**Industrial Technology - Wood**

***Edgeware School***

**Engage**

**Achieve**

**Develop**

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|   | **Teaching and Learning Program** |
| Title/Type of Unit: **Woodwork and Maintenance Elective**Program Risk Level: **Medium** | Duration: **10 weeks**By Greg |
| **Syllabus Outcomes****Stage 5**  | *A student:***5.1.1** identifies, assesses and manages the risks and OHS issues associated with the use of a range of materials, hand tools, machine tools and processes**5.1.2** applies OHS practices to hand tools, machine tools, equipment and processes**5.2.1** applies design principles in the modification, development and production of projects**5.2.2** identifies, selects and competently uses a range of hand and machine tools, equipment and processes to produce quality practical projects**5.3.1** justifies the use of a range of relevant and associated materials**5.3.2** selects and uses appropriate materials for specific applications**5.4.1** selects, applies and interprets a range of suitable communication techniques in the development, planning, production and presentation of ideas and projects**5.4.2** works cooperatively with others in the achievement of common goals**5.5.1** applies and transfers acquired knowledge and skills to subsequent learning experiences in a variety of contexts and projects**5.6.1** evaluates products in terms of functional, economic, aesthetic and environmental qualities and quality of construction**5.7.1** describes, analyses and uses a range of current, new and emerging technologies and their various applications**5.7.2** describes, analyses and evaluates the impact of technology on society, the environment and cultural issues locally and globally |
| **Connectedness****Why does this learning matter?** | **Students learn to:*** Follow and design plans to build a project
* Produce a procedure text
* Operate woodworking tools
* Demonstrate safe working practices
* Follow verbal and written directions
* Construct a wooden project
* Evaluate elements of the final product of their project
* Produce a resume
* Stay on task to complete a project
 | **Students learn about:*** Measurement and angles
* Completing tasks
* Materials and tools
* Work Health and Safety practices
* Research using ICT resources
* Designs and designers that have improved or shaped society and/or environments
* Careers related to the construction industry
* Seeking employment and reading job advertisements
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| **Background and Key Ideas** | An introduction to living skills on simple home maintenance and wood working. There is a theory and practical component to this unit. Key ideas are* To engage students in TAS and provide simple living skills
* Increase comprehension, listening and visual skills
* Develop planning, organising, recording and demonstrating skills
* Cross curricula topics including numeracy, literacy, work education
* Project based learning
* Practice attitudes of accomplishment and valuation of presentation of the final product
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| **Literacy Continuum** | Reading Texts | Comprehension | Vocabulary Knowledge | Aspects of Writing | Aspects of Speaking | Phonics | Phonemic Awareness | Concepts About Print |
| **Clusters**: 13-16**Activities linked to program to increase learning:**Reading and comprehending procedure text typeProducing a procedure text |
| **Numeracy Continuum** | Counting Sequences | Counting as Problem Solving | Pattern and Number Structure | Place Value | Multiplication and Division | Fraction Units | Length, Area and Volume |
| Elements: (individual or range)Activities linked to program to increase learning:Reading measurements/number lineMeasuring lengthCounting materials and steps in a procedure |
| **Intellectual Quality** | **Quality Learning Environment** | **Significance** |
| * IQ1 Deep Knowledge
* IQ2 Deep Understanding
* IQ3 Problematic Knowledge
* IQ4 Higher-order Thinking
* IQ5 Metalanguage
* IQ6 Substantive Communication
 | * QLE1 Explicit Quality Criteria
* QE2 Engagement
* QE3 High Expectations
* QE4 Social Support
* QE5 Students’ Self-regulation
* QE6 Student Direction
 | * S1 Background Knowledge
* S2 Cultural Knowledge
* S3 Knowledge Integration
* S4 Inclusively
* S5 Connectedness
* S6 Narrative
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| **Teaching and Learning Lesson Overview** |
| **The Elements of Learning & Achievement**E:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 1. Safety lesson
2. View media on Youtube; **mrmshow shop safety**:

 <https://www.youtube.com/watch?v=qrOi-kJUyV0>  Students answer “Why do we have rules in the wood work room?” “What is the purpose of knowing how to behave in the wood work room?” Discuss safety concerns and possible consequences of unsafe behaviour.1. Complete Safety work booklet. Students are shown the rules of the woodwork room. Students sign the agreement of acceptable behaviour and rules of the woodwork room.
2. Students perform a risk assessment of the woodwork room and fill in a risk assessment report form. Students perform a hazard inspection of the woodwork room and fill in a hazard report form. Discuss with students boundaries of acceptable behaviour in the wood work room. Have students cooperatively (including the teacher) establish standards of behaving in the wood work room.
 | **Aboriginal 8 Ways of Learning***The following ways of learning are incorporated throughout the program through pedagogical practices*2_maps.jpgLearning Maps4_symbol.jpgSymbols & Images7_deconstruct.jpgDeconstruct/ ReconstructStory SharingNon-Verbal8_community[1]Community Links |

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| **Teaching and Learning Lesson Overview** |
| **The Elements of Learning & Achievement**F:\Mock ups\Square elements\Numeracy.jpgE:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 2) Maintenance unit *Practical Unit*1. Students are exposed to simple home maintenance. Students walk around a classroom identifying what simple maintenance may need to be done in a home.

 1. Prepare tools, materials and work space for students to practice home maintenance. Bayonet and screw in light fittings can be screwed into a wooden board (not powered). Taps can be bought to be screwed into walls or a wooden board (not attached to running water). Painting, plastering, tiling, nailing, screwing, door hinges and door knobs can all be completed on large wooden plywood boards. Small engine can be any broken whipper snipper, blower, chainsaw, etc. (You could also include changing a car tyre, oil, windscreen wipers, indicator lights)

 1. Through teacher demonstration, students perform simple maintenance tasks including;
* Changing a light bulb (bayonet and screw in)
* Change a tap washer
* Measure using a tape measure
* Draw a line on timber using a set square
* Use a level
* Hammer a nail
* Screw in a screw
* Use a drill driver
* Paint preparation, masking taping
* Apply different staining and painting finishes
* Attach a hinge to a door
* Attach a door knob
* Tiling
* Apply filler/plaster to a small hole in a wall or piece of wood board
* Disassemble a small engine (whipper snipper) clean it, degrease it and reassemble it
* Simple bicycle maintenance
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| **The Elements of Learning & Achievement**F:\Mock ups\Square elements\Numeracy.jpgE:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 3) Woodwork Booklet 1. Students complete a variety of reading, writing, comprehending, drawing, puzzle and assessment activities.
2. Students design the plan for their practical project including a drawing of their finished project and a written procedure on constructing their project.
3. An assessment task is included in the back of the woodwork booklet.
* A review quiz of the material from the booklet
* Assessment criteria based on the finished product of the students practical project
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| **Teaching and Learning Lesson Overview** |
| **The Elements of Learning & Achievement**F:\Mock ups\Square elements\Numeracy.jpgE:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 1. Practical project *Practical Unit*
2. Students build a practical wood work project. Projects include a wooden box with a hinged lid, spice rack, bed side table or (student’s own idea)

Students to be guided on choosing a design project, making plans, use of tools and materials, construction methods and evaluating progress. Attention should be directed to attitude to problem solving, patience and presentation of finished product.1. Students design and construct their project
* Draw plans of the project including measurements
* List materials needed to build the project
* List tools needed to assemble the project
* Write out the plan (procedure text) in a step by step format on how to build the project
* Construct the project following the plans.
* Students are aware of the assessment criteria and will evaluate their work according to the criteria.

 Units of work on project plans, drawings, list of tools and materials and written plans (procedure text) are included in the woodwork booklet. The assessment task with marking criteria is also included at the back of the woodwork booklet. . | **Aboriginal 8 Ways of Learning***The following ways of learning are incorporated throughout the program through pedagogical practices*2_maps.jpgLearning Maps7_deconstruct.jpgDeconstruct/ Reconstruct6_non-linear.jpgNon-LinearNon-Verbal8_community[1]Community Links |

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| **The Elements of Learning & Achievement**F:\Mock ups\Square elements\Numeracy.jpgE:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 1. Media (Film) Unit

Students view documentaries and construction/maintenance related visual media programs. 1. *Film Work Sheet:*

Students complete a work sheet whilst viewing the program. Discussion is based on construction themes, significance of project/materials or method of construction and careers related to that programViewing Media1. *How to programs:*

Youtube has many how to build/maintain programs. Bunnings in particular has many easy to follow programs. Episodes of Better Homes and Gardens also have segments on construction projects as well as other renovation shows.1. *Fabrication and maintenance:*

There are many programs on DVD’s including Pimp my Ride, Mythbusters, American Chopper and Rick’s Restorations which are mostly based on fabrication and maintenance projects.1. *Large scale Construction:*

There are DVD’s and the Discovery channel on the internet has programs on large scale projects including Extreme Engineering, Build it bigger, Seconds from disaster.1. Careers:

Sydney Tafe has a Youtube channel with short films on most building and construction careers. Typing any job into Youtube yields results for most careers. Mega factories is a program that exposes the viewer to several careers within an industry (car manufacture, etc) | **Aboriginal 8 Ways of Learning***The following ways of learning are incorporated throughout the program through pedagogical practices*2_maps.jpgLearning Maps4_symbol.jpgSymbols & Images7_deconstruct.jpgDeconstruct/ Reconstruct6_non-linear.jpgNon-LinearLand LinksStory SharingNon-Verbal8_community[1]Community Links |

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| **Teaching and Learning Lesson Overview** |
| **The Elements of Learning & Achievement**F:\Mock ups\Square elements\Numeracy.jpgE:\Final V1\Final sq NO border\Sq Technology no bdr.jpg | 1. Project based learning
2. Practical project:

Students construct practical projects as per the Maintenance unit (2) and the practical project (4). In part (4) students design their own small project. (See parts 2 and 4 in the Teaching and Learning Lesson Overview)1. Research a designer:

Students research a designer and one of their designs. Students analyse the purpose and function of design on a product. Students provide ideas for improving the design. Students come up with their own design on the product and advertise it using print or social media.1. Careers project:

Students investigate the industries of construction, maintenance and fabrication and identify related careers in those industries. They research a career to evaluate the tasks, training and career prospects of that particular career. Students choose a career to seek employment. They search and record job advertisements on that career. They then produce a resume to apply for a position in their own chosen career. | **Aboriginal 8 Ways of Learning***The following ways of learning are incorporated throughout the program through pedagogical practices*2_maps.jpgLearning Maps4_symbol.jpgSymbols & Images7_deconstruct.jpgDeconstruct/ Reconstruct6_non-linear.jpgNon-LinearLand LinksStory Sharing8_community[1]Community Links |

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| **Special Needs Adjustments** | **School to Work** |
| Closer supervision and repeated demonstration of practical and theoretical components.Most work has been adjusted. Further adjustment of work can be made as needed.SLSO support. | Career project – Investigating careers, viewing film media from Tafe on careers in construction/maintenance industry, seeking job advertisements, producing a resume.Practical skills and practice in trade industries |
| **Assessments** |
| End of Woodwork booklet review quizFinished project meets design criteria and procedures. Criteria set out at the end of the Woodwork booklet.Research a career in the Construction industry. Produce a Resume.Research a design/designer and how they improved/shaped societyPractice Aptitude Quiz in Building and Construction by GTA.(Not an assessment of achievement) |
| **Roles and Responsibilities** |
| Teacher | SLSO | Student |
| Demonstrate and provide instruction on tasksAssist and supervise studentsPrepare for each lesson | Assist the studentsAssist the teacherSupervise students | Participate appropriately in lessonsUse equipment safelyComplete tasksFollow staff directions/rulesPrepare and clean the woodwork room |
| **Risk Assessment**  |
| **Resources** | **Safety Strategies** | **Identified Hazards** | **Control Strategies** |
| Woodwork Work bookletWork sheetsHand toolsPower toolsMaterials (nails, screws, timber, paints, etc) | Complete Risk assessment formSafety lesson and agreement form read and signedDemonstration of safe usage of equipmentAdult supervision at all timesSafe and lockable storage of tools | Sharps (tools)Heavy toolsPower toolsPossible behaviour issues | Safe and lockable storage of tools Teacher and SLSO supervisionSmall class sizeHigh risk students may not be able to participate |

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| **Teacher Evaluation****Comments / Variations** |
| Guiding QuestionsWhat worked well?What needed to be changed?What do I think the students gained from this lesson?How well did this unit match the Elements of Learning and Achievement?What did I learn?How will I use this experience to extend my practice in the future?  |
| **Date Commenced**:  | **Date Finished**:  |
| **Teachers Signature**: | **Assistant Principals Signature**: |