

## Industrial Technology Years 7–10 Life Skills unit: Timber utility box

### Unit title: Timber utility box

**Description:** This unit involves students in the design, development and production of a timber utility box. Students design their own timber utility box, personalise a design or embellish an existing timber box with appropriate decorations. Safe and responsible use of materials, tools and techniques by students is essential in the Industrial Technology course. Teachers should consider this when delivering this unit. *Learning activities address selected ‘learn about’ and ‘learn to’ statements within the Life Skills content of the syllabus and may be prioritised and selected to suit the needs of students. The unit provides a range of ways in which students may engage in learning activities and students should participate at a level appropriate to their abilities and interests.*

### Life Skills Outcomes

A student:

- LS.1.1 recognises safe and unsafe conditions in the context of undertaking a project
- LS.1.2 demonstrates safe practices in the use of materials, tools and equipment
- LS.2.1 recognises that a process is used to design and make projects
- LS.4.1 uses a variety of communication techniques in the context of undertaking projects
- LS.5.1 uses skills and processes in a variety of contexts and projects
- LS.6 evaluates the success of projects.

### Resources

- Examples of timber boxes, materials, and decorative finishes
- Hand and power tools
- Pre-cut pieces and/or kits for construction
- Images and designs of projects and completed projects
- Digital camera
- Research materials including access to the internet and library
- Images of items that would be stored in various timber boxes

### Links

A student:

#### Design and Technology

- LS.1.1 recognises that a process is used to develop design solutions
- LS.1.2 considers factors that influence design
- LS.4.1 develops innovative design solutions
- LS.6.1 selects and uses appropriate processes and techniques in the context of producing design projects
- LS.6.2 participates in producing design projects
- LS.6.3 demonstrates safe practices in the use of equipment and the implementation of techniques

#### Information and Software Technology

- LS.5.3 uses a variety of techniques to present information and software technology solutions.

A student:

#### Mathematics

- MALS-25MG estimates and measures in everyday contexts

#### Visual Arts

- LS.2 explores a variety of materials, techniques and processes
- LS.6 makes a variety of artworks that reflect experiences, responses or a point of view

#### Work Education

- LS.9 demonstrates skills for effective participation in the workplace.

For students working towards Life Skills outcomes in regular classes, teachers may wish to link the activities in this unit with the Stage 5 General Wood Core Module 2 unit ‘**Trinket box**’ in *Industrial Technology Years 7–10: Advice on Programming and Assessment* (pp 30–36).

**Focus: Exploring the function of a variety of timber boxes**

*Outcome: LS.2.1*

Students learn about	Students learn to	Integrated learning experiences, instruction and assessment	Evidence of learning <i>(words in italics refer to Life Skills outcomes)</i>	Feedback
<ul style="list-style-type: none"> <li>• a design process that includes:                             <ul style="list-style-type: none"> <li>– analysis of a problem</li> <li>– idea creation</li> <li>– synthesis of ideas and information</li> <li>– making</li> <li>– evaluating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• recognise the steps in a design process including:                             <ul style="list-style-type: none"> <li>– identify a need</li> <li>– explore ideas</li> <li>– choose preferred ideas</li> <li>– plan steps for making the project</li> <li>– select tools, equipment and materials</li> <li>– make project</li> <li>– evaluate project</li> </ul> </li> </ul>	<p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>• displays a variety of timber boxes</li> <li>• assists students to consider the features and purpose of a range of timber boxes.</li> </ul> <p><b>Students</b></p> <ul style="list-style-type: none"> <li>• explore the function and features of a range of timber boxes. This may include:                             <ul style="list-style-type: none"> <li>– collecting pictures of timber boxes from catalogues or bringing examples from home</li> <li>– recognising and sorting boxes for different purposes, eg Would I store my tools in a trinket box?</li> <li>– recognise the features that enhance the function of a variety of timber boxes, eg lids, closing devices, strength and type of handles, number of compartments.</li> </ul> </li> </ul>	<p>Exploration of the function and features of a range of timber boxes may indicate <i>recognising that a process is used to design and make projects.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students' identification of the design features and functions of a range of timber boxes.</p>

<b>Focus: Choosing a timber box project</b> <i>Outcomes: LS.2.1, LS.4.1</i>				
<b>Students learn about</b>	<b>Students learn to</b>	<b>Integrated learning experiences, instruction and assessment</b>	<b>Evidence of learning</b> <i>(words in italics refer to Life Skills outcomes)</i>	<b>Feedback</b>
<ul style="list-style-type: none"> <li>a design process that includes:               <ul style="list-style-type: none"> <li>analysis of a problem</li> <li>idea creation</li> <li>synthesis of ideas and information</li> <li>making</li> <li>evaluating</li> </ul> </li> <li>using a variety of communication techniques</li> </ul>	<ul style="list-style-type: none"> <li>recognise steps in the design process               <ul style="list-style-type: none"> <li>choose preferred idea</li> </ul> </li> <li>use techniques to communicate ideas</li> </ul>	<p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>provides examples of completed timber box projects that could be produced.</li> </ul> <p><b>Students</b></p> <ul style="list-style-type: none"> <li>select a project from the range of options provided according to their personal preference, eg trinket box for jewellery, box for tools/sports equipment/games/CDs. This may include:               <ul style="list-style-type: none"> <li>selecting a project after investigating the features of sample boxes</li> <li>indicating a preference for a timber box project</li> <li>determining a design that takes into account the function and purpose of the project.</li> </ul> </li> </ul>	<p>Selection of a project may involve <i>recognising that a process is used to design and make projects</i> and/or <i>using a variety of communication techniques in the context of undertaking projects.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students' selection of an appropriate style of timber box for their needs and abilities.</p>
<b>Focus: Planning steps for producing a timber box</b> <i>Outcome: LS.2.1</i>				
<ul style="list-style-type: none"> <li>a design process that includes:               <ul style="list-style-type: none"> <li>analysis of a problem</li> <li>idea creation</li> <li>synthesis of ideas and information</li> <li>making</li> <li>evaluating</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>recognise the steps in a design process               <ul style="list-style-type: none"> <li>plan steps for making the project</li> </ul> </li> </ul>	<p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>assists students to develop a personalised step-by-step plan for the production process.</li> </ul> <p><b>Students</b></p> <ul style="list-style-type: none"> <li>recognise the steps in the personalised step-by-step plan to complete the project. This may involve:               <ul style="list-style-type: none"> <li>following through each step of the plan recognising the activities at each step.</li> </ul> </li> </ul>	<p>Recognising the planning steps to complete the project may indicate <i>recognising that a process is used to design and make projects.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students' identification of the steps needed to produce the timber design project.</p>

**Focus: Safe use of materials, tools and equipment**

*Outcomes: LS.1.1, LS.1.2, LS.1.3*

Students learn about	Students learn to	Integrated learning experiences, instruction and assessment	Evidence of learning <i>(words in italics refer to Life Skills outcomes)</i>	Feedback
<ul style="list-style-type: none"> <li>• factors that influence safety                             <ul style="list-style-type: none"> <li>– in specialist rooms</li> </ul> </li> <li>• handling and using a variety of equipment including machine tools and computer equipment</li> </ul>	<ul style="list-style-type: none"> <li>• recognise factors that influence safety in specialist areas</li> <li>• follow safety labelling</li> </ul>	<p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>• reviews factors that influence safety in a specialist area</li> <li>• explains the properties of materials, equipment and tools which make them dangerous</li> <li>• explicitly teaches and demonstrates the use of a range of hand tools, eg hammers, screwdrivers, chisels</li> <li>• provides opportunities for supervised practice in the use of materials, tools and equipment.</li> </ul> <p><b>Students</b></p> <ul style="list-style-type: none"> <li>• demonstrate safe practice in specialist rooms. This may include:                             <ul style="list-style-type: none"> <li>– following safety labelling</li> <li>– identifying location of safety protection equipment and first aid kit</li> <li>– recognising potentially dangerous equipment and situations</li> <li>– putting on personal protective equipment, eg mask, goggles</li> </ul> </li> </ul>	<p>Demonstrating safe practice in specialist rooms may indicate <i>recognising safe and unsafe conditions in the context of undertaking a project and/or demonstrating safe practices in the use of materials, tools and equipment.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students' demonstration of safe practice in specialist rooms.</p>

continued

**Focus: Safe use of materials, tools and equipment (cont)**

**Outcomes:** LS.1.1, LS.1.2, LS.1.3

Students learn about	Students learn to	Integrated learning experiences, instruction and assessment	Evidence of learning <i>(words in italics refer to Life Skills outcomes)</i>	Feedback
<ul style="list-style-type: none"> <li>• the application of OHS practices in relation to:                             <ul style="list-style-type: none"> <li>– handling and using a variety of materials</li> <li>– handling and using a variety of hand tools and power tools</li> </ul> </li> <li>• handling and using a variety of equipment including machine tools and computer equipment</li> <li>• caring for hand tools, power tools and machines</li> <li>• factors that influence safety</li> </ul>	<ul style="list-style-type: none"> <li>• recognise properties of materials, equipment and tools that make them dangerous, eg                             <ul style="list-style-type: none"> <li>– flammability</li> <li>– toxicity</li> <li>– sharpness</li> <li>– weight</li> <li>– temperature</li> <li>– moving parts</li> <li>– electrical operation</li> </ul> </li> <li>• carry and transfer materials, tools and equipment safely                             <ul style="list-style-type: none"> <li>– use materials, tools and equipment safely</li> </ul> </li> <li>• undertake regular checks of hand tools, power tools and machines</li> <li>• recognise factors that influence safety in specialist rooms                             <ul style="list-style-type: none"> <li>– storage: tools, equipment, materials, hazardous substances</li> </ul> </li> </ul>	<p><b>Students</b></p> <ul style="list-style-type: none"> <li>• use materials, tools and equipment appropriately and safely under supervision. This may involve responding to teacher instruction, modelling and prompting in:                             <ul style="list-style-type: none"> <li>– recognising the rules for the safe use of materials, tools and equipment, eg safe handling of a hammer, safe passing techniques for chisels, safe carrying techniques for a length of timber, safe use of adhesives, applying paint/varnish in a well-ventilated area</li> <li>– using materials, tools and equipment safely and appropriately under supervision to mark, measure, cut shape, join and finish materials</li> </ul> </li> <li>• care for and store materials, tools and equipment during the production process. This may include:                             <ul style="list-style-type: none"> <li>– returning materials, tools and equipment to their storage space after use</li> <li>– tidying the work area</li> <li>– reporting unsafe equipment and or dangerous situations.</li> </ul> </li> </ul>	<p>Using materials, tools and equipment safely may indicate <i>recognising safe and unsafe conditions in the context of undertaking a project and/or demonstrating safe practices in the use of materials, tools and equipment.</i></p> <p>Caring for and storing materials, tools and equipment during the production process may indicate <i>caring for hand tools, power tools and machines.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students’:</p> <ul style="list-style-type: none"> <li>• demonstration of safe and appropriate use of materials, tools and equipment</li> <li>• demonstration of the safe storage of materials, tools and equipment.</li> </ul>

**Focus: Producing a timber box***Outcomes: LS.1.2, LS.5.1*

Students learn about	Students learn to	Integrated learning experiences, instruction and assessment	Evidence of learning <i>(words in italics refer to Life Skills outcomes)</i>	Feedback
		<b>Teacher</b> <ul style="list-style-type: none"><li>• reviews the personalised step-by-step plan for the production of the timber box, modelling each step as required</li><li>• focuses on the development and application of specific skills related to producing a timber box</li><li>• explicitly teaches each of the skills and techniques and their application in the context of the production of a timber box, while incorporating relevant OHS practices at every point:<ul style="list-style-type: none"><li>– measuring and marking out the project</li><li>– cutting out timber using templates and appropriate hand or power tools and equipment</li><li>– shaping timber using appropriate hand or power tools and equipment</li><li>– joining timber using methods such as adhesives, screws, nails, joints</li><li>– constructing their timber box using techniques such as turning of handles, surface decoration</li><li>– preparing/sanding surface in readiness for applying selected finish using appropriate hand or power tools</li><li>– applying appropriate finishes, eg paint, varnish, oil in a well-ventilated area</li><li>– applying appropriate decorations such as decoupage, stencils</li><li>– fitting hardware such as handles and locks</li></ul></li></ul>		

continued

**Focus: Producing a timber box (cont)****Outcomes:** LS.1.2, LS.5.1

<b>Students learn about</b>	<b>Students learn to</b>	<b>Integrated learning experiences, instruction and assessment</b>	<b>Evidence of learning</b> <i>(words in italics refer to Life Skills outcomes)</i>	<b>Feedback</b>
<ul style="list-style-type: none"><li>• using skills to make a project in a variety of technologies</li><li>• applying the design process</li><li>• the application of OHS practices in relation to:<ul style="list-style-type: none"><li>– handling and using a variety of materials</li><li>– handling and using a variety of hand tools and power tools</li></ul></li></ul>	<ul style="list-style-type: none"><li>• participate in making a project in a variety of technologies</li><li>• follow steps to complete a project</li><li>• recognise properties of materials, equipment and tools that make them dangerous, eg<ul style="list-style-type: none"><li>– flammability</li><li>– toxicity</li><li>– sharpness</li><li>– weight</li><li>– temperature</li><li>– moving parts</li><li>– electrical operation</li></ul></li></ul>	<b>Students</b> <ul style="list-style-type: none"><li>• use skills and techniques to engage in the production process for completing a timber box project according to the personalised step-by-step plan and in accordance with relevant OHS practices.</li></ul>	Using skills and techniques to engage in the production process for completing a timber box may indicate <i>demonstrating safe practices in the use of materials tools and equipment and/or using skills and processes in a variety of contexts and projects.</i>	Teacher demonstration of skills and techniques.  Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students' identification of the steps needed to produce the project.  Teacher guides and reinforces students' skill development in the context of producing the project.

**Focus: Evaluating the timber design project**

*Outcomes: LS.4.1, LS.6.1*

Students learn about	Students learn to	Integrated learning experiences, instruction and assessment	Evidence of learning <i>(words in italics refer to Life Skills outcomes)</i>	Feedback
<ul style="list-style-type: none"> <li>• evaluating a project in terms of                             <ul style="list-style-type: none"> <li>– function</li> <li>– aesthetics</li> <li>– available resources</li> <li>– environmental impact</li> <li>– marketability</li> </ul> </li> <li>• using a variety of communication techniques which may include                             <ul style="list-style-type: none"> <li>– oral presentations</li> <li>– discussions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• evaluate a completed project eg                             <ul style="list-style-type: none"> <li>– does the finished product require modification?</li> <li>– what changes, if any, need to be made?</li> <li>– will it be used?</li> <li>– does the project look well made?</li> <li>– does the project meet the identified need?</li> </ul> </li> <li>• use techniques to communicate ideas, eg                             <ul style="list-style-type: none"> <li>– present a completed practical project to a class or school assembly</li> </ul> </li> </ul>	<p><b>Teacher</b></p> <ul style="list-style-type: none"> <li>• assists students to evaluate their timber box in a project report</li> <li>• facilitates students communicating their experiences of the production process with others.</li> </ul> <p><b>Students</b></p> <ul style="list-style-type: none"> <li>• evaluate their timber box in terms of function and aesthetics. This may include:                             <ul style="list-style-type: none"> <li>– responding to questioning, eg ‘Could you demonstrate how the timber box will be used?’, ‘What do you like best about the way it looks?’, ‘What changes, if any, need to be made?’</li> <li>– preparing a project report in which information about the materials, tools and processes used in the project is outlined. This could be done through photographs, video, drawings and/or text to demonstrate the step-by-step plan used to produce the project. The project report could also include information about what changes, if any, need to be made</li> </ul> </li> <li>• share their completed project with others. This may include:                             <ul style="list-style-type: none"> <li>– developing a multimedia presentation of the steps undertaken to complete the project</li> <li>– displaying the project in a prominent place in the school</li> <li>– presenting their completed project to the class or at a school assembly.</li> </ul> </li> </ul>	<p>Evaluation of the timber box may indicate <i>evaluating the success of projects and/or using a variety of communication techniques in the context of undertaking project.</i></p> <p>Sharing their completed project with others may indicate <i>using a variety of communication techniques in the context of undertaking project.</i></p>	<p>Oral, visual and/or tangible feedback and prompting by the teacher to guide and affirm students’:</p> <ul style="list-style-type: none"> <li>• evaluation of their timber box in terms of aesthetics and function</li> <li>• sharing of their completed project with others in an appropriate format.</li> </ul>