



EARNSHAW STATE COLLEGE

Student name:

Student number:

Teacher name: MR CHAPMAN

Date:

CLOCK CRITERIA

Subject Year 7 Industrial Technology and Design

Technique Project (Product and Theory Booklet)

Unit Manufacturing Design

Topic The Manufacturing of Key Rings

Conditions

Time 10 Weeks (ongoing assessment)

Perusal

-

Word length

-

Seen/unseen

Seen

Due Date

Draft Due

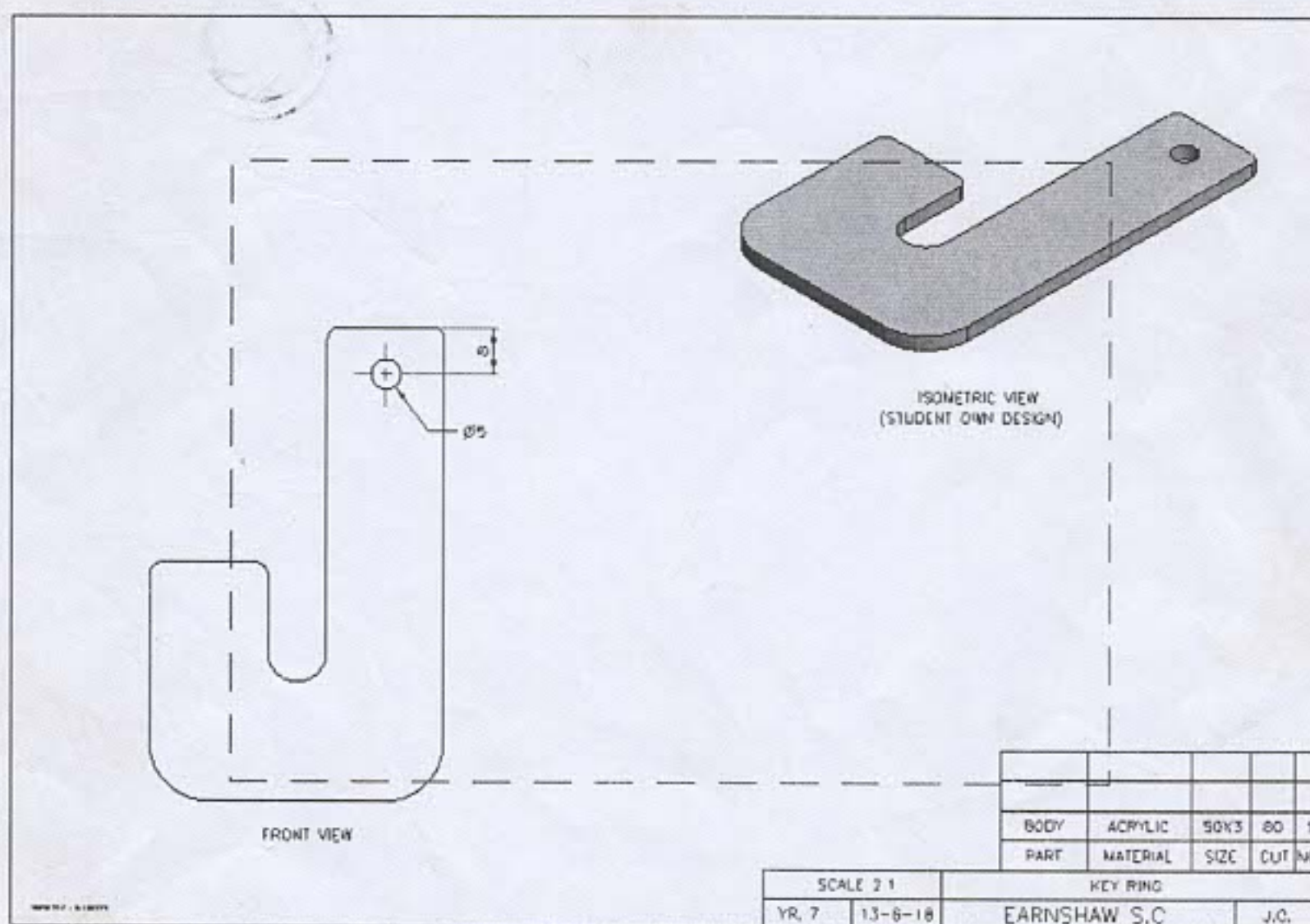
Instructions

- Work is to be completed individually, supervised with teacher assistance. Some assistance (e.g. assembly phase, occasional technical assistance) from fellow students is allowed.
- Questions 1, 2 and 6 to be done under exam conditions.

Task

You are a product designer for a company that has asked you to design and build a prototype Key ring.

Stimulus/Context



Assessment objective/s

- Knowledge and Understanding
- Processes and Production Skills

Year 7 / 8 I.T.D. Criteria Sheet

The folio of student work has the following characteristics

		A	B	C	D	E
Knowledge and Understanding	1. Technology & society	<u>comprehensive</u> explanation of: factors that influence the design of products, services and environments to meet present and future needs the contribution of design and technology innovations and enterprise to society	<u>detailed</u> explanation of: factors that influence the design of products, services and environments to meet present and future needs the contribution of design and technology innovations and enterprise to society	explanation of: factors that influence the design of products, services and environments to meet present and future needs the contribution of design and technology innovations and enterprise to society	<u>description</u> of: factors that influence the design of products, services and environments to meet present and future needs the contribution of design and technology innovations and enterprise to society	<u>statements</u> about: factors that influence the design of products, services and environments to meet present and future needs the contribution of design and technology innovations and enterprise to society
	2. Technologies contexts	<u>comprehensive</u> explanation how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts	<u>detailed</u> explanation of how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts	explanation of how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts	<u>partial</u> explanation of how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts	<u>statements</u> about how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts
K. & U. Overall Standard						
Processes and Production skills	3. Investigating and defining	<u>comprehensive</u> evaluation of needs or opportunities for each of the prescribed technologies contexts	<u>detailed</u> evaluation of needs or opportunities for each of the prescribed technologies contexts	evaluation of needs or opportunities for each of the prescribed technologies contexts	<u>explanation</u> of needs or opportunities for each of the prescribed technologies contexts	<u>statement</u> about needs or opportunities for each of the prescribed technologies contexts
	4. Generating and designing	<u>purposeful</u> creation and adaptation of design ideas making <u>well-considered</u> decisions	<u>effective</u> creation and adaptation of design ideas making <u>considered</u> decisions	creation and adaptation of design ideas making <u>considered</u> decisions	<u>partial</u> creation and adaptation of design ideas making decisions	<u>fragmented</u> creation and adaptation of design ideas
		<u>comprehensive and effective</u> communication to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques	<u>effective</u> communication to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques	communication to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques	<u>partial</u> communication to audiences using technical terms and technologies and graphical representation techniques	<u>fragmented</u> communication to audiences using <u>everyday language</u> and graphical representation techniques
	5. Producing and implementing	<u>proficient and consistent</u> production of effective designed solutions for the intended purpose independently and safely	<u>consistent</u> production of effective designed solutions for the intended purpose independently and safely	production of effective designed solutions for the intended purpose independently and safely	<u>guided</u> production of designed solutions for the intended purpose safely	<u>guided</u> production of designed solutions for a purpose safely
		<u>discerning</u> use of criteria for success (including sustainability considerations) to judge the suitability of: • their ideas • designed solutions • processes	<u>informed</u> use of criteria for success (including sustainability considerations) to judge the suitability of: • their ideas • designed solutions • processes	use of criteria for success (including sustainability considerations) to judge the suitability of: • their ideas • designed solutions • processes	<u>partial</u> use of criteria for success (including sustainability considerations) to <u>describe</u> the suitability of: • their ideas • designed solutions • processes	<u>fragmented</u> use of criteria for success to make <u>statements</u> about: • their ideas • designed solutions • processes
	7. Collaborating & managing	application of project management skills to include <u>comprehensive</u> documentation and <u>discerning</u> use of project plans to manage production processes.	application of project management skills to include <u>detailed</u> documentation and <u>informed</u> use of project plans to manage production processes.	application of project management skills to document and use project plans to manage production processes.	application of project management skills to <u>partially</u> document project plans and <u>use</u> of production processes.	<u>use</u> of project management skills to <u>partially</u> document <u>aspects</u> of project plans and <u>use</u> <u>aspects</u> of production processes.
P.P.S. Overall Standard						

RESOURCES: 3 DIFFERENT HAND FILES, BATTERY DRILL,

KNOWLEDGE AND UNDERSTANDING

COPING & TENON SAW.

1. Technology and society

A. Explanation of factors and technologies

- (i) What is the name of the material used in the Key ring?

1 MK
POLY - METHYL - METHACRYLATE (ACRYLIC)

- (ii) A sheet of plastic 900mm long and 600mm wide material is cut into pieces 80mm long and 50mm wide. How many key ring blanks could be cut from this size sheet?

2 MKS
$$\begin{array}{l} 900(L) \div 80(L) \\ = 11.25 \\ 600(W) \div 50(W) \\ = 12 \end{array} \quad \parallel \quad \begin{array}{l} \text{NO. OF PIECES} = \\ 11 \times 12 \\ = 132. \end{array}$$

- (iii) 95 key rings can be cut out of one large piece of plastic. How much would one key ring cost if a full sheet costs \$76.45.

2 MKS
$$\begin{array}{l} \$76.45 \div 95 \\ = \$0.80. \end{array}$$

- (iv) List six tools/equipment items used in the production of your key ring.

- 6 MKS

1. <u>HOLDFAST</u> <u>PENCIL</u>	4. <u>FILE</u> <u>WET & DRY</u>
2. <u>DRILL PRESS</u> <u>DRILL BIT</u>	5. <u>"V" CUTTING BOARD</u>
3. <u>VICE</u> <u>COPING SAW</u>	6. _____

B. Changes to designed solutions

List 2 possible mistakes that could lessen the quality of your final key ring.

4 MKS

	POSSIBLE MISTAKE	HOW TO PREVENT THE MISTAKE OR CORRECT IT.
1.	eg. BREAK. PLASTIC	(CORRECTION) START WITH A NEW PIECE. (PREVENTION) HOLD PLASTIC FIRMLY.
2.		

TOTAL: 15 MARKS

2. Technologies contexts

A. Evaluation of tools (technologies).

In producing the key ring explain why / compare why we used certain tools and not others. Relate your answer to the key ring.

Why would you use a **Smooth File** compared to a **Bastard File**?

A BASTARD FILE PUTS DEEP SCRATCHES IN
THE MATERIAL.

WHEN A SMALL AMOUNT OF MATERIAL IS TO BE
REMOVED

Which is better, drilling the key ring hole using a **drill press** or a **battery drill**?

IT IS DIFFICULT TO HOLD A BATTERY DRILL AT
90° TO THE JOB. HOLES WILL GENERALLY NOT
BE SQUARE.

Coping saw or a tenon saw.

A TENON SAW IS USED TO MAKE STRAIGHT CUTS.
A COPING SAW CAN MAKE CURVED CUTS



PROCESS AND PRODUCTION SKILLS

3. Investigating and defining

A. Context: You are a product designer for a company that has asked you to design and build a prototype Key ring.

B. Possible key ring shapes. These may include a surfboard, the first letter from a person's name, a sporting team logo (Broncos), a popular brand logo (Nike).

Below, list ten key ring shapes that appeal to you.

1. _____ 2. _____ 3. _____ 4. _____
5. _____ 6. _____ 7. _____ 8. _____
9. _____ 10. _____



C. Tick "✓" 3 shapes you think are the best.

D. Overall shape.

- Think about the outside of a possible shape.
- Think about the only internal details that can be used are circles which are created by a drill.
- Think about the example of a smiley face with eyes and mouth. The mouth would not be possible to create as it is not circular and so can't be used in the design.

After considering all possible factors, sketch a possible key ring design. **USE A PENCIL.**
(Do not to use an eraser or ruler).

E. Explain why you have chosen this design and list 2 aspects that you like and 2 aspects you dislike about your first attempt. Start each sentence with a capital letter and end with a full stop.

Word List: Symmetrical, break, shape, circular, straight, parallel, square.

+ 's - _____

- 's - _____

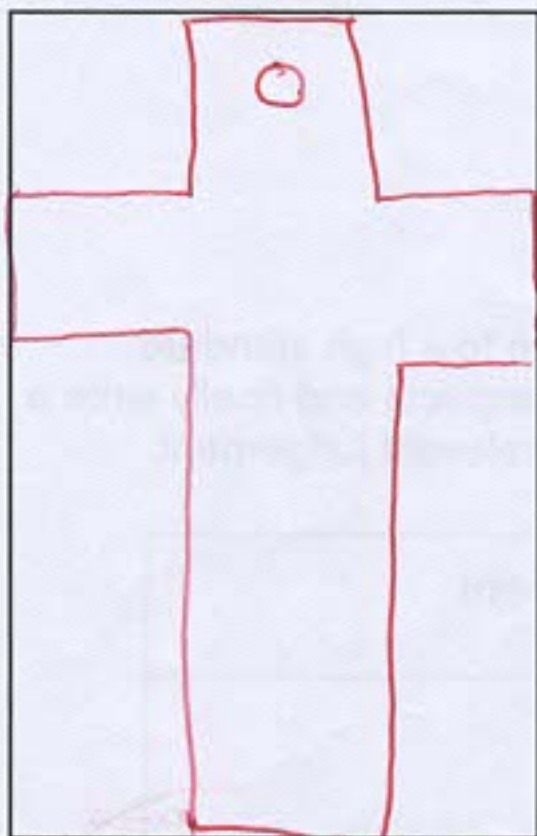


Don't start a sentence with "because", "and", "but", "also".

4. Generating and designing

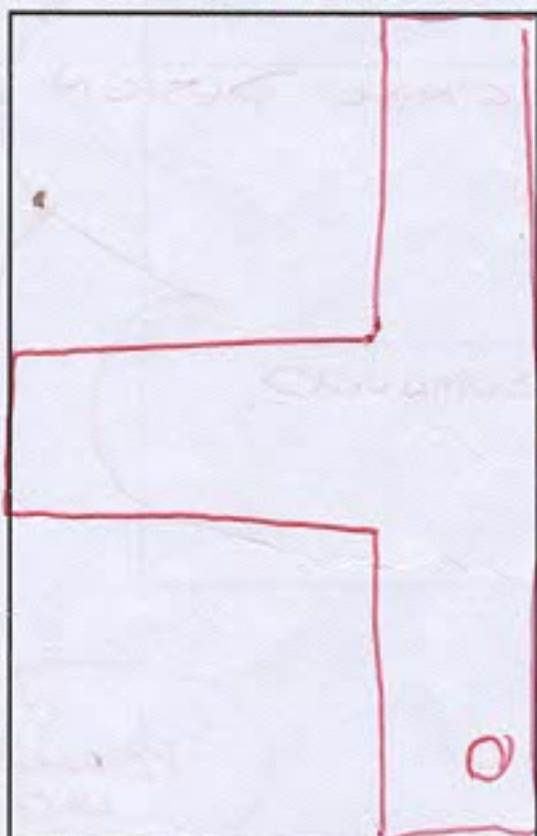
Sketch three different design **variations** of your chosen shape. Think about square corners versus rounded corners. Think about the size of the shape compared to the size of the plastic. Think about the position of the key ring hole. Think about the symmetry of the shape. Now write a comment (+ / -) about each one and pick the final design you will use. Explain why!!! **USE A PENCIL.**

Start a sentence with a capital letter and end with a full stop.



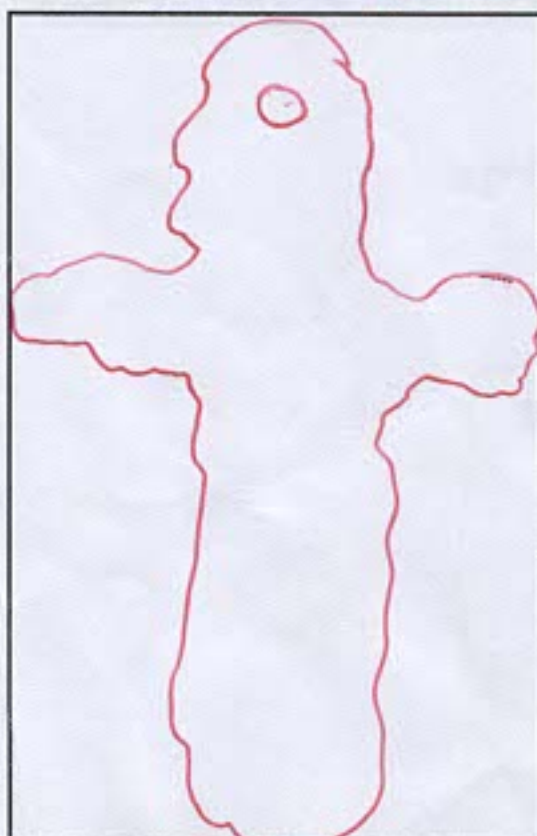
+ 's - _____

- 's - _____



+ 's - _____

- 's - _____



+ 's - _____

- 's - _____

5. Producing and implementing

Key Ring production.

This relates to the quality of your final key ring.

6. Evaluating

Evaluation

To produce a well-made Key Ring, it's important that your work is done to a high standard. Make a judgement of **your** project (tick the relevant box) about these aspects and finally write a comment justifying your decision, explaining why you have made the relevant judgement.

Aspect	Judgement				Comment
	V. G.	G.	S.	P.	
1. How strong and durable is my key ring?	☒	☐	☐	☐	
2. To what extent is the final key ring shaped and proportionally correct in relation to the chosen design?	☒	☐	☐	☐	AS PER ORIGINAL DESIGN
3. How well have my Key Ring edges been polished? WHAT IS THE QUALITY OF MY KEY RING EDGES?	☒	☐	☐	☐	SCRATCHES REMOVED.

7. Collaborating and managing

Making adjustments to the project where necessary and working independently and in a cooperative manner.

Your teacher will make continual observations regarding these things.

IS MY FINAL KEY RING SHAPE THE SAME AS MY CHOICE IN SECTION 4?

