

Introduction			
Employing Sector	NSW Department of Education	Educational Sector	Secondary
Contest Location	St Charbel's College, Punchbowl, NSW		
Size of School/Class	<ul style="list-style-type: none"> total students: 1167 class size: 4 females, 11 males 		
Other School Demographics	<ul style="list-style-type: none"> non-government school male students = 574 female students = 593 0% Indigenous students 82% language background other than English school ICSEA value = 1046 		
Year Level	Year 9	Learning Area	Stage 5
Unit of Work Area	Timber 1	Time of Year	Beginning of term 1
Content Descriptor	<p>“Students will learn about the importance of recognising and complying with WHS signage, how to sketch and use ICT in design, finishing, joining processes, material selection, shaping process, how trees grow and their structure, difference between softwood and hardwood and the characteristics of solid timber” (<i>Industrial Technology Years 7–10 Syllabus (2019)</i>)</p>		
Achievements standards	<p>“Students:</p> <ul style="list-style-type: none"> recognise and comply with WHS signage, for example: ★ <ul style="list-style-type: none"> identify the colours and shapes associated with types of WHS signage read and interpret plans and/or materials lists to prepare materials for the completion of projects, for example: <ul style="list-style-type: none"> workshop drawings of joints produce freehand sketches of project components and/or projects develop design and production folios using appropriate ICT, for example: 🖨️ <ul style="list-style-type: none"> CAD spreadsheets develop and produce practical projects allowing for the characteristics and properties of materials, systems, components, tools and equipment available, for example: (ACTDEK046) 🖨️ <ul style="list-style-type: none"> finishing joining processes material selection shaping processes calculate quantities and costs of materials and components used in the completion of projects, for example: 🖨️ 📊 <ul style="list-style-type: none"> use spreadsheets to calculate material quantities and monitor project costs investigate the structure of trees and how they grow 🖨️ describe the differences between hardwoods and softwoods and justify their selection in a range of projects ⚙️ investigate the properties and working characteristics of solid timber, for example: 🖨️ 		

Introduction		
	<ul style="list-style-type: none"> – colour – defects, eg gum veins in Tasmanian oak – density – strength”(Industrial Technology Years 7–10 Syllabus (2019)) 	
	Focus Students Characteristics	Strengths/Needs
Focus student 1:	<ul style="list-style-type: none"> • Male • 15 years old • Sight disability 	Has difficulty seeing demonstration and the board as he sits in the back
Focus student 2:	<ul style="list-style-type: none"> • Female • 15 years old • Accelerated learner 	Able to learn content fast and independently Distracts other students when finished early

Learning Sequence/Unit of Work (4 weeks)

Jewelry Box Portfolio Planning - Unit of Work - Stage 5 (Year

9)

Course: Industrial Technologies	Teaching Period: Term 1 Week 1 to Term 1 Week 4
Subject Area: Timber 1	Unit Length: 4 weeks
Unit Overview: Students will learn about WHS signage, sketching and understanding workshop drawings, materials, process and how different timbers are chosen for projects based on their characteristics and properties. In this unit students will need to complete all the required Ongoing and make a portfolio on the process and planning for making the jewelry box. Students will first show their planning through a specific design they created and then after this first unit is done they will start producing their jewelry box in week 5.	
Rationale: Students are able to meet and demonstrate the learning outcomes through designs/research stages of the portfolio allowing them to start working on their jewelry box in week 5. Students will learn skills which can be used in the real world.	
Learning Outcomes: “›identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies IND5-1 › applies design principles in the modification, development and production of projects IND5-2 › identifies, selects and uses a range of hand and machine tools, equipment and processes to produce quality practical projects IND5-3 › selects, justifies and uses a range of relevant and associated materials for specific applications IND5-4 › selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects IND5-5 › applies and transfers skills, processes and materials to a variety of contexts and projects IND5-7 › evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction IND5-8” (<i>Industrial Technology Years 7–10 Syllabus (2019)</i>)	
Prior Learning Experiences: Tech Mandatory 7 to 8 and out of school experiences	
Student Learning Strengths: A student is able to learn content fast and independently	Student Learning Needs: A student has difficulty seeing demonstration and the board Student sit towards the back Students distracts their friends when done early
Assessment Tasks: Design and Research stages of jewelry box portfolio	Resources: Slides, printed PMI charts, sketching examples, jewelry box examples, portfolio examples, padlet, kahoot and Ongoing, online CAD activity docs, fusion, (CAD) Activities, timber finishes example, veneers,finishes video, booklet and excel.
Diverse and Inclusive Teaching and Learning Requirements: The unit is structured in a way which allows students to have access to resources as well as being taught in different manners. Therefore meeting the diverse and inclusive teaching and learning requirements	Work Health and Safety Considerations: Finishing Ongoing on time




Weekly Content Organisation

Week	Learning Outcomes	Topic Focus & Brief Description
1	IND5-1, IND5-2 ,IND5-5,IND5-7 ,IND5-8	WHS signage, starting/finishing Ongoing and start learning about Sketching
2	IND5-2 ,IND5-5,IND5-7 ,IND5-8	Sketching and CAD activities



3	IND5-1, IND5-2, IND5-3, IND5-4, IND5-7, IND5-8	Learning about materials, finishing and joining process
4	IND5-2, IND5-4, IND5-7, IND5-8	Learns about trees and the different types of woods based on their characteristic and properties


Weekly Breakdown




1	WHS signage and starting/finishing Onguard and start learning about Sketching			
	Students Learn About: IND5-1, IND5-5	Students Learn To: recognise and comply with WHS signage, for example: – identify the colours and shapes associated with types of WHS signage ★	Integrated Teaching and Learning Activities: Class Discussion on what the students think Timber 1 revolves around. Introduction into the unit: A slideshow explaining what to expect in the first term while they will be making their jewelry box. Including example portfolios and jewelry boxes. Let students then login into their Onguard accounts and start working on their Onguard for the rest of the lesson. Students may experience login issues.	Assessment: Informal diagnostic on what the students already know about the unit
	IND5-1, IND5-5	Recognise and comply with WHS signage, for example: – identify the colours and shapes associated with types of WHS signage ★	Short class discussion if anyone knows what colours and shapes mean on WHS signage. List the different types of signs for WHS and put students into small groups to research a different type of sign. Students must create a digital poster on their type of signs and must also evaluate and analyse the sign. Then students will present the poster to the class, towards the end of the lesson. Lastly a students will play a kahoot on WHS signage	Informal diagnostic on what students may already know about WHS signage Informal informative to see if each student understands the different WHS signage
	IND5-2, IND5-5, IND5-7, IND5-8	produce freehand sketches of project components and/or projects ★	A padlet on why sketching is used/important in making a timber project. Discuss the answer with class. Show examples and then let the students create a lot of freehand rough sketches of possible designs. Then let the students select at least 3 of the rough sketches and make a PMI chart on them	Informal diagnostic on what students may already know about sketching
	Differentiation: (Focus Students and Class Group)	If students finish early, let them work on their Onguard during class and/or make more sketches. The slides will be on the google classroom to help students with eyesight disabilities by letting them have it open on their computer screen. If a student starts disrupting their friends move the student to other table.		

2	Sketching and CAD activities			
	Students Learn About: IND5-2,IND5-5 ,IND5-7,IND5-8	Students Learn To: produce freehand sketches of project components and/or projects develop design and production folios using appropriate ICT, for example:  <ul style="list-style-type: none">– CAD– spreadsheets	Integrated Teaching and Learning Activities: Introduction to CAD. Get the students to install CAD on their school laptops. While they wait for the installation. Get the students to make their final sketches with the PMI responses/sketches from the last lesson. Final sketch also need to include a PMI from creator and peers. CAD Activity - Students open up CAD and follow your instruction on how to use some of the basic features of fusion Let the students then try and create the jewelry box on CAD	Assessment:
	IND5-2,IND5-5 ,IND5-7,IND5-8	develop design and production folios using appropriate ICT, for example:  <ul style="list-style-type: none">– CAD– spreadsheets	Students create a phone safe box in class following the instruction of the teacher in CAD. There will be word docs with instructions and images on how to make it as well as a video for students that want to work independently. Inform the students that there are a few online CAD activities which need to be done at home which are due by the end of week 3. These CAD activities have a video and a word doc each with instructions on how to complete them	Informal formative to assess if students are able to use CAD
	IND5-2,IND5-5 ,IND5-7,IND5-8	develop design and production folios using appropriate ICT, for example:  <ul style="list-style-type: none">– CAD– spreadsheets	Let the student work on any unfinished Onguards as well as the CAD activities that are due in week 3 Teacher will be walking around the classroom making sure students are on task as well as helping any students that may be struggling or falling behind	
	Differentiation: (Focus Students and Class Group)	If student finish early let them work on the CAD activities or any unfinished Onguard The slides will be in the google classroom to help students with eyesight disabilities by allowing them have it open on their computer screen Have students which work well in CAD sit next to students which struggle in CAD When a student finishes early they can assist other students which are having difficulty If a student starts disrupting their friends move the student to other table		

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3	Learning about materials, finishing and joining process			
	Students Learn About: IND5-1,IND5-2,IND5-3,IND5-7,IND5-8	Students Learn To: develop and produce practical projects allowing for the characteristics and properties of materials, systems, components, tools and equipment available, for example: (ACTDEK046)  <ul style="list-style-type: none"> – finishing – joining processes – material selection – shaping processes 	Integrated Teaching and Learning Activities: Class discussion on what is finishing(finishes on timber) to see the level of understanding/skill in the classroom A slideshow about the basics of finishing projects including a video showing how it's done, different methods of applying finish, effect on timber when applied, explanation why finishing is important, what is sanding and why sanding is done. Students will be able to look at a piece of timber which has had differently applied finish to see and feel the difference. A classroom discussion then start, to see if the students were able to identify the differences. Next the students will be split into groups and will make a digital poster about a type of finish with each group having a different one. At the end of the lesson each group will present their findings to the class.	Assessment: Informal diagnostic on what students may already know about finishing Informal formative to assess if students are able to tell the difference between different types of finishes
	IND5-1,IND5-2,IND5-3,IND5-7,IND5-8	develop and produce practical projects allowing for the characteristics and properties of materials, systems, components, tools and equipment available, for example: (ACTDEK046)  <ul style="list-style-type: none"> – finishing – joining processes – material selection – shaping processes 	Class discussion on what are joining process to see the level of understanding/skill in the classroom Slideshow on why joining processes are important, why they are preferred over using nails, and the different types of join processes that will be used in the jewelry box. Students will pair up and be given a joint which they will research and make a digital poster. The poster should include an image, how the joint is made, how strong the joints are, other joints which could be used instead and then evaluating the other joints to the original one. Student will present their findings at the end of the lesson	Informal diagnostic on what students may already know about the joining process

	IND5-1,IND5-2,IND5-3,IND5-7,IND5-8	develop and produce practical projects allowing for the characteristics and properties of materials, systems, components, tools and equipment available, for example: (ACTDEK046)  – finishing – joining processes – material selection – shaping processes	<p>A quick class discussion on material selection for the jewelry box to see the level of understanding/skill in the classroom</p> <p>A slideshow on what materials are going to be used for the jewelry box, the different types of wood that are available in the school and their characteristics/properties, the different types of veneers that are available, and a youtube video on how veneer is made.</p> <p>Students will now be able pick and choose the different types of veneer they want to use for the jewelry box. Students will have to create 3 different combinations and evaluate if the combinations work well with each other or not and state why. Lastly student will select their favourite combination for the veneering stage of the jewelry box</p> <p>Lastly students will participate in a kahoot which is based around the content in week 3</p>	<p>Informal diagnostic on what students may already know about material selection</p> <p>Informal Summative as to see if the knowledge was retained from the week</p>
	Differentiation: (Focus Students and Class Group)	<p>If student finish early let them work on the CAD activities or any unfinished Onguard</p> <p>The slides will be on google classroom to help students with eyesight disabilities by allowing them to have it open on their computer screen</p> <p>For joining process there can be in real life models of the different joints for student to touch and look at</p> <p>If a student starts disrupting their friends move the student to other table</p>		

4	Learns about a trees and the different types of woods based on their characteristic and properties			
	Students Learn About: IND5-2,IND5-4,IND5-7,IND5-8	<p>Students Learn To:calculate quantities and costs of materials and components used in the completion of projects, for example: – use spreadsheets to calculate material quantities and monitor project costs  </p> <p>recognise and comply with WHS signage, for example: – identify the colours and shapes associated with types of WHS signage </p>	<p>Integrated Teaching and Learning Activities:</p> <p>Do a kahoot to see if students still remember WHS signage. If students perform poorly, go through the different types of signs again.</p> <p>Slideshow stating why the following are done in the portfolio and how to do them correctly: Gantt chart, Material List and Cost of materials.</p> <p>A Booklet on questions which relate to Gantt charts, Materials and Cost of materials.</p> <p>Then let the student work on their Gantt chart, Material List and Cost of materials for the portfolio until the end of the lesson. The students will use excel for this section. Anything which is not finished in class will need to be done at home</p>	<p>Assessment:</p> <p>Informal Summative to see if the knowledge was retained from week 1</p> <p>Informal formative to assess if students are able to read and understand the charts</p>

IND5-2,IND5-4,IND5-7,IND5-8	<p>investigate the structure of trees and how they grow 🖨</p> <p>describe the differences between hardwoods and softwoods and justify their selection in a range of projects ⚙</p>	<p>Students will group up and create a poster by hand on the structure of a tree and how it grows. They will also need to analyse the difference between hardwoods and softwoods while stating where different types of woods are used in different projects.</p> <p>Have exit tickets for students to leave the classroom by asking them questions</p>		Informal formative to assess if students are able to investigate/describe the difference between soft and hard wood, tree structure and how trees grow
IND5-2,IND5-4,IND5-7,IND5-8	<p>investigate the properties and working characteristics of solid timber, for example: 🖨</p> <ul style="list-style-type: none"> – colour – defects, eg gum veins in Tasmanian oak – density – strength 	<p>Students will investigate properties and working characteristics of 4 different types of timber by researching the timber's colour, defects, density, strength, workability and IRL uses of the timber. Then students will evaluate the difference between the timbers and select one which they will use for the jewelry box with a justification for the selection.</p> <p>The rest of the lesson students will work on finishing their portfolios.</p> <p>Inform the student that portfolios are due on sunday.</p>		Summative assessment students on the research and design phase of the portfolio
Differentiation: (Focus Students and Class Group)	<p>The slides will be on the google classroom to help students with eyesight disabilities by allowing them to have it open on their computer screen</p> <p>If students finish early they can start working on their portfolios</p> <p>If a student starts disrupting their friends move the student to other table</p>			

Weekly Resource List

Week	Workbook/Templates and Teaching Resources	Software	Online Media (Video)	Text	Excursion
1	Slides, printed PMI charts, sketching examples, jewelry box examples and portfolio examples	Padlet, Kahoot and Onguard			
2	Slides, printed PMI charts and online CAD activity docs	Fusion and Onguard	(CAD) Activites		
3	Slides, timber finish examples, veneers	kahoot	Finishes video		
4	Slides	Kahoot, booklet and excel			

Lesson Plans

Lesson 1

LESSON PLAN FORMAT

Class/Grade/Stage: Year 9	Date: 28/02/2023	Time: Start: 10 Finish: 10.50
Key Learning Area(s): Timber 1	Lesson Topic: Introduction into timber 1 and Onguard	
NESA Australian Professional Standards for Teachers 1.5, 1.6, 2.1, 2.2, 2.3, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3,4.5, 4.6, 6.1, 6.2,		
Recent Prior Experience: Tech Mandatory 7 to 8 and out of school experiences		
Syllabus/Syllabi Outcome(s): ›identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies IND5-1 › selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects IND5-5	Indicators of Learning for this lesson-learning intentions and success criteria: Are able to create an Onguard account and start working through the tests Able to understand what the unit outcomes are Able to understand what is going to happen in the unit	Assessment: Informal diagnostic on what the students already may know about the unit
Any safety issues to be considered (APST 4.4.1): Students may be leaning in chairs	Resources: Slides and examples of portfolios and jewelry boxes	

LESSON SEQUENCE

Lesson Content/Indicators of Learning/Teaching Strategies (<i>What is Taught</i>):	Timing (<i>mins</i>)	Learning Experiences: (<i>How it is Taught</i>)	Resources and Organisation:
INTRODUCTION			
See how much the the students know about timber 1	5	Class Discussion on what the students think Timber 1 revolves around.	Slides
Introduction into timber1 -what is timber 1 -What is first term project -the outcomes and syllabus points you learn in the first term -example portfolios and jewelry boxes - what is the first assignment task -any questions so far? Onguard setup and tests	40	Introduction into the unit: A slideshow explaining what's going to be happening in the first term while they will be making their jewelry box. Including example portfolios and jewelry boxes. Let students then login into their Onguard accounts and start working on their Onguard for the rest of the lesson. Students may experience login issues. Teacher tell the students that Onguard needs to be finished before the end of week 4 as to allow students access to the workshop in week 5 Focus Student 1:Student can access a copy of the slides through google classroom Focus Student 2: Student may do more Onguard tests than others	Slides, examples portfolios and jewelry boxes
What WHS has been learned	5	Class discussion in anything new they learnt about machines or equipments, tools and chemicals	

Lesson 2

LESSON PLAN FORMAT

Class/Grade/Stage: Year 9	Date: 29/02/2023	Time: Start: 10 Finish: 10.50
Key Learning Area(s): Timber 1	Lesson Topic: Signages	
NESA Australian Professional Standards for Teachers: 1.5, 1.6, 2.1, 2.2, 2.3, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3,4.5, 4.6, 6.1, 6.2,		
Recent Prior Experience: Tech Mandatory 7 to 8 and out of school experiences		
Syllabus/Syllabi Outcome(s): ›identifies, assesses, applies and manages the risks and WHS issues associated with the use of a range of tools, equipment, materials, processes and technologies IND5-1 › selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects IND5-5	Indicators of Learning for this lesson-learning intentions and success criteria: Are able to understand what the colors and shapes mean on WHS signage Able to create detailed evaluative digital WHS signage poster	Assessment: Informal diagnostic on what students may already know about WHS signage Informal formative assessment to see if students understand the the different WHS signage
Any safety issues to be considered (APST 4.4.1): Students may be leaning in chairs	Resources: Slides and kahoot	

LESSON SEQUENCE

Lesson Content/Indicators of Learning/Teaching Strategies (<i>What is Taught</i>):	Timing (<i>mins</i>)	Learning Experiences: (<i>How it is Taught</i>)	Resources and Organisation:
INTRODUCTION			
See the understanding of WHS signage before the lesson	5	Short class discussion if anyone knows what the colours and shapes mean on WHS signage.	Slides
DEVELOPMENT			
<p>Types of signage WHS</p> <ul style="list-style-type: none"> -Prohibitory signs -Warning signs -Mandatory signs -Safe condition signs -Fire equipment signs <p>Students learn the importance of WHS signage</p> <p>Students Evaluated the effectiveness of the signs</p>	35	<p>List the different types of signs for WHS and put students into groups to each research a different type of sign. Students must create a digital poster on the type of sign they have been assigned. Students must find 3 signs in that sign type and evaluate the type sign such as the effectiveness, design and what the sign is trying to say. Students can also try and create the new update/changed look of the sign/s. Then students will present the poster towards the end of the lesson to the rest of class.</p> <p>Focus Student 2: work on Onguard when finished and/or do 4 signs altogether</p> <p>EXT activity(work on Onguard)</p>	<p>Slides</p> <p>Have the class split into groups of 3 for the activity</p>
CLOSURE			
See if the WHS signage content was understood	10	Then a kahoot would be played on WHS signage	Kahoot Slides

Lesson 3

LESSON PLAN FORMAT

Class/Grade/Stage: Year 9	Date: 30/02/2023	Time: Start: 10 Finish: 10.50
Key Learning Area(s): Timber 1	Lesson Topic: Sketching	
NESA Australian Professional Standards for Teachers: 1.5, 1.6, 2.1, 2.2, 2.3, 2.6, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3,4.5, 4.6, 6.1, 6.2,		
Recent Prior Experience: Tech Mandatory 7 to 8 and out of school experiences		
Syllabus/Syllabi Outcome(s): › applies design principles in the modification, development and production of projects IND5-2 › selects, interprets and applies a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects IND5-5 › applies and transfers skills, processes and materials to a variety of contexts and projects IND5-7 › evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction IND5-8	Indicators of Learning for this lesson-learning intentions and success criteria: Are able to make sketches Are able to Make PMI's on their and peer's sketches	Assessment: Informal diagnostic on what students may already know about sketching
Any safety issues to be considered (APST 4.4.1): Students may be leaning in chairs	Resources: Slides, sketch examples, padlet and printed out PMI charts.	

LESSON SEQUENCE

Lesson Content/Indicators of Learning/Teaching Strategies (What is Taught):	Timing (mins)	Learning Experiences: (How it is Taught)	Resources and Organisation:
INTRODUCTION			
Understanding the level of sketching knowledge in the class	5	<p>A padlet on why sketching is done/important in making a timber project. Discuss the answer with class.</p> <p>Focus Student 1: Student can access a copy of the padlet through google classroom</p>	Slides, padlet
DEVELOPMENT			
<p>The expectation of sketches and PMI</p> <p>Design/sketching jewelry box</p> <p>Evaluation of sketches</p>	35	<p>Show examples and then let the students make a lot of freehand rough sketches of possible designs.</p> <p>Focus Student 1: Student can access a copy of the slides through google classroom</p> <p>Then the students make at least 6 rough sketches and make at least 3 PMI on those sketches.</p> <p>Focus Student 2: Can do the EXT activities (EXT activity) work on Onguard, do more rough sketches and/or do more PMIs</p>	Slides, examples of sketches and printed out PMI charts
CLOSURE			
Evaluate your others sketches Get your sketches evaluated	10	<p>Give sketches to peers and let their peers to make PMI charts on their sketches for evaluation so the student can have feedback from another students</p> <p>(Modification Activity) Have students upload an image online and do a class evaluation on each sketch</p>	printed out PMI charts