



<b>Sample assessment task</b>	
<b>Year level</b>	7
<b>Learning area</b>	Technologies
<b>Subject</b>	Design and Technologies: Materials and technologies specialisations
<b>Title of task</b>	Storage box figurine project
<b>Task details</b>	
<b>Description of task</b>	Students are required to develop a design solution while investigating timber and acrylic materials. Students design and construct a storage box using materials available in a studio or workshop.
<b>Type of assessment</b>	Formative
<b>Purpose of assessment</b>	Develop students' understandings of the design process and how products are created and have evolved for consumers.
<b>Assessment strategy</b>	Stages of design folio development or worksheet completion
<b>Evidence to be collected</b>	<ul style="list-style-type: none"> <li>The design folio or series of worksheets</li> <li>Completed product and evaluation sheet</li> </ul>
<b>Suggested time</b>	A semester, approximately 18 weeks
<b>Content description</b>	
<b>Content from the Western Australian Curriculum</b>	<p><b>Knowledge and understanding</b></p> <p><b>Technologies and society</b> Competing factors, including social, ethical and sustainability considerations, in the development of technologies Ways in which products, services and environments evolve locally, regionally and globally</p> <p><b>Materials and technologies specialisations</b> Material and technology decisions and processes influence the selection and combination of materials, systems, components, tools and equipment</p> <p><b>Processes and production skills</b></p> <p><b>Investigating and defining</b> Define and break down a given task, identifying the purpose Consider components/resources to develop solutions, identifying constraints</p> <p><b>Designing</b> Design, develop, review and communicate design ideas, plans and processes within a given context, using a range of techniques, appropriate technical terms and technology Follow a plan designed to solve a problem, using a sequence of steps</p> <p><b>Producing and implementing</b> Safely make solutions using a range of components, equipment and techniques</p> <p><b>Evaluating</b> Independently apply given contextual criteria to evaluate design processes and solutions</p> <p><b>Collaborating and managing</b> Work independently, and collaboratively when required, to plan, develop and communicate ideas and information, using management processes</p>

<b>Task preparation</b>	
<b>Prior learning</b>	Students have an understanding of a simple design process, have ICT capabilities and fundamental hand skills of production in wood.
<b>Assessment differentiation</b>	Teachers should differentiate their teaching and assessment to meet the specific learning needs of their students, based on their level of readiness to learn and their need to be challenged. Where appropriate, teachers may either scaffold or extend the scope of the assessment tasks.
<b>Assessment task</b>	
<b>Assessment conditions</b>	Individually complete a design folio and the construction of the product and evaluation sheet.
<b>Resources</b>	<ul style="list-style-type: none"> <li>• Design task template for folio</li> <li>• Relevant theory and skill demonstrations</li> <li>• Selection of available materials, components, tools and equipment</li> </ul>

## Instructions for teacher

1. Open a discussion about:
  - material and technology decisions and processes influence the selection and combination of materials, systems, components, tools and equipment
  - competing factors, including social, ethical and sustainability considerations, in the development of technologies
  - ways in which products, services and environments evolve locally, regionally and globally
  - the design problem is to:  
Design and produce a figurine style see-in-to storage box for small objects, using timber and acrylic.
2. Below is a page for a mind map. Brainstorming or mind mapping are simple methods for the collection and sorting out of ideas and thoughts.  
Students can create, using computer software or pencil and paper their own mind map about;
  - what is stored in small boxes
  - different types of small storage boxes
  - different shapes that represent a stylised figurine.
3. Instruct students to research, using available research tools, images of ideas students may have about the theme or shapes that could be used for a storage box.  
Design limitations  
Materials:
  - 2 pieces of pine timber or similar that measure 200mm long x 140mm wide x 19mm thick glued together for the body of the storage box
  - 1 piece of pine timber 200mm long x 90mm wide x 19mm thick as a base
  - acrylic shape – 2mm thick, cut using the LASER. It is available in clear and colours. It can be designed as a lid or access to the inside of the box.
  - acrylic can also be used to create accessories and dress up the project.
  - other materials such as screws, googly eyes, hair; grass, sand, PVA glue, paint and optional extras
  - general workshop tools
4. Describe to students a Statement of Intent.
5. Students should complete a PMI on how the characteristics and properties of their design choices meet their statement of intent.
6. Based on the PMIs, students choose one of the designs to develop, and draw out a paper template to transfer to the timber.
7. Discuss with students colours and additional materials they can plan to add to the box.
8. Assist students to list the steps required to build their boxes (demonstrate skills, and instruct students to make notes or give them worksheets during the skill demonstrations).
9. Prepare with the students planned steps of production to collaboratively and safely use tools and equipment in the workshop to produce the storage box.
10. Demonstrate each required step in the production of the timber parts of a sample project.
11. Provide guidance for students in the marking, cutting and shaping of the timber parts of their solution.
12. Demonstrate each required step in the production of the other parts of a sample project, using different acrylics, metals or textiles.

13. Provide guidance for students in the marking, cutting and shaping of the acrylic or other parts of their solution.
14. Provide guidance for students in assembling and finishing their solution.
15. Students should photograph their finished storage box.
16. Discuss the process of evaluation: students write a 50 word reflection about how they think their storage box worked out. Focus on the finished product, its success as well as the areas that were not so good.

Name: \_\_\_\_\_

Group: \_\_\_\_\_

### **Mind Mapping**

A large, empty rectangular box with a thin black border, intended for students to create a mind map. The box is currently blank.

**Research page:**

- Collect and paste 10 images of ideas of your chosen theme (from the mind map).
- Circle and comment on your favourite idea.

**Statement of intent**

Write a clear description of the project you are going to design and make.

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**PMI**

Plus	Minus	Interesting ideas

**Drawing the template**

Maximum area 200mm long or tall by 140mm wide



**List of additional materials and colours for the storage box**

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**Notes from Teacher Production skills demonstration**

Tool and steps of the process

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

**Planning production**

List the tools and equipment, and the steps of the process you need to follow to produce your design.

Tools/equipment	Process

### My storage box and evaluation

Write a 50 word reflection about how you think your storage box worked out. Focus on the finished product, its success as well as the areas that were not so good.

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### Trigger questions

- Did your design satisfy the design brief and statement of intent? If not, what changes did you make and why?
- Did your design turn out as you planned it would? Explain why or why not? (Consider your sketch and comment on the size, shape, colour, added materials etc.)
- Did your production process use the tools and equipment listed? If not, what changes did you make and why?

<b>Sample marking key</b>	
<b>Description</b>	<b>Marks</b>
<b>Technologies and Society</b>	
Demonstrates extensive understanding of the variety and different products (e.g. the mind map and the variety of notes and images).	5
Demonstrates a high level of understanding of the variety and different products (e.g. the mind map and the variety of images).	4
Demonstrates a satisfactory level of understanding of the variety and different products (e.g. the mind map and the variety of images).	3
Has limited understanding of gathering images and presenting them on a mind map, requires guidance to arrange the mind map.	2
Requires assistance to select images to complete the mind map.	1
<b>Subtotal</b>	<b>5</b>
<b>Description</b>	<b>Marks</b>
<b>Materials and Technologies Specialisations</b>	
Develops skills and uses a variety of materials and appropriate processes to design and make a product and justifies materials selected to match their use.	5
Combines skills and materials that are appropriate to make a product to complete the design task. Matches technical process with the choice of materials.	4
Selects materials and processes to make a storage box figurine that are appropriate to complete the task. Makes reference to the choice of materials.	3
Demonstrates limited understanding and requires guidance when selecting appropriate materials and techniques for a specific purpose.	2
Requires assistance to select appropriate materials and processes to make a product.	1
<b>Subtotal</b>	<b>5</b>
<b>Description</b>	<b>Marks</b>
<b>Investigating and defining</b>	
Integrates understanding about designing and applies this to the storage box figurine design. Demonstrates thought and insight into the design of the storage box figurine for the intended recipient e.g. may gather information prior to designing such as likes and dislikes.	5
Applies learning and consistently demonstrates understanding of design processes. The storage box figurine reflects accurate detail in the design.	4
Applies learning accurately and demonstrates developing a sequence of steps by drawing a labelled diagram of the intended storage box figurine.	3
Shows inaccuracies in drawn design and a lack of detail in the Storage box figurine drawing.	2
Shows little accuracy in the task at this level. Design may be incomplete and lack any detail e.g. may just be a drawn storage box figurine.	1
<b>Subtotal</b>	<b>5</b>

Description	Marks
<b>Designing</b>	
Demonstrates extensive knowledge and understanding of design and design choice. Uses a range of appropriate technical terms to explain choices.	5
Demonstrates a high level of competence when choosing a design which is reflected in the drawing of the storage box figurine. Uses appropriate technical terms to explain choices.	4
Able to accurately draw and label a design for a storage box figurine. Uses some technical terms to explain choice.	3
Demonstrates limited level of understanding and has inaccuracies in labelled drawing.	2
Demonstrates very limited understanding of designing and does not communicate ideas clearly.	1
<b>Subtotal</b>	<b>5</b>
Description	Marks
<b>Producing and implementing</b>	
Selects and correctly uses a variety of equipment and appropriate techniques to make a product and justifies each process selected to make a storage box figurine. Justifies safety considerations in detail.	5
Selects materials and matches appropriate techniques for the construction of their storage box figurine and explains choice of process. Explains safety considerations clearly.	4
Selects materials and uses techniques to complete a storage box figurine. Makes reference to the choice of materials. Considers the safety aspects and gives simple explanations.	3
Demonstrates limited understanding when selecting appropriate processes for a specific purpose and requires guidance. Requires assistance to describe the general safety aspects.	2
Requires assistance to select appropriate materials to make a storage box figurine. Does not consider safety when making the storage box figurine.	1
<b>Subtotal</b>	<b>5</b>
Description	Marks
<b>Evaluating</b>	
Comprehensively acknowledges the initial design needs to match the end outcome and accurately explains any alterations made, justifying why they were made.	5
Understands the storage box figurine must match the design and can clarify changes made and give reasons for changes.	4
Follows design accurately and understands the end program should match the initial design. Lists basic changes made.	3
End product may not match design. Attempts to give basic reasons for changes.	2
End product does not match the design and no explanation is given for why OR the explanation is not relevant to the task.	1
<b>Subtotal</b>	<b>5</b>
<b>Total</b>	<b>30</b>