Unit 21: Maintain and Understand Equipment Used for Timber Conversion and Utilisation

Unit code: A/601/0376

QCF Level 3: BTEC National

Credit value: 10

Guided learning hours: 60

Aim and purpose

This unit aims to provide learners with an understanding of timber conversion and utilisation and how these can be put into practice. This unit is primarily aimed at learners within a centre-based setting looking to progress into the sector or to further education and training.

Unit introduction

The conversion and processing of round timber into added value market products is an increasingly important role within the treework industries, both as a core business and a business diversification activity.

This unit provides the underpinning knowledge and practical skills required to convert timber and recognise the range of market opportunities that exist for timber products. It will enable learners to develop and adopt safe working practices, as well as a confident and adaptable approach in preparation for future employment. Learners will be encouraged to focus on the development of knowledge and skills which will be of local or regional significance.

Throughout the unit learners will be made aware of safe working practices, environmental and sustainability considerations. Issues of sustainability and the potential negative environmental impact of timber conversion are becoming increasingly important to the treework industries and their customers. Understanding sound sustainable timber conversion and utilisation principles and techniques, which have a minimal environmental effect, is therefore essential for anyone considering entering the treework industries.

Learning outcomes

On completion of this unit a learner should:

1 Understand conversion and processing equipment

2 Be able to maintain timber conversion and processing equipment

3 Be able to operate timber conversion and processing equipment and produce marketable products

4 Understand timber utilisation and the preservation process.

Unit content

1 Understand conversion and processing equipment

Equipment range: mounted, self-propelled and pedestrian operated eg peeler/pointing machine, mobile or static sawmill, circular sawbench, firewood processor, chainsaw mill, debarking machine, brushwood chipper, log splitter, charcoal kiln

Equipment selection: suitability; rate of work; operator training; relevant legislation; maintenance and servicing; financial implications eg cost, insurance, depreciation; environmental considerations

2 Be able to maintain timber conversion and processing equipment

Maintenance operations: equipment types eg peeler/pointing machine, mobile or static sawmill, circular sawbench, firewood processor, chainsaw mill, debarking machine, brushwood chipper, log splitter, charcoal kiln; routine maintenance as per manufacturers' instructions (daily, weekly, monthly maintenance); guarding and safety features; appropriate fault finding and rectification measures; health and safety; impact of maintenance on machinery operation and product quality; environmental considerations

3 Be able to operate timber conversion and processing equipment and produce marketable products

Equipment operation: equipment types eg peeler/pointing machine, mobile or static sawmill, circular sawbench, firewood processor, chainsaw mill, debarking machine, brushwood chipper, log splitter, charcoal kiln; compliance with current relevant legislation eg Health and Safety at Work Act 1974, Provision and Use of Work Equipment Regulations 1998 (PUWER), Management of Health and Safety at Work Regulations 1999; personal protective equipment (PPE) specific to machine type; pre-start checks; safe work systems; use of aids for lifting and handling timber and timber products; work and transport positions; product specification (measurement, standard sizes of product, production tolerances); health and safety; environmental considerations

4 Understand timber utilisation and the preservation process

Utilisation: wood characteristics; market characteristics and demands; transport considerations; advantages and disadvantages of different sawing methods (band saws and circular saws) and cutting patterns (through and through, radial, quarter sawn); health and safety; the range of products and residues; residue use; product marketing; sale methods; pricing strategy

Preservation: treatment types and processes for wood and timber preservation (brushing, immersion, spraying, pressure methods); preservatives used for end products; safe application of preservative chemicals and treated timber in end use; compliance with current relevant legislation; health and safety

Assessment and grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
P1 evaluate the range of equipment to convert and process round timber into final products [IE]	**M1** justify the selection of appropriate equipment to produce specific timber products	**D1** explain how timber conversion and utilisation machinery can add value to timber products to increase market potential.
P2 explain the criteria for selecting appropriate equipment to produce specific products [IE]		
P3 describe the importance of routine and non-routine maintenance [IE]	**M2** compare and contrast methods and equipment used in sawmills to produce specified timber products	
P4 identify common machinery faults and suggest rectification measures [IE, CT]		
P5 carry out routine machinery maintenance [RL, TW, SM]		

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	**To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:**	**To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:**
P6 describe the significance of current relevant legislation and industry guidance [IE, CT]		
P7 carry out risk assessments and pre-start checks as per manufacturers' recommendations [TW, SM]		
P8 safely convert and stack wood produce to given specifications [TW, SM]		
P9 safely operate processing equipment to produce timber products to given specifications [TW, SM]		
P10 evaluate the factors that influence timber product utilisation [IE, CT]	**M3** evaluate the suitability of given preservation types and processes for specified timber products.	
P11 explain commonly used timber preservation types and processes [IE]		
P12 evaluate how timber products are marketed. [IE, CT, EP]		

PLTS: This summary references where applicable, in the square brackets, the elements of the personal, learning and thinking skills applicable in the pass criteria. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers	RL – reflective learners	SM – self-managers
	CT – creative thinkers	TW – team workers	EP – effective participators

Essential guidance for tutors

Delivery

Delivery is likely to be a mixture of classroom teaching, discussions, seminar presentations, internet and/or library-based research, personal and/or industrial experience, visits and operating timber conversion equipment. Assessment is likely to be in the form of a portfolio of relevant evidence.

Industry placements should be monitored regularly to ensure the quality of the learning experience. It would be beneficial if the learner and supervisors were made aware of the requirements of this unit before any work-related activities are undertaken so that naturally occurring evidence can be collected at the time. For example, learners may have the opportunity to use timber conversion equipment and they should ask for observation records and/or witness statements to be provided as evidence of this. Guidance on the use of observation records and witness statements is provided on the Edexcel website.

Tutors should consider integrating the delivery, private study and assessment for this unit with other relevant units and assessment instruments learners are taking as part of their programme of study. Delivery should stimulate, motivate, educate and enthuse learners.

Whichever delivery methods are used, it is essential that tutors stress the importance of safe working practices, health and safety, sound environmental management and the need to manage timber resources sustainably.

Practical working techniques should be taught initially through demonstrations and then closely supervised practical sessions. The tutor must be able to demonstrate current industry best practices. Group size must not exceed recommended guidelines, where applicable, for the specified equipment and operations. Learners would benefit from opportunities to carry out conversion and processing in realistic industrial settings, although available work sites and their objectives may influence the range of activities that can be undertaken.

As learners develop their skills and confidence they should be encouraged to take more responsibility for their work, but practical operations must not take place without appropriate supervision. Learners are likely to develop skills at varied rates and progress should be monitored closely and allowance made for extra support for less experienced learners, whilst allowing more experienced learners to extend their skills.

Learning outcome 1 covers the range of conversion and processing equipment. Delivery is likely to be in the form of lectures, demonstration, site visits and independent learner research where appropriate. Learners will need to evaluate the range of equipment commonly used to convert round timber into specified products. They could also compare the use of additional equipment such as planers and mortising machinery to produce various end products and add value to the original product.

Learning outcomes 2 and 3 cover the maintenance and operation of timber conversion and processing equipment to produce marketable products. They are closely linked and are practical by nature. Delivery is likely to be in the form of initial lectures, demonstration, supervised practical sessions, site visits and independent learner research where appropriate. Learners should have access to a range of conversion equipment and should be able to carry out daily, weekly and monthly maintenance, in accordance with manufacturers' guidelines, for at least three of the types of equipment stated in the unit content. Learners should be given sufficient time and guidance to develop competent practical skills.

Learners could compile and complete maintenance checklists for the equipment and demonstrate safe use, producing marketable products to set specifications. For example, fencing posts debarked and pointed, firewood processed to a given specification using a firewood processor, sawn products created from a mobile sawmill or circular sawbench. Initiating and maintaining effective communication with learners will be vital in ensuring that they understand the specifications fully.

Learners should explain the importance of routine maintenance operations, giving examples of how this

affects the efficiency of timber conversion equipment – for example, the sharpness of peeling machine blades and the quality of debarking. Learners should also identify common faults in equipment and appropriate methods to rectify them. These faults could include poorly maintained saw blades resulting in a poor quality end product. Current legislation governing timber conversion and processing equipment should be discussed and the implications outlined.

Health and safety issues must be addressed before learners undertake any practical work with any items of equipment. Adequate PPE must be provided and worn following the production of suitable risk assessments. Visiting expert speakers could add to the relevance of the subject for learners. For example, a mobile sawmilling contractor could talk about their work, the methods they use and the market demands and requirements.

Learning outcome 4 covers how timber products are marketed and used, as well as the common preservation methods for timber products. This should include simple methods such as brushing and immersion together with pressure treatments. Learners must consider suitable methods of timber preservation for specified end products, such as brushing or dipping for fencing panels or pressure treatment for fencing posts. Learners should be made aware of the natural durability of timbers and of the importance of sapwood/heartwood ratios in terms of durability. Current legislation with regard to the use of preservatives and preservation methods, and potential environmental impacts, should be discussed. Visiting expert speakers could add to the relevance of the subject for learners. For example, a joiner or carpenter could talk about their work and the reasons why they use various timber products.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value**.

Learning time should address all learning (including assessment) relevant to the learning outcomes, regardless of where, when and how the learning has taken place.

Topic and suggested assignments/activities and/assessment
Introduction and overview of the unit.
Assignment 1: Timber Conversion and Processing Equipment (P1, P2, M1) Tutor introduces the assignment.
Theory sessions: introduce learners to the range of equipment commonly used and the criteria for selecting equipment to produce specific timber products.
Learners become familiar with the range of equipment commonly used and the criteria for selecting equipment to produce specific timber products.
Guest speakers from and site visits to timber conversion and processing businesses and work sites.
Assignment 2: Maintain and Operate Equipment (P3, P4, P5, P6, P7, P8, P9) Tutor introduces the assignment.
Practical sessions: introduce learners to equipment maintenance, fault finding and rectification, as well as equipment operation and industry conventions.
Learners become familiar with equipment maintenance; fault finding and rectification, as well as equipment operation and industry conventions.
Assignment 3: Timber Utilisation and Preservation (P10, P11, P12, M2, M3, D1) Tutor introduces the assignment.

Topic and suggested assignments/activities and/assessment
Theory sessions: introduce learners to the factors that influence timber product utilisation, commonly used timber preservation types and processes, as well as how timber products are marketed.
Learners become familiar with the factors that influence timber product utilisation, commonly used timber preservation types and processes, as well as how timber products are marketed.
Site visits and guest speakers for learners to consider marketing opportunities for timber products and timber preservation systems.
Unit review.

Assessment

Where possible, to ensure assessment is fair, the size and complexity of the tasks should be the same for all learners.

For P1, learners must evaluate the range of equipment used to convert and process round timber into final products. Tutors should identify the equipment or agree it through discussion with learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. Verbal assessment may be appropriate, using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P2 and M1.

For P2, learners must explain the criteria for selecting appropriate equipment to produce specific products. Tutors should identify the specific timber products and equipment or agree them through discussion with learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. Verbal assessment may be appropriate, using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P1 and M1.

For P3, learners must describe the importance of routine and non-routine maintenance. Tutors should identify the equipment or agree it through discussion with learners. As a minimum, learners should provide evidence covering three types of timber conversion equipment. This could be assessed directly by the tutor during practical activities. If this format is used, suitable evidence from guided activities would be observation records completed by learners and the tutor. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor. This could be assessed in conjunction with P4, P5, P6, P7, P8 and P9.

For P4, learners must identify common machinery faults and suggest appropriate rectification measures. Tutors should identify the machinery or agree it through discussion with learners. As a minimum, learners should provide evidence covering three types of timber conversion equipment. Evidence could be a verbal explanation or responses to short-answer questions, discussion with tutor or production of fault finding guide for the machinery. Evidence may also be presented as a flow chart, formal report, case study or a pictorial presentation with accompanying notes. This could also be assessed directly by the tutor during practical activities. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor. This could be assessed in conjunction with P3, P5, P6, P7, P8 and P9.

For P5, learners must carry out routine machinery maintenance. Tutors should identify the machinery or agree it through discussion with learners. As a minimum, learners should provide evidence covering three types of timber conversion equipment. Maintenance should be carried out according to manufacturers' guidelines and health and safety requirements. Evidence could be maintenance checklists for specified conversion equipment or a maintenance logbook of tasks completed. Video or photographic evidence (suitably authenticated) could support written evidence. This could be assessed in conjunction with P3, P4, P6, P7, P8, and P9.

For P6, learners must describe the significance of current relevant legislation and industry guidance. Tutors should identify the equipment concerned or agree it through discussion with learners. As a minimum, learners should provide evidence covering three types of timber conversion equipment and associated legislation and industry guidance. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. This could also be assessed directly by the tutor during practical activities, so verbal assessment may be appropriate using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P3, P4, P5, P7, P8 and P9.

For P7, learners must carry out risk assessments and pre-start checks as per manufacturers' recommendations. Tutors should identify the equipment or agree it through discussion with learners. As a minimum, learners should provide evidence covering three types of timber conversion equipment. This could be assessed directly by the tutor during practical activities. If this format is used then suitable evidence from guided activities would be observation records completed by learners and the tutor. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor. This could be assessed in conjunction with P3, P4, P5, P6, P8 and P9.

For P8, learners must convert and stack wood produce safely to given specifications. Tutors should identify the specifications or agree them through discussion with learners. This could be assessed directly by the tutor during practical activities. If this format is used, suitable evidence from guided activities would be observation records completed by learners and the tutor. If assessed during a placement, witness statements should be provided by a suitable representative and verified by the tutor. This could be assessed in conjunction with P3, P4, P5, P6, P7 and P9.

For P9, learners must operate processing equipment safely to produce timber products to given specifications. Tutors should identify the equipment and specifications or agree them through discussion with learners. As a minimum, learners should provide evidence covering three types of timber processing equipment. Equipment operation should be carried out according to manufacturers' guidelines and health and safety requirements. This could be assessed directly by the tutor during practical activities. If this format is used, observation records completed by learners and the tutor would be suitable evidence. If assessed during an industry placement, witness statements should be provided and verified by the tutor. Video or photographic evidence (suitably authenticated) could support written evidence. This could be assessed in conjunction with P3, P4, P5, P6, P7 and P8.

For P10, learners must evaluate the factors that influence timber product utilisation. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. Verbal methods of assessment may be appropriate, using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P11, P12, M2, M3 and D1.

For P11, learners must explain commonly used timber preservation types and processes. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. Verbal assessment may be appropriate, using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P10, P12, M2, M3 and D1.

For P12, learners must evaluate how timber products are marketed. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. Verbal assessment may be appropriate, using digital audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P10, P11, M2, M3 and D1.

For M1, learners must justify the selection of appropriate equipment to produce specific timber products. Tutors should identify the specific timber products or agree them through discussion with learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the

production of an illustrated poster or presentation. Verbal assessment may be appropriate, using digital, audio or other recording methods to ensure underpinning knowledge and understanding. This could be assessed in conjunction with P1 and P2.

For M2, learners must compare and contrast methods and equipment used in sawmills to produce specified timber products. Tutors should identify the methods and equipment or agree them through discussion with learners. Where possible, to ensure assessment is fair, the size and complexity of the tasks should be the same for all learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. This could be assessed in conjunction with P10, P11, P12, M3 and D1.

For M3, learners must evaluate the suitability of given preservation types and processes for specified timber products. Tutors should identify the types and processes or agree them through discussion with learners. Where possible, to ensure assessment is fair, the size and complexity of the tasks should be the same for all learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated poster or presentation. This could be assessed in conjunction with P10, P11, P12, M2 and D1.

For D1, learners must explain how timber conversion machinery and utilisation can add value to timber products to increase market potential. Tutors should identify the specific timber products, to include sawn and round timber, or agree them through discussion with learners. One way of assessing this is through a written report, but there is also scope for assignment work involving the production of an illustrated presentation. Reference must be made to natural durability and the use of timber preservation methods.

Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, M1	Timber Conversion and Processing Equipment	Evaluate the range of timber conversion and processing equipment, explain the criteria for selection and justify the selection of equipment to produce specific timber products.	Witness testimony. Written report. Illustrated poster. Tables/charts. Case studies.
P3, P4, P5, P6, P7, P8, P9	Maintain and Operate Equipment	Maintain and operate timber conversion and processing equipment safely to produce specific timber products, making reference to relevant legislation and industry guidance.	Witness testimony. Practical observation and assessment. Practical work diary. Completed observation checklist.
P10, P11, P12, M2, M3, D1	Timber Utilisation and Preservation	Evaluate the factors that influence timber utilisation and explain timber preservation types and processes with reference to specified timber products. Explain how to increase market potential by adding value to timber products through timber conversion machinery and utilisation.	Witness testimony. Written report. Illustrated poster. Tables/charts. Case studies.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC Land-based sector suite. This unit has particular links with:

Level 2	Level 3
Undertake Tree Felling Operations	TW12 Convert and stack wood produce manually TW20 Process timber on site
Undertake Tree Climbing and Pruning Operations	Understand the Principles of Tree Felling and Chainsaw Use

Essential resources

Learners will require regular and routine access to a range of timber conversion and processing equipment as listed in the unit content. The range of equipment should reflect the local or regional industry. Access to timber conversion and processing equipment should be sufficient to allow all learners adequate opportunity to develop their practical competence and confidence over a period of time. Sufficient timber should be available to enable learners to experience a proper working environment. Learners also need access to the following:

- a suitable work area for equipment operation and stacking of produce/co-products
- log lifting equipment
- tools and materials necessary for maintenance
- personal protective equipment (PPE)
- waste disposal facilities and equipment
- first-aid kits.

There is also a need for adequate classroom and workshop facilities including video and computer-based presentation equipment. Textbooks, magazines and e-learning resources will underpin learner knowledge of timber conversion and utilisation. There should also be adequate washing and welfare facilities available at the centre and on work sites.

Employer engagement and vocational contexts

Tutors are encouraged to create and develop links with a range of conversion and processing contractors and businesses. Where possible, learners should visit timber preservation site operations to investigate the practical implications of timber preservation and to see the plant and equipment involved in these processes.

Learners need to experience a range of conversion equipment and processing systems with different characteristics and complexities in order to contextualise and enhance their learning. A visit to a commercial sawmill would also help learners understand the potential end uses of timber.

Wherever possible, learners should participate in as wide a range of activities as possible, perhaps supplemented by a period of relevant work experience. Tutors should take account of the seasonality associated with treework activities when planning delivery and assessment.

Indicative reading for learners

Textbooks

Anon – *Health and Safety in Sawmilling* (HSE Books, 1997) ISBN 9780717614028

Aaron J R and Richards E G – *British Woodland Produce* (Stobart Davies, 1990) ISBN 9780854420476

Bowyer J L, Shmulsky R and Haygreen J G – *Forest Products and Wood Science: An Introduction* (Wiley-Blackwell, 2007) ISBN 9780813820361

Desch H E and Dinwoodie J M – *Timber: Structure, Properties, Conversion and Use* (Palgrave Macmillan, 1996) ISBN 9780333609057

Hoadley R B – *Understanding Wood: A Craftsman's Guide to Wood Technology* (Taunton Press, 2000) ISBN 9781561583584

Morris J – *Saws and Sawmills for Planters and Growers* (Cranfield University Press, 1991) ISBN 9781871315110

Smithies J N – *Sawmilling Accuracy for Bandsaws Cutting British Softwoods* (The Stationery Office Books, 1991) ISBN 9780117102958

Walker J – *Primary Wood Processing: Principles and Practice* (Springer, 2006) ISBN 9781402043925

Journals and magazines

Forestry *Journal*

Timber Trades

Wood Science

World Wood

Other publications

Arboriculture and Forestry Advisory Group (AFAG) Safety Guides

Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
Independent enquirers	evaluating the range of equipment to convert and process round timber into final products explaining the criteria for selecting appropriate equipment to produce specific products describing the importance of routine and non-routine maintenance identifying common faults and suggesting appropriate rectification measures describing the significance of current relevant legislation and industry guidance evaluating the factors that influence timber product utilisation explaining commonly used timber preservation types and processes evaluating how timber products are marketed
Creative thinkers	identifying common faults and suggesting appropriate rectification measures describing the significance of current relevant legislation and industry guidance evaluating the factors that influence timber product utilisation evaluating how timber products are marketed
Reflective learners	carrying out routine servicing and maintenance
Team workers	carrying out routine servicing and maintenance carrying out risk assessments and pre-start checks as per manufacturers' recommendations converting and stacking wood produce safely to given specifications operating processing equipment safely to produce timber products to given specifications
Self-managers	carrying out routine servicing and maintenance carrying out risk assessments and pre-start checks as per manufacturers' recommendations converting and stacking wood produce safely to given specifications operating processing equipment safely to produce timber products to given specifications.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Independent enquirers	selecting and justifying appropriate equipment to produce specific timber products comparing and contrasting methods and equipment used in sawmills to produce specified timber products evaluating the suitability of given preservation types and processes for specified timber products producing a marketing strategy for specified timber products
Creative thinkers	selecting and justifying appropriate equipment to produce specific timber products producing a marketing strategy for specified timber products.

Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	producing reports, tables and posters using ICT programs
Manage information storage to enable efficient retrieval	producing reports, tables and posters using ICT programs
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	using the internet to research current relevant legislation and industry guidance using the internet to research current information on how timber products are marketed
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	using the internet to research current relevant legislation and industry guidance using the internet to research current information on how timber products are marketed
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: • text and tables • images • numbers • records	producing reports, tables and posters using ICT programs
Bring together information to suit content and purpose	producing reports, tables and posters using ICT programs
Present information in ways that are fit for purpose and audience	producing reports, tables and posters using ICT programs
English	
Reading – compare, select, read and understand texts and use them to gather information, ideas, arguments and opinions	using the internet to research current relevant legislation and industry guidance using the internet to research current information on how timber products are marketed
Writing – write documents, including extended writing pieces, communicating information, ideas and opinions, effectively and persuasively	producing reports, tables and posters using ICT programs.