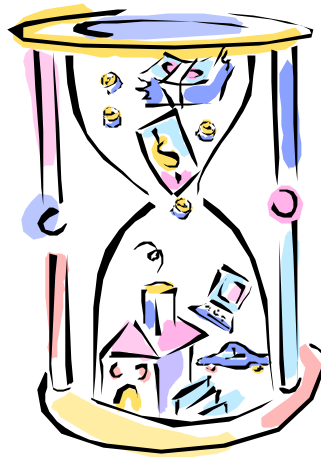




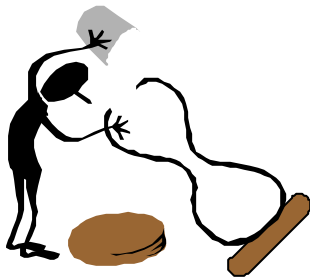
TIME
CAPSULE



Student



Workbook



Student Name:

Teacher:

Class:

Date Received:

Date Submitted:



TIME CAPSULE



TIME CAPSULE BRIEF:

You are required to design a time capsule that will be buried 2 metres underground on college property for a period of 5 years. Towards completion of your senior year your class will dig the capsules up during a ceremony celebrating your time at Xavier Catholic College. You will look at all the designs from your class and determine which one best meets the design brief. The most popular solution determined by your class will be chosen as the model to manufacture time capsules for every year 8 student at Xavier Catholic College this year.

Your time capsule design must meet the following specifications:

1. The total cost of the time capsule must be less than \$5.00 per capsule
2. The capsule must house the contents defined by the Integrated Studies Students
3. The capsule must be able to be manufactured at College

During the design process you will need to:

- A. determine the most appropriate location for the burial of the time capsules
- B. research, investigate and select the most appropriate materials to use for the time capsules
- C. research, investigate and select the most appropriate processes for manufacturing the time capsules – design the time capsule
- D. select final design
- E. cost the manufacturing of the time capsules
- F. test time capsule prototypes, reflect and improve if necessary
- G. purchase the materials
- H. manufacture the time capsule
- I. coordinate the burial of the time capsules
- J. evaluate the design process you have now completed

ASSESSMENT CRITERIA

You will be assessed on your ability to demonstrate that you are a:

- **Quality Producer** who manufactures a time capsule that meets the requirements of the design brief
- **Leader and Collaborator** who works cooperatively to investigate, design and manufacture a time capsule



TIME CAPSULE



- **Effective Communicator** who:
 - communicates ideas to the group
 - compiles the contents of the capsule
 - obtains quotes on materials
 - orders materials
- **Designer and Creator** who generates design plans with resourcefulness, insight and aesthetic judgement and makes a prototype of the time capsule
- **Active Investigator** who designs and performs fair tests to pose problems, initiate questions and hypotheses to draw conclusions about the properties of a range of materials and manufacturing processes
- **Reflective, Self Directed Learner** who creates a cycle of reflection by:
 - setting priorities and achievable goals
 - taking responsibility for actions
 - monitoring effectiveness of goals and
 - resetting goals for further action



TIME CAPSULE



A. Determine the most appropriate location for the burial of the time capsules:

1. Locate a set of plans in the college that show all existing and future building plans for the next five years
2. Organise a meeting with the school Principal (or representative), and any other people you consider necessary in order to discuss the plans.

Your meeting will have the following people there:

-
-
-
-
-

3. At the meeting you will determine an appropriate location for the burial site. You will need to consider:

- access in 5 years (eg. Backhoe access)
- where you will be in 5 years (i.e. The senior area)
-
-
-
-

4. Keep a record of the minutes from this meeting and attach to your workbook
5. Sketch a plan of the burial location on page 6
6. Your class is required to organise someone from industry to determine what the ground is like at your burial site (i.e. Organise a soil test). Invite all year 8 to the soil test

- What career name is given to this person?

- Describe the process used to test the soil?



TIME
CAPSULE



Sketch a plan of the burial location:



TIME CAPSULE



B. Research, investigate and select the most appropriate materials to use for the time capsules

List five (5) materials that are currently used underground in our society and describe the materials characteristics and their applications (remember to reference your source):

1. Material Name: _____

Characteristics: _____

Application: _____

Reference: _____

2. Material Name: _____

Characteristics: _____

Application: _____

Reference: _____



TIME CAPSULE



3. Material Name: _____

Characteristics: _____

Application: _____

Reference: _____

4. Material Name: _____

Characteristics: _____

Application: _____

Reference: _____



TIME CAPSULE



C. Research, investigate and select the most appropriate processes for manufacturing the time capsules – design the time capsule

Ultimately, the shape and size of your time capsule will be dependant on the contents of the capsule. In the space below list all the things that you are going to put inside your capsule.

Contents of Time Capsule:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____

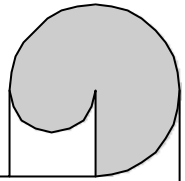


TIME CAPSULE



DESIGN IDEATIONS

Concept 1



In the space provided draw up your design ideas.
Remember to include notes on features of the design.
A list of pro's and con's is always a good idea.
Remember to attach extra pages if you require them

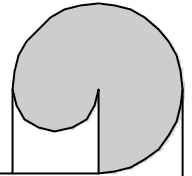


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CAPSULE



DESIGN IDEATIONS

Concept 2



Remember that there is nothing more dangerous than an idea if it's the only one you



TIME CAPSULE

This is where you show me what you are going to make. Remember to attach details of your capsule design with sketches and notes explaining your

D. Select final design



DESIGN IDEATIONS

Chosen Design

A large, rounded rectangular area intended for students to draw their capsule design and include explanatory notes. The area is currently blank.

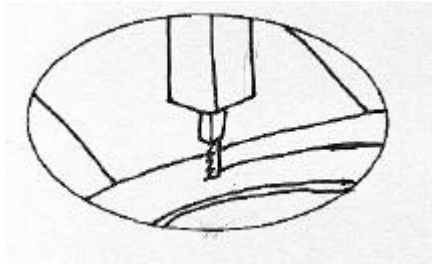
This section is where you show me that you know what is involved in making your capsule. In the oval provided, sketch the process and then note beside it what is



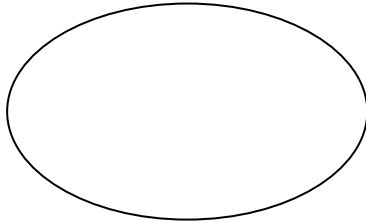
TIME CAPSULE



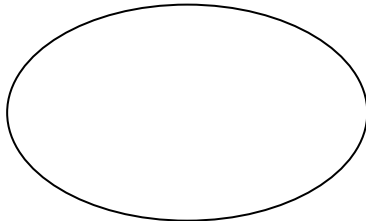
SEQUENCE SKETCHING



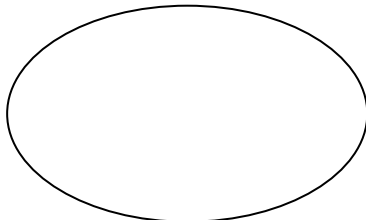
Eg: Step 10 Cut out shapes on the **Bandsaw**, keeping as close as possible to the waste side of the line.



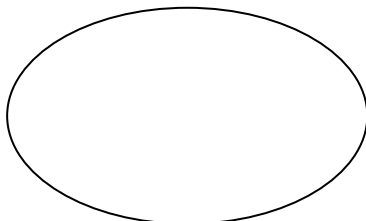
Step 1



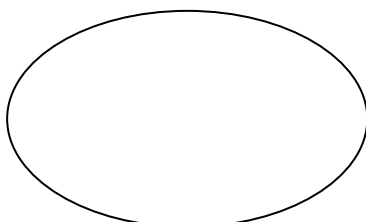
Step 2



Step 3



Step 4



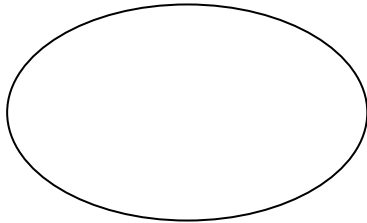
Step 5



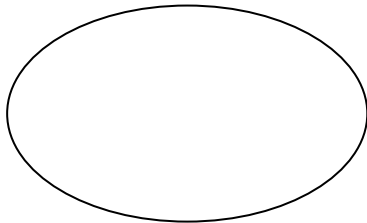
TIME
CAPSULE



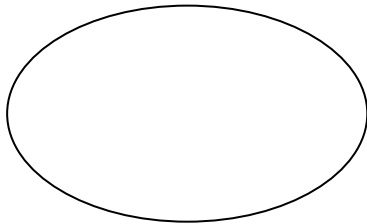
SEQUENCE SKETCHING CONTINUED



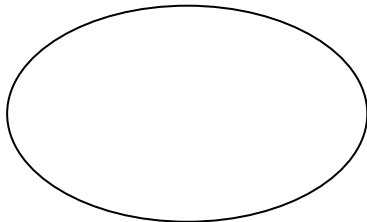
Step 6



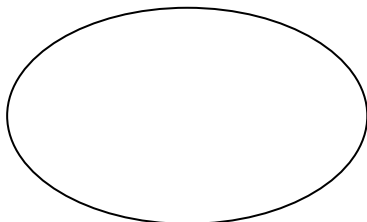
Step 7



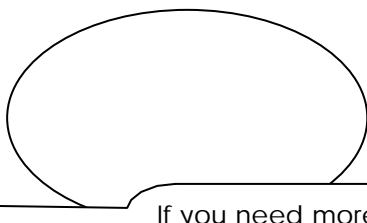
Step 8



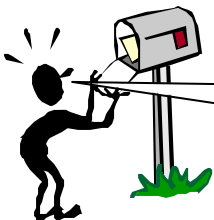
Step 9



Step 10



Step 11



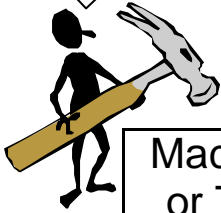
If you need more pages you can add them in after this page.

In the following table is a risk assessment of the possible machines and hand tools that

TIME CAPSULE



Machine and Hand Tool Usage & Safety



Machine or Tool	Hazards	Risks	My Ability	Risk Control	Received Instruction <small>(Teachers Signature)</small>
Band Saw	Electricity Rotating Blades	Medium, level Risk - Be aware that I can cut my fingers off.	LOW - I have only used it once before	Ensure that the Teacher is with me whilst I use this machine	DO NOT USE WITHOUT TEACHER SIGNATURE
					DO NOT USE WITHOUT TEACHER SIGNATURE
					DO NOT USE WITHOUT TEACHER SIGNATURE
					DO NOT USE WITHOUT TEACHER SIGNATURE
					DO NOT USE WITHOUT TEACHER SIGNATURE
					DO NOT USE WITHOUT TEACHER SIGNATURE



TIME CAPSULE



Check the following boxes when completed

G Purchase the materials

H Manufacture the time capsule

I Coordinate the burial of the time capsules

J Evaluate the design process you have now completed

After the whole process of building the time capsule and testing it, answer the following questions about what you learned from the design process

SELF EVALUATION



1. How well did the final design work? Did all of the contents fit? Did it cost less than \$5.00? Does it seal well enough?

2. What improvements could I make to my time capsule to make it better?

3. How did the brief influence my type of design?



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4. What changes did I make during the manufacturing process?

5. How did my research influence my design?

6. What is the biggest **one** thing that I have learned from this design process?

7. What are some of my thoughts about Design Technology as a subject? Did I enjoy it? Did I learn anything from it? Would I change it if I could?

