

Ready steady wood to timber

Key Words:

Logs, standing timber, at roadside, saw mill, saw log, haulage, primary processing, secondary processing, tertiary processing, timber, wood products.

Activity Links:

Ready steady timber mapping. Use cards with images of real wood products from the different stages of processing e.g. planks, sawdust, wood fuel, woodchip, furniture etc. Sort them into the different stages of processing. Look at what journey the wood has taken in the processing and identify where that processing might have taken place – locally or nationally. You could use the map given in Diagram 3 in this unit: Map of Timber processors (England).

You can process wood - make a tree cookie.

Taking a log or branch, carry out a simple wood processing activity. Find a branch between 5- 10 cm in diameter and using a small bow saw, protective gloves, clamp or saw horse, saw slices off the branch 1-2 cm thick. This is a 'tree cookie'. You are processing the wood by sawing it and this is an example of primary processing. Next drill a hole using a hand drill in the tree cookie using a hand drill. Decorate your tree cookie and thread your tree cookie onto string and you have a product, for example a necklace or key ring. This is an example of secondary processing. This activity requires 1:1 adult to child supervision for sawing and hand drilling.

Visit a local wood processing centre or sales point e.g. saw mill, craft workshop, timber trade yard. See an example of a school trip to a sawmill in the 'Finding Out More' section.

Choose a wooden item in your classroom or house. It was once part of a tree. What processing do you think it has been through to convert it from the tree into the item? Was it processed by machines or by hand?

The processing of trees for wood products and timber

Cutting trees for timber to make the many products we use and enjoy is just one benefit from growing trees. The wood that is cut down and harvested from forests and woodlands for timber is transported for processing or taken by small operators, craft workers and woodland owners to convert to its many uses. Trees for cutting are identified and are marked out ready to be harvested. In smaller woodlands, the trees may be processed in the forest. On a larger scale, trees and areas of woodland are packaged into *lots* then sold as *standing timber* through a tendering system. Those buying these packages will make arrangements for harvesting and collection from the roadside and then transport the logs to their processing point. Sometimes timber is bought *at roadside*, which means that the woodland owner has already cut and brought the logs to the road, where the buyer then picks it up and transports it to the processing plant.

This reference sheet looks at the steps involved in converting wood to useable timber in more detail.



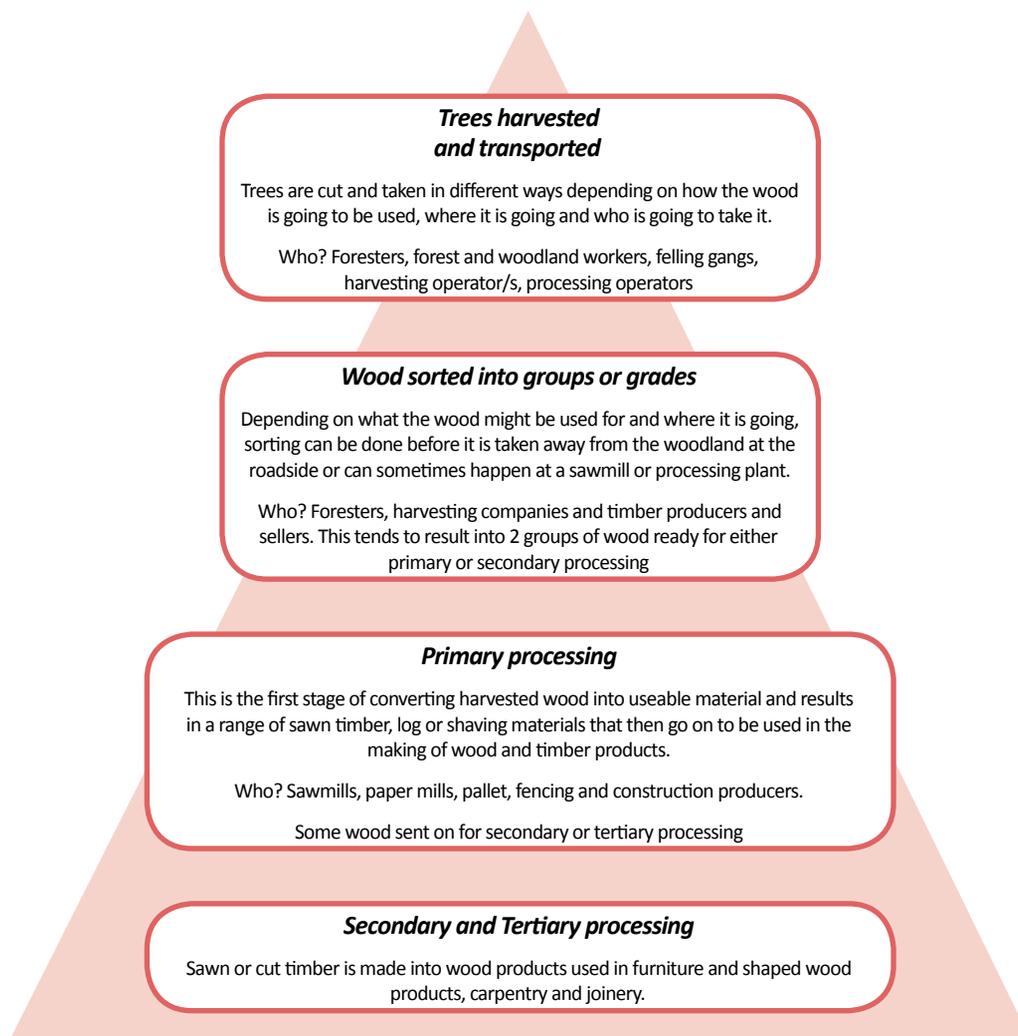
Pictures: Forestry Commission



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From log to timber – primary processing

One tree can yield many different products. The biggest and best part of the trunk is called the *saw log* and can be sawn for construction timber. The smaller part of the trunk can be used for fencing stakes, and the branches and roots can be chipped and used for wood fuel. The timber from broadleaved trees can be used to make high value products such as veneer for furniture, but only if the quality is good enough. When forests are not managed the result is lower quality timber, and often the only market available for it is firewood.



The quality of timber is dictated by its suitability for a particular use based on the grain of the wood, its look, its weight, and any knots or weaknesses. Large scale sawmills want high volumes of straight conifer trees with few branches, which will pass through the sawmill easily and produce a uniform product. Furniture makers may want small volumes of timber that has a highly decorative and unique grain, which will produce distinctive furniture.



Pictures: Forestry Commission

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Most timber processing operations produce 'by products' such as saw dust and off-cuts which can be used for wood fuel and panel manufacture. The following shows primary processing products and timber uses:

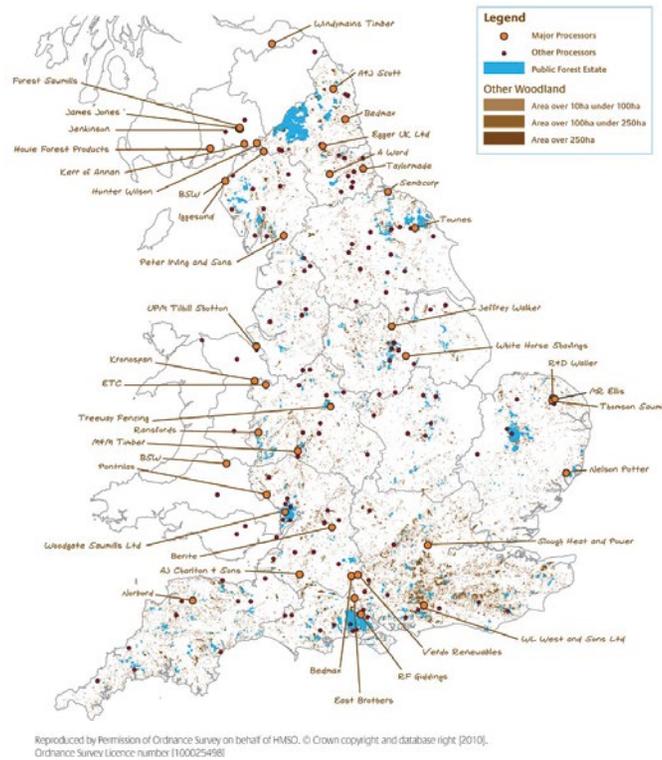
<p><i>Quality sawn timber for roofs, doors, windows and house construction</i></p>	<p><i>Planed or shaved wood for wood panels or veneer sheets</i></p>	<p><i>Sawdust and filings for pulp to making paper</i></p>
		
<p><i>Chippings, shavings and sawdust for wood fuel and biomass</i></p>	<p><i>Landscaping products such as fencing</i></p>	<p><i>Rough sawn timber for pallets and packaging materials</i></p>
		
<p><i>Chippings and sawdust for animal bedding and farm materials</i></p>	<p><i>Chippings for garden and play areas</i></p>	<p><i>Charcoal.....and much, much more</i></p>
		

Pictures: Forestry Commission

Twenty per cent of the wood we use has been grown in the UK, and eighty per cent of wood that we use comes from other countries, so we also process wood from around the world. In the UK we have a thriving primary timber processing industry and the diagram overleaf shows a map of locations just for England.

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Diagram 3: Map of Timber processors (England). Taken from Figure 10: Timber Processors, page 38 of 'The Independent Panel on Forestry Final Report' DEFRA (2012). With kind permission from DEFRA. Diagram 3 is also given with this unit as a PDF file.



Making timber ready to use – secondary processing

In *secondary processing* wood is machined or made into a more refined product, for example a house door, window or furniture, made to the specific size and dimensions. This may be done by computer operated machines or by crafts people who cut, plane, shape and sand the wood by hand. Resulting products are then fitted together by other trades people to make desks, chairs, beds, cabinets, boxes and other items.



Real Life Example 1:

Vastern Timber

Vastern Timber is one of the largest British hardwood sawmills in the country, specialising in cutting and manufacturing native grown timbers including English oak, sweet chestnut, ash, sycamore and larch.



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Finding Out More:

The Grown in Britain Campaign (GiB)

Grown in Britain aims to bring together everyone who values our forests, woods and trees and the products we can make from the wood they produce. It is an incredibly positive movement that is bringing together: the environmentalists and woodland owners who contributed to the policy shaping work of the Independent Forestry Panel; the contractors, builders and retailers who want to buy, use and sell more British timber and wood-based products; woodland managers, public and private agencies who want to see many more of our woods managed to produce sustainable and legal sources of wood. To find out more and get involved in the campaign, see www.growninbritain.org

Forestry Commission facts, figures and statistics

A useful leaflet with summary statistics on forest industry employment, visitors to forests, planting and production in the UK and comparisons with other countries. See <http://www.forestry.gov.uk/forestry/inf-d-7a9f6j> and more detailed statistics at: <http://www.forestry.gov.uk/forestry/inf-d-7a9dgc>

Forest Machines and Equipment.

See www.forestry.gov.uk/forestry/inf-d-5nmc8e

Forest Education Network and Council for Learning Outside the Classroom Resources

Forest education Network Resources www.lotc.org.uk/fen/forest-education/resources/ and woodland related case studies www.lotc.org.uk/category/case-studies/

Sylva Foundation: OneOak resources

The Sylva Foundation is a charity working to revive Britain's wood culture. It runs a number of projects under the themes of science, education and forestry: www.sylva.org.uk

Sylva ran an inspirational education project called OneOak. Read how 5 schools were involved with following the life cycle of an oak tree. The school children watched the tree felled, then learnt how the wood was processed into 50 products and they also participated in planting 250 oak seedling trees to create a new forest. The OneOak website contains a wealth of information, images and films from this unique 3 year project.

See <http://sylva.org.uk/oneoak/?fromTab=true>

An example of a school trip to a processing mill

This download explains how half-day trips were organised by the teachers and sawmill owners to a local sawmill so that pupils could understand the connections between the trees, the timber produced by the sawmill, and how the wood is then used for building and furniture making.

See www.hse.gov.uk/services/education/sawmill-trip.pdf

Whitney Saw Mills

This mill was set up by a furniture maker who found it difficult to find local hard wood like oak for his business. It is now an excellent example of secondary processing and there are a wide variety of products made from the wood processed there. See www.whitneysawmills.co.uk/aboutus.html

Travis Perkins citizenship report

This building merchants company explains how they try to reduce their environmental impact by sourcing timber from other countries who grow trees sustainably. See www.travisperkinsplc.co.uk/citizenship/environment/

Did You Know?

- The wood fuel supply chain is forecast to generate £1 billion Gross Value Added (GVA) for the UK economy and 15,000 new jobs by 2020.
- In 2010, 14,000 thousand people in forestry and 29,000 in primary wood processing (sawmilling, panels and pulp & paper) were employed by 3,170 forestry businesses, 605 sawmilling businesses, 135 wood-based panel businesses and 250 pulp & paper businesses. The vast majority of these businesses are among the small and medium sized enterprises.

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