

Archipendant – architecturally inspired pendant – TEACHERS’ NOTES

Area of Study: Products

Specialisation: Jewellery Design

About the project

Archipendant is a design, make and appraise project, which provides the students with an opportunity to utilise a strong design philosophy, which, acts as a context and catalyst for creativity. Using a design process the student will complete a pendant, which will demonstrate their capability in the identified outcomes of the design project. All students will be ultimately familiar with the *Informalist design philosophy*, have developed and series of highly communicative graphic skills and have experienced the making processes associated with precious and semi-precious sheet metals.

Sequence of the unit

Archipendant is a resistant material project that uses a design, make and appraise approach to problem solving. It continues with the development of design awareness and the development of a capability of activities of a more practical nature.

The project is aimed at taking between 28-34 hours, which represents five 50-minute lessons over an eight-week period. The project timing is used as a best-case example and often a project may take longer.

ICT has the opportunity to support this project through research, the production of the evaluation and in the extension / alternative work that has been identified.

Outcomes

At the end of the project

Students will develop knowledge and understanding in:

- properties of brass and copper
- the production of brass and copper
- uses of brass, copper and precious metals
- the world of architectural design and designers
- processes used in making the archipendant product
- safe working environments, habits and procedures

Students will develop skills in:

- designing the archipendant according to to a given brief
- making the archipendant and selecting the best methods for their idea
- evaluating their design according to set criteria
- communicating their ideas as design concepts and development drawings
- Managing time and resources throughout the design process

Students will develop:

- an appreciation of the implications of the use and production of brass and copper
- a sense of responsibility for the use of technology
- an appreciation of the contribution made by themselves and others in the process of design

Prior learning

Useful experience could include:

- selecting materials & processes, tools & equipment
- measuring and marking out accurately
- modelling prototypes
- producing concept sketches
- identifying appropriate joining techniques
- managing a design project

DVD Video:

Archipendant – Architecturally inspired pendant
Designability Group Pty Ltd.

Links with other subjects

Science: properties of metal

Art: architectural design

History: Different architectural styles and how they relate to historical events, trends etc.

Language used in the project

Throughout the project the comprehension and spelling of language will be addressed. Using strategies such as 'word of the day' and investigating its meaning/s and identifying its origin. Language of a technical nature will be discriminated.

Solder, flux, piercing, implements, alloy

Homework & Extension activities

Homework

See Homework Schedule at the end of the programme

Resources

Recommended text:

The Complete Metalsmith, Tim McCreight, Davis Publications 1991
ISBN 0-87192-240-1

Recommended resource book:

Goldsmithing and Silver Work, Charles Codina, Lark Books 2003
ISBN 1-57990-356-8

Australian Architecture Now, Davina Jackson and Chris Johnson,
Thames and Hudson 2000
ISBN 0-500-28388-5

Design Classics 1880-1930, Torsten Brohan and Thomas Berg,
Taschen 2001
ISBN 3-8228-6876-0

Extension activities / alternatives could include:

- Distribute to each student / pair of students in the class, the title of an architecturally designed Australian building, in place of the whole class using The Sydney Opera House as their inspiration.
- Students (in pairs or individually) could put together a 1-2 minute PowerPoint presentation researching their particular building, the architect, the style etc. and present it to the class.
- Introduce a third metal: brass, copper and nickel silver
- More emphasis could be placed on the final exhibition whereby the teacher could organize a competition for design of the invite / poster and the winning one is used to advertise the exhibition. Posters could be designed using a number of different design software packages.
- Students could design and make matching earrings / rings / cufflinks / brooches.
- Once a successful pendant design has been achieved using copper and brass, students could use sterling silver to re-create their design.
- Patinas – adding colour to metal (pg 34-37 'The Complete Metalsmith')

Wk	Student notes pg #	Text Pg #	Teaching material And pg numbers (Teachers notes)	Teaching Content	Student Activity And page numbers (Student notes)	Homework
1	16 17 2 3		<ul style="list-style-type: none"> Archipendant DVD Samples of copper, brass and sterling silver Pendant samples 	<ul style="list-style-type: none"> Watch DVD introduction (ch 1) Briefly explain what the project entails. Read the design brief and Project Overview Show samples of copper and brass and sterling silver Discuss properties and other uses: soft, malleable, good conductor (copper), does not rust. Explain that the same skills they learn working with copper and brass they can virtually transfer to working with silver and gold. Show examples of architecturally inspired pendants (either in the DVD gallery section or actual samples.) Discuss the architectural innovations of The Sydney Opera House. 	<ul style="list-style-type: none"> View DVD introduction (ch 1) Read the Design Brief (p16) and look at the Project Overview (pg17) and ask any relevant questions. Read through information on the Sydney Opera House (pg2) 	<ul style="list-style-type: none"> Answer questions 1-4 on the Sydney Opera House homework worksheet. (Pg 3)
2	8 9 10 11 12 13 3 4	49	<ul style="list-style-type: none"> Archipendant DVD (chapters 2 & 3) Scrap pieces of copper and brass for practicing. Example practice pieces (E.g.: A filed piece of metal, 2 soldered pieces of metal, a negative shape and a simple textured shape.) Jewellery tools 	<ul style="list-style-type: none"> Show DVD (Ch 2 & 3) Instruct students to take notes. Discuss any questions raised by the DVD. Practice inserting a blade. Read together as a class the Soldering Safety Information sheet and discuss. Distribute Soldering Safety Test. (Pg 11 & 12) Correct Soldering Safety Test. (Pg 13 & 14) 	<ul style="list-style-type: none"> Watch DVD (Ch 2 & 3) and take notes. Read 'inserting a jewellery blade' and practice. (Pg 8 - 9) Read the 'Soldering Safety information' sheet. (Pg 10 - 12) Successfully complete the Soldering Safety Test (pg 13) 	<ul style="list-style-type: none"> Answer questions 5-8 on the Sydney Opera House homework worksheet. (Pg 3-4) Study for Soldering Safety test (Pg 10 - 12)

Wk	Student notes pg #	Text Pg #	Teaching material And pg numbers (Teachers notes)	Teaching Content	Student Activity And page numbers (Student notes)	Homework
3	3 4 15	70 thru 76	<ul style="list-style-type: none"> Jewellery tools 	<ul style="list-style-type: none"> Correct Sydney Opera House Homework Questions Supervise students practicing. 	<ul style="list-style-type: none"> Correct Sydney Opera House Homework Questions 1-8 (Pg 3 - 4) Practice correct technique of working with metal (E.g.: cutting / piercing, filing, soldering, drilling and adding texture) Students are to stick the practice samples in the 'samples' page (pg 15) 	
4			<ul style="list-style-type: none"> Jewellery tools 	<ul style="list-style-type: none"> Continue supervising students practicing 	<ul style="list-style-type: none"> finalise practicing stage. 	
5 Continued	14 18 19 20 21 22 23	8 9	<ul style="list-style-type: none"> Archipendant DVD Chapters 5 - 9 Example OHTs Example cardboard pendant prototypes. Paste and scissors At least 2 different coloured squares (50mm x 50mm) of cardboard 	<ul style="list-style-type: none"> Archipendant DVD (ch 5) Show example 'Image Brainstorm' OHT (pg 17) Present the 'Image Brainstorm' slide show. Instruct students to sketch basic shapes. Show example 'design template' OHT. (Pg18) Present DVD (ch 6) 'Making the Prototype' Check all designs and prototypes and offer advice on possible modifications - keep designs simple. Present DVD (ch 7 - 9) Show example flow diagram OHT and explain what a flow diagram is. Instruct students to complete their flow diagram worksheet. (Pg 24) 	<ul style="list-style-type: none"> Students watch the DVD (Ch 5) and take notes. Students fill their 'image brainstorm' page with sketches. (Pg18 - 19) Students transfer these images to the 'design template' page. (Pg 20) Students make at least 3 different cardboard prototypes from their 'design template' page. With guidance from peers and teacher, students decide on which design to make out of metal. Students watch the DVD (ch 7 - 9) and take notes 	<ul style="list-style-type: none"> After watching ch 7-9 Students transfer their video notes to 'working with copper and brass worksheet' (Pg 14) Students paste in prototypes (p21)

5 Co nti nu ed				<ul style="list-style-type: none"> • Show example final design OHT and instruct students on correct practices. (Pg 19) • Correct 'working with copper and brass' worksheet 	<ul style="list-style-type: none"> • Students transfer their notes to flow diagram worksheet. (Pg 22) • Students draw final design making sure correct labelling is observed. (Pg 23) • Correct 'working with copper and brass' worksheet (pg 14) 	
6	5 6		<ul style="list-style-type: none"> • All jewellery tools 	<ul style="list-style-type: none"> • Supervise making 	<ul style="list-style-type: none"> • Start making final product. 	<ul style="list-style-type: none"> • Read 'Metal Information' sheet and answer questions 1 - 4. (Pg 5 - 6)
7	6 7	46	<ul style="list-style-type: none"> • All jewellery tools 	<ul style="list-style-type: none"> • Correct q 1 - 4 'Metal information sheet' and encourage discussion. • Supervise making and reinforce safety issues. • Allow students to change their design ideas. Making is part of design, which is about decision-making. They will document their decisions in their evaluation. 	<ul style="list-style-type: none"> • Correct q 1 - 4 'Metal Information' worksheet. • (Pg 6) • Continue making 	<ul style="list-style-type: none"> • Complete question 4 - 8. 'Metal Information' worksheet. (Pg 6 - 7) • Study for class test.

Wk	Student notes pg #	Text	Teaching material And pg numbers (Teachers notes)	Teaching Content	Student Activity And page numbers (Student notes)	Homework
8	6 7 24		<ul style="list-style-type: none"> All jewellery tools 	<ul style="list-style-type: none"> Correct q 4 - 8 'Metal Information' and encourage discussion. Supervise making 	<ul style="list-style-type: none"> Correct q 4 - 8 'Metal Information' worksheet. (Pg 6 - 7) Continue making 	<ul style="list-style-type: none"> Complete 'Product Reference' homework sheet (pg 24) Study for class test
9			<ul style="list-style-type: none"> All jewellery tools. Example exhibition flyers. 	<ul style="list-style-type: none"> Collect 'Product Reference' homework sheet for correction. Explain the concept of organising a class exhibition. Assist those students who finish early in designing and printing exhibition flyers. Supervise making 	<ul style="list-style-type: none"> Continue making Students who finish prior to week 10 can design exhibition flyers, advertising the class exhibition. 	<ul style="list-style-type: none"> Study for class test
10	25 26 27 28 29		<ul style="list-style-type: none"> All jewellery tools. 	<ul style="list-style-type: none"> Discuss the importance of evaluation Supervise making / finishing Revise any making / finishing techniques required. Assist students in setting up an exhibition. Deliver final class test 10-15 mins.) (Pg 22 - 23) Correct Final Class Test (pg 24 - 25) 	<ul style="list-style-type: none"> Complete making processes. Complete evaluation questions. (Pg 27 - 29) Prepare for class exhibition. Bind or staple all work together with contents sheet ready for submission. Students sit for the Final class test (pg 25 - 26) 	<ul style="list-style-type: none"> Complete any unfinished work for submission. Study for class test. Revise class test corrections (pg 25 - 26)

Contents.

This is simply a list of the worksheets, homework sheets and information sheets. Each sheet should be identified as such in the content listing and as a subtitle on the actual page. The content should identify the sheet with a page number. The contents page is the most helpful way for students to collate all their sheets at the end of a project. It helps them become familiar to the idea of presenting a folio.

Design Brief & Project Overview.

The merits of a well-defined brief cannot be underestimated. The 'brief' statement itself maybe very simple but its supporting information is vital to tie the project together. Introduction statement related to design situation, materials, and design focus

Brief (Statement)

Parameters (restriction or guidelines)

Submission (what the students need to complete for assessment)

The Project Overview is directly related to the Design Brief. It will visually explain the project using graphics such as perspective view, mini orthographic views, or exploded views. A parts list will be included.

Video notes.

The video notes help students focus on important parts of the video by providing space for notes to be taken. Sometimes there are discussion questions to help the teachers and the students reinforce what they have seen. This also prevents that silence at the end of a video allowing a flow to the next activity.

Design Catalyst.

Most Designability projects use a design catalyst as a way of inspiring the teachers and students. A design catalyst such as Art Deco or Informalism provide a reason for designing a chosen form or overall aesthetic. By looking at specific disciplines within the design world such as Furniture design or Architectural design also broadens students' design base and knowledge. This information is crucial. It is always difficult to start designing without some kind of stimulation. A design catalyst ensures that students aren't left staring at a blank sheet when the time to draw some concepts comes.

Product Reference.

The collection of images is the process where students will become familiar with a design style, design discipline or a material. It will also develop research skills. It is often best to insist that students label all images with the name of the object, the name of the designer and when it was designed, and even the primary material it is made of. Books in the library should be the main source of imagery but with careful selection there are many good websites with excellent images which naturally makes this aspect of the project very easy - Design research can be accomplished within school work or as homework. Some care must be taken with websites so that students aren't lured to sites, which merely advertise products, as these sites will not have the extra required information.

Materials.

Designability projects use resistant materials, metal, plastics, wood, electronics and will eventually use textiles, food, and new and interesting materials yet to be considered. This information is vital early on in the project as this can be considered whilst designing. Design possibilities can be considered with a good understanding of physical and mechanical properties.

Concepts.

A worked example of concept sketches is provided for each project. It encourages good practice by providing a role model. This page should be used as an OHT whilst students are in the concept stage of their project. Encourage students to follow instructions on the use of the fine liner.

Design Sheets

These are formatted sheets with a title block for drawing. Encourage students to fill in the title block, as this will help their overall presentation.

Working with.

One of the features of Designability projects is the 'Working with' sheet. This information is related to the materials and processes aspect of the project. Each project will be introducing new skills and techniques and this sheet enables students to listen to a practical demonstration and write down the notes that are provided. The 'Working with' sheet is most often a table whereby students have to fill in the stages of making, identifying equipment, correct use and correct safety. Students can fill this sheet in during demonstrations or as revision after demonstrations.

Main Process.

An information sheet is provided on the main making process.

Flow Diagram. The flow diagram is a standard template that enables students to predict or record their making activities. The sequence for this is provided by the Working with sheet.

Designer Focus.

There are opportunities in Designability projects to have a designer focus so students not only learn about a design style or philosophy but also are familiar with one designer and his/her work. The Design Focus could be used as part of any extension work.

Drawing Focus.

Drawing as a way of communicating ideas is considered to be a vital part of any Designability project. Each project will focus on one or two important drawing skills, which will then be built upon in future projects.

Homework Questions.

These relate to the content of design catalyst, design discipline, materials, and making processes. These questions can also form the basis of Class Tests.

Class Tests.

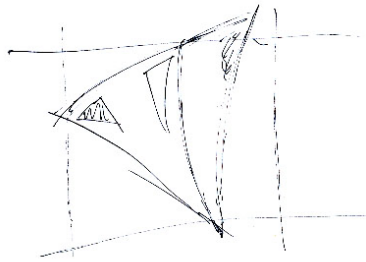
One or two class tests per project is normal and these are formulated from homework questions and notes made during the project. These questions can form the basis of examinations. There is plenty of scope for teachers to provide additional class tests from the supplied material.

Evaluation.

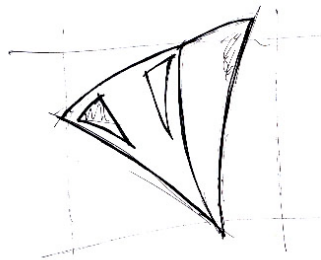
It is important for students to reflect not only on how they have gone about the project, but also to evaluate their design according to the design parameters. A series of questions is provided to do this.

Concept sketches are done in the *ideas stage* of the design process.

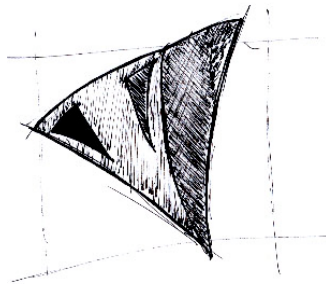
- Concept sketches are always freehand and drawn quickly.
- Use a fine liner (not pencil).
- Never scribble or cross out what you think are bad ideas.
- Show various views (perspective, orthogonal, sectional and detail views)
- Use colour
- Use your fine liner in the following way



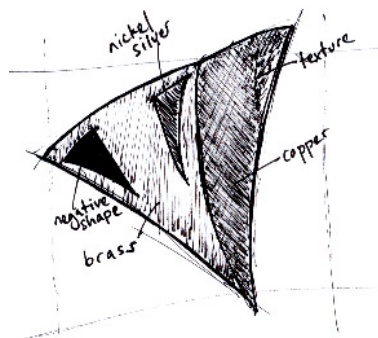
- 1. Construct** your overall shape,
 - Light lines are drawn quickly
 - Lines are long
 - Some lines will be incorrect



- 2. Firm** in the correct lines
 - Go over them more slowly
 - Lines are long
 - Make an outline extra dark



- 3. Shade** in a chosen vertical face
 - Use light, fast diagonal lines



- 4. Annotate** by adding notes on various aspects of your design
 - Words help people understand your ideas

Archipendant

Working with copper and brass – Teachers' notes

	Equipment	Use	Safety
Marking out	<ul style="list-style-type: none"> • Cardboard prototype • Pencil • Paper • scissors • paste 	<ul style="list-style-type: none"> • Trace the individual pieces of the prototype onto paper. • Cut out the shapes • Paste them onto to your pieces of metal 	<ul style="list-style-type: none"> • Sit down when cutting out
Cutting / Piercing	<ul style="list-style-type: none"> • Jewellers saw frame • Metal jewellery blades • Bench peg / pin. • Drill press 	<ul style="list-style-type: none"> • Cut out your metal using the paper as a guide. • Rest your work on the bench peg / pin. • If your design includes a negative shape use a drill press to achieve the piercing. 	<ul style="list-style-type: none"> • Use safety glasses when operating the drill press. • Correct posture • Clamp your work • Know how to stop the machine quickly
Filing	<ul style="list-style-type: none"> • Big half round file • Needle files • Rough emery paper 	<ul style="list-style-type: none"> • File rough edges and smooth any pointed angles. • Use needle files for hard to reach places and for obtaining particular profiles / shapes. • Smooth, file and clean surfaces that are going to be joined. 	<ul style="list-style-type: none"> • Sit down whilst filing. • Use files in the correct manner and there shouldn't be a problem
Joining	<ul style="list-style-type: none"> • Easy / medium / hard solder • Appropriate soldering surface • Side cutting pliers • Soldering tweezers • Flux paste • Soldering torch and gas bottle • Lighter / flint • Copper tongs • Pickle • Water 	<ul style="list-style-type: none"> • solder is used to hold metal together • place the pieces on a brick for support. • make sure you cut solder no more than 2mm each in length • paint flux on the join and use the tweezers to place the solder onto the join. • Use the flint / lighter to ignite the solder torch and solder your pieces together • Use the copper tongs to place your work in the pickle solution, then water. 	<ul style="list-style-type: none"> • Make sure you are the only person in the designated soldering area. • You are to turn the solder torch on and off • Use the copper tongs so you don't burn your fingers. • Make sure you have completed the soldering safety test
Finishing	<ul style="list-style-type: none"> • Needle files • Different grades of emery paper (from rough to smooth) • Silver polishing cloth • Flat nosed pliers • Leather • End caps 	<ul style="list-style-type: none"> • Use the needle files to file any excess solder and to neaten shape • Use emery paper to smooth surfaces and get rid of any scratches • Use polishing cloth to polish your final piece. • Thread the pendant onto the leather and attach end caps 	<ul style="list-style-type: none"> • Sit down whilst filing

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Soldering Safety Test

Photocopy this soldering safety test and distribute it to the class.

1. List at least 3 hazards of what can happen if more than one person in the soldering area?

2. Why should you tie your hair back or roll up your sleeves before soldering?

3. Why is it dangerous if you get a friend to light the soldering torch for you?

4. If your friend who is on the other side of the room calls out your name whilst you are soldering, what should you do?

5. What should you do if you get some pickle solution on your skin?

6. Why shouldn't you lean over your work when you are soldering?

7. Number the following steps involved in the soldering process in the correct order.

- Solder your piece
- Ensure you have correctly prepared your metal before stepping into the soldering area
- Use the tongs to get your piece out of the water
- Make sure there is a window open nearby
- Light the soldering torch
- Use the tongs to place the piece in the water
- Tie your hair back and roll up your sleeves
- Turn on the gas on the soldering torch
- Use the tongs to place the piece in the pickle
- Check that no one else is in the soldering area

8. True or false. You can move around with the soldering torch on.

9. Before placing the soldering torch back on the soldering bench, what should you make sure you have done?

10. Why should you always listen to your teacher

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Soldering Safety Test – Teachers notes

1. List at least 3 hazards of what can happen if more than one person in the soldering area?

You could accidentally burn them

They could accidentally knock you and you could burn yourself

You could be distracted by them and break another safety rule

2. Why should you tie your hair back or roll up your sleeves before soldering?

Your hair could swing in the way of the torch and your sleeves too.

3. Why is it dangerous if you get a friend to light the soldering torch for you?

Because you may not be ready and drop the torch, or burn yourself, you might not have finished preparing the surface

4. If your friend who is on the other side of the room calls out your name whilst you are soldering, what should you do?

Ignore them. OR continue soldering and when you have finished, then answer them.

5. What should you do if you get some pickle solution on your skin?

Wash the area with water

6. Why shouldn't you lean over your work when you are soldering?

The fumes may be too strong; the reflected heat may burn your face.

7. Number the following steps involved in the soldering process in the correct order.
 - Solder your piece - 7
 - Ensure you have correctly prepared your metal before stepping into the soldering area - 3
 - Use the tongs to get your piece out of the water - 10
 - Make sure there is a window open nearby - 4
 - Light the soldering torch - 6
 - Use the tongs to place the piece in the water - 9
 - Tie your hair back and roll up your sleeves - 1
 - Turn on the gas on the soldering torch - 5
 - Use the tongs to place the piece in the pickle - 8
 - Check that no one else is in the soldering area - 2

8. True or **false**. You can move around with the soldering torch on.

9. Before placing the soldering torch back on the soldering bench, what should you make sure you have done?

You should make sure you have turned the soldering torch completely off before placing it back on the soldering bench.

10. Why should you always listen to your teacher

You should always listen to your teacher because they may be saying something important. If you are not listening you may miss an important safety instruction and do the wrong thing and either hurt yourself or somebody else, or even damage equipment.

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Soldering Checklist

Photocopy this checklist and place it on the wall near the soldering area.

1. **Does your work fit nicely, or are you relying on the solder to fill the gaps?**

2. **Have you recently used emery paper / files to clean the two surfaces of the metals that are to be joined. ARE THE METALS CLEAN?**

3. **Remember to lightly coat the surfaces with flux.**

4. **Have you used the correct solder wire?**
REMEMBER: 1st solder join – hard
2nd solder join – medium
3rd solder join – easy

5. **Make sure your hair is tied back and loose clothing is removed.**

6. **Remove flammable objects from the soldering bench.**

7. **Open a nearby window.**

8. **Concentrate on what you are doing – do not get distracted.**

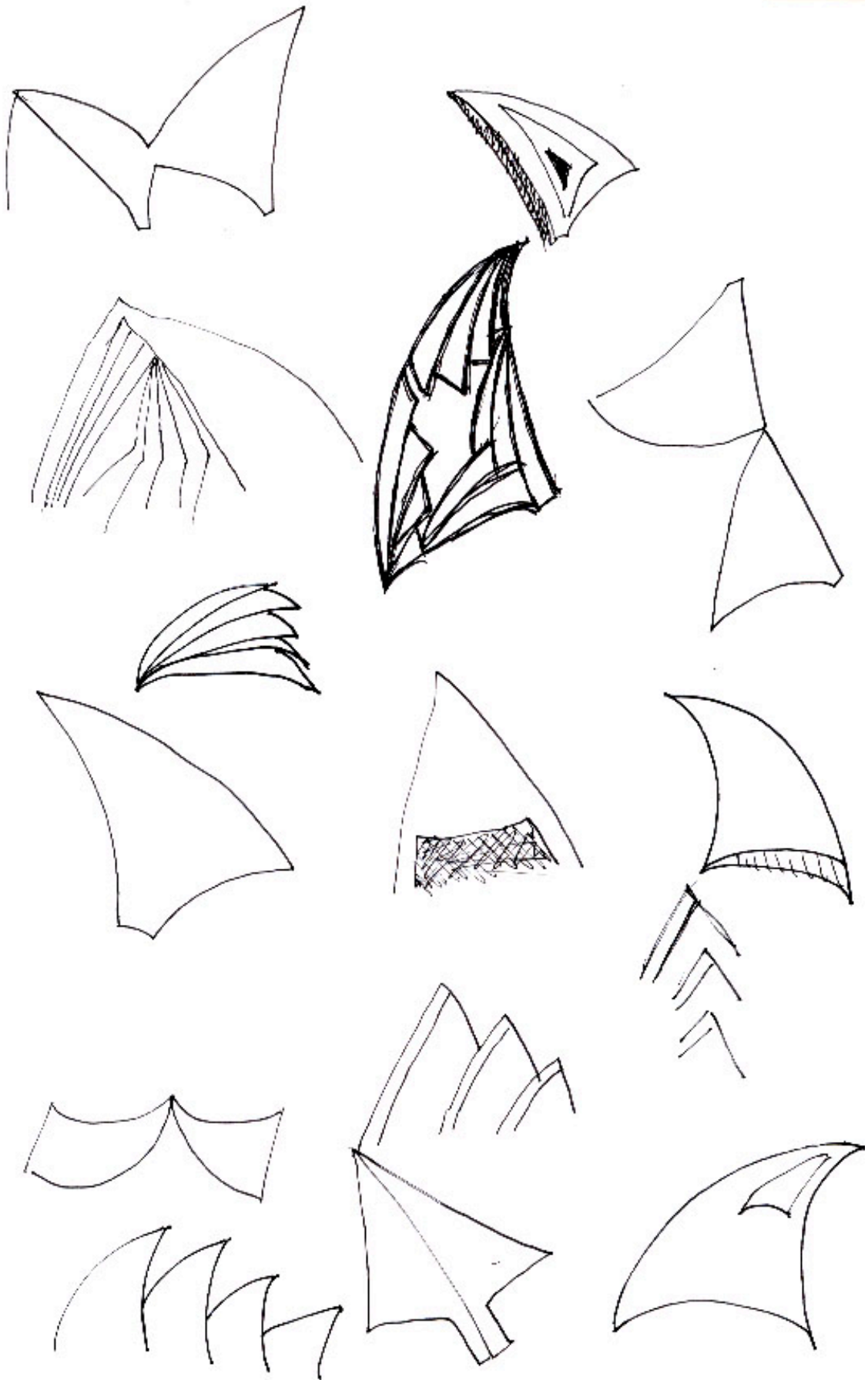
9. **Make sure you turn the soldering torch off completely before you put it back down.**

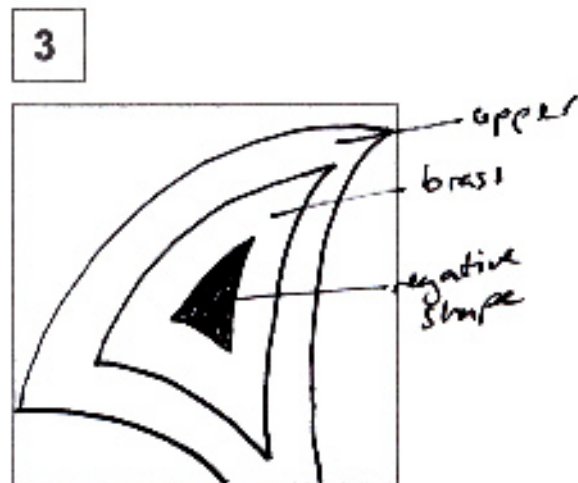
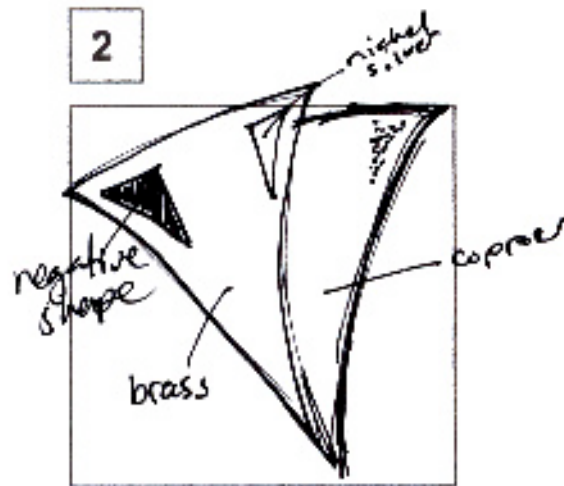
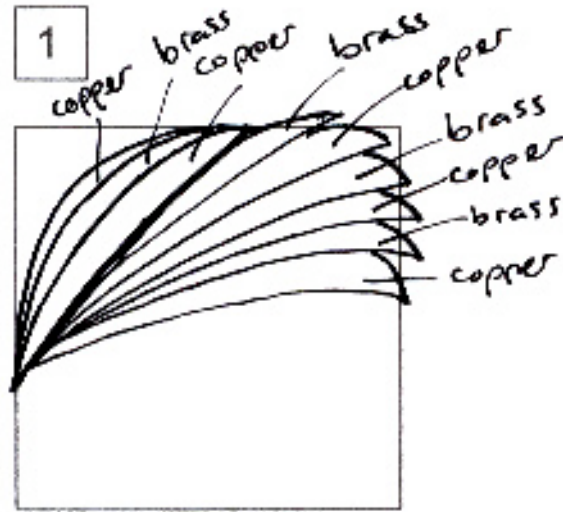
10. **Use the copper tongs to quench your work in the bowl of water, then place it in the bowl of pickle for about five minutes.**

Week	Page	Task
1	3	<input type="checkbox"/> Answer questions 1 – 4 on the Sydney Opera House Homework worksheet
2	3 4 10-12	<input type="checkbox"/> Answer questions 5-8 on the Sydney Opera House homework worksheet. <input type="checkbox"/> Study for Soldering Safety test
3		
4		
5	14 21	<input type="checkbox"/> After watching ch 7-9, students transfer their video notes to 'working with copper and brass worksheet' <input type="checkbox"/> Students paste in prototypes
6	5 6	<input type="checkbox"/> Read 'Metal Information' sheet and answer questions 1 - 4.
7	6 7 ALL	<input type="checkbox"/> Complete question 4 - 8. 'Metal Information' worksheet. Study for class test.
8	24 ALL	<input type="checkbox"/> Complete 'Product Reference' homework sheet Study for class test
9	ALL	<input type="checkbox"/> Study for class test
10	25 26 ALL	<input type="checkbox"/> Complete any unfinished work for submission. <input type="checkbox"/> Study for class test. Revise class test corrections

archipendant

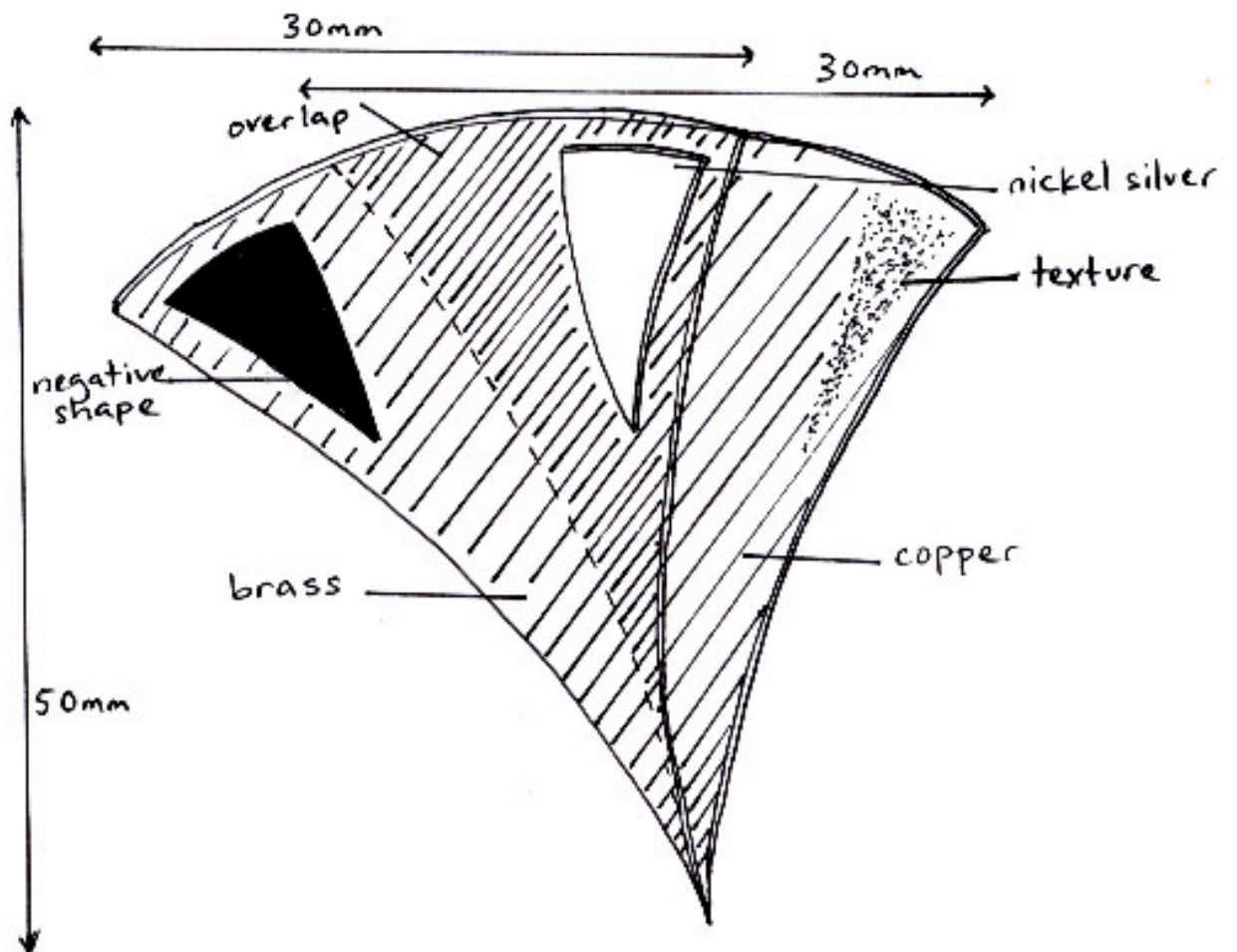
Image Brainstorm OHT





archipendant

Final Design OHT



archipendant

Final Class Test

	20

Name: _____
Class _____

Answer the following questions in the spaces provided.

1. Name 2 metals that you worked with during the archipendant project.
(2 marks)

2. What colour is copper? (1 mark)

3. What is an alloy? (2 marks)

4. Name two methods of checking that a jewellery blade is inserted correctly. (2 marks)

5. What are three safety aspects that should be considered before soldering? (3 marks)

6. True or false - your entire pendant needs to be filed and polished after every soldering join. (1 mark)

7. Name the three different grades of solder wire. Which solder wire do you use first, second and third. What is the reason for this? (4 marks)

8. What can happen if the two surfaces of metal to be joined are not cleaned before soldering. (1 mark)

9. What are the two types of soldering joins you learnt in the archipendant project? Briefly describe the process of each one. (3 marks)

10. What should you use to pick up your piece after soldering it? (1 mark)

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Final Class Test - ANSWERS

20

Name: _____ Answers _____

1. Name 2 metals that you worked with during the archipendant project. (2 marks)

Copper, brass, & nickel silver (extension)

2. What colour is copper? (1 mark)

Copper is reddish / brown in colour.

3. What is an alloy? (2 marks)

A combination of 2 or more metals.

4. Name two methods of checking that a jewellery blade is inserted correctly. (2 marks)

Running your finger along the blade and feeling the direction of the teeth of the blade.

Plucking the blade once it is inserted and obtaining a 'twang' sound.

5. What are three safety aspects that should be considered before soldering? (3 marks)

Removing any loose clothing E.g. a scarf, tying hair back, rolling up sleeves, opening windows, ensuring no one else is in the soldering area,

removing all flammable objects from the soldering area

6. True or false - your entire pendant needs to be filed and polished after every soldering join. (1 mark)

False

7. Name the three different grades of solder wire. Which solder wire do you use first, second and third. What is the reason for this? (4 marks)
1st - Hard, 2nd - medium and 3rd - easy.

To avoid melting any previous soldering joins

8. What can happen if the two surfaces of metal to be joined are not cleaned before soldering. (1 mark)

They may not 'stick' together OR the soldering join may break later

9. What are the two types of soldering joins you learnt in the archipendant project? Briefly describe the process of each one. (3 marks)

Chip soldering. Solder wire is placed along the join. It is used to join

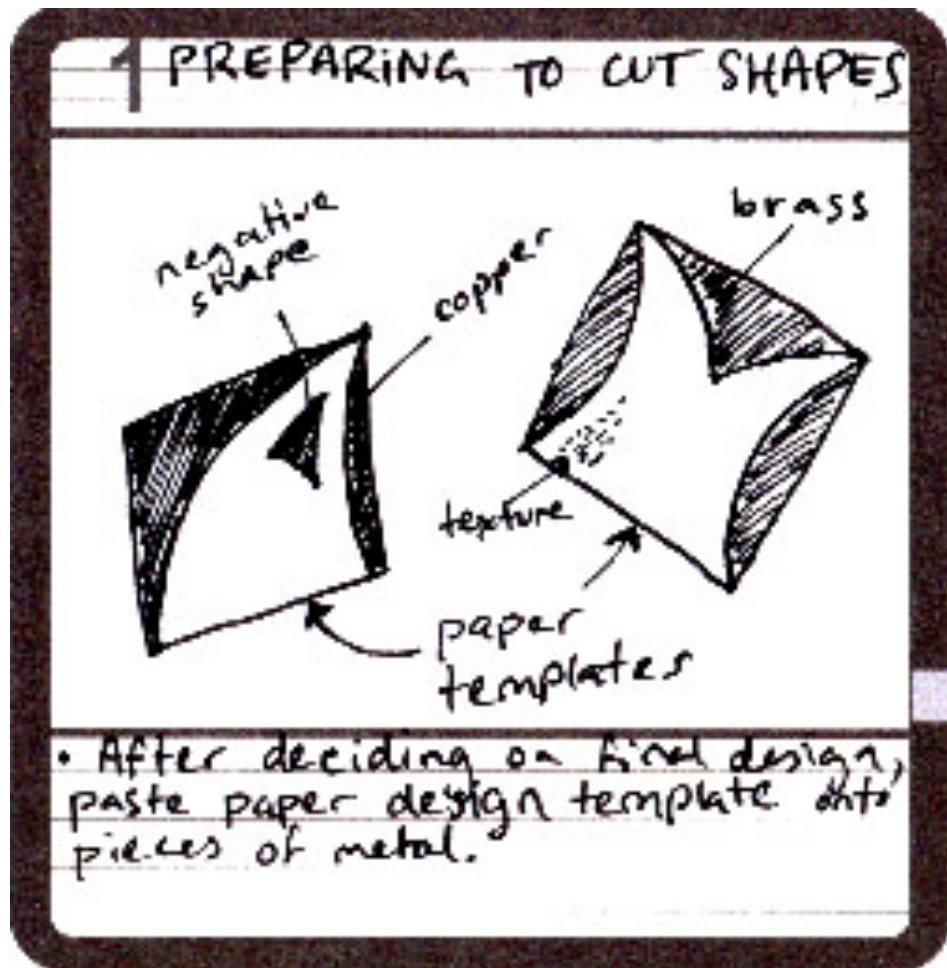
2 end pieces of metal.

Sweat soldering. Solder wire is placed between 2 pieces of metal to be

joined.

10. What piece of equipment should you use to pick up your piece after soldering it? Why (1 mark)

Copper tongs - to avoid burns and so there is no reaction with the pickle



1. Number section and complete a title, eg. "2. FILING".
2. Draw the process and label tools and equipment
3. In point form describe the process - include any safety issues.