C	"	1	260	50	16
D	"	1	300	125	16
E	"	2	190	130	8



ASSIGNMENT — PRACTICAL

Marks are awarded as follows:

- measuring and marking-out (9 marks)
- using hand and machine tools (18 marks)
- assembling components (5 marks)
- finishing (9 marks)
- evaluating (4 marks)