

Wood Conversion



Learning Objectives

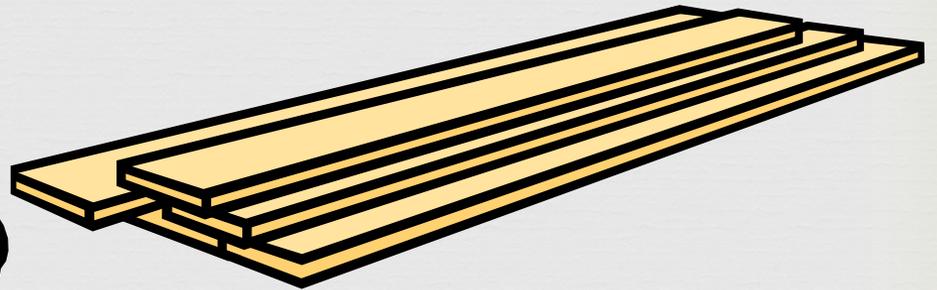
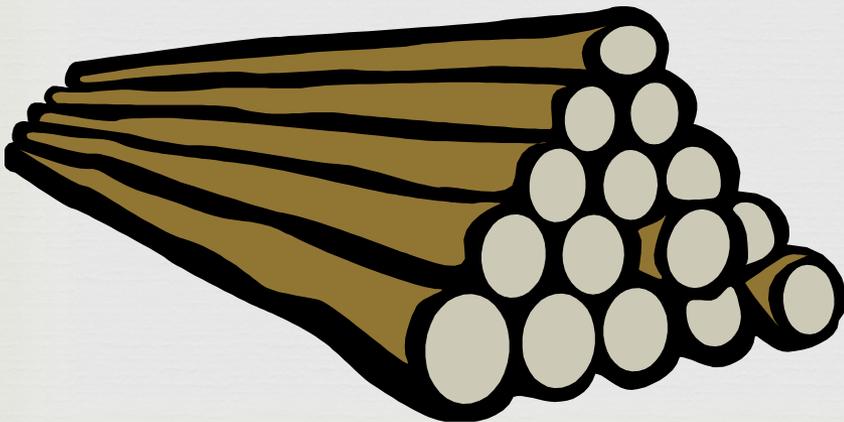


- ❧ To understand the need for wood conversion.
- ❧ To be able to explain the term wood conversion.
- ❧ To be able to identify the various methods of conversion.
- ❧ To be able to compare the advantages and disadvantages of the various methods.

What is wood conversion?



- ❧ Wood Conversion is the cutting of logs into planks of wood
- ❧ Logs are converted for two main reasons
 - ❧ To reduce the wood to a workable size
 - ❧ Small planks are easier to dry out than large logs

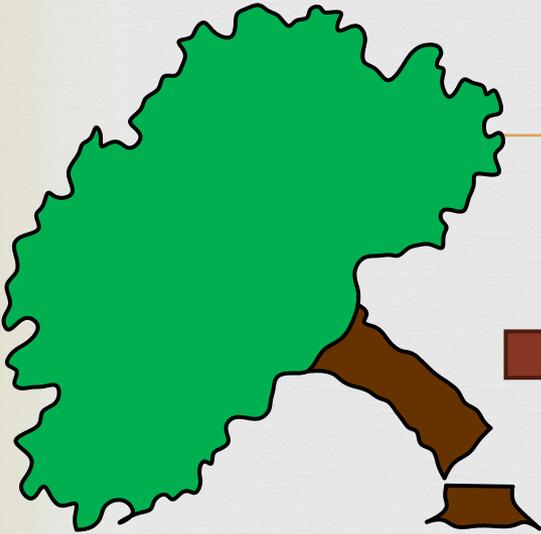


How is wood converted?

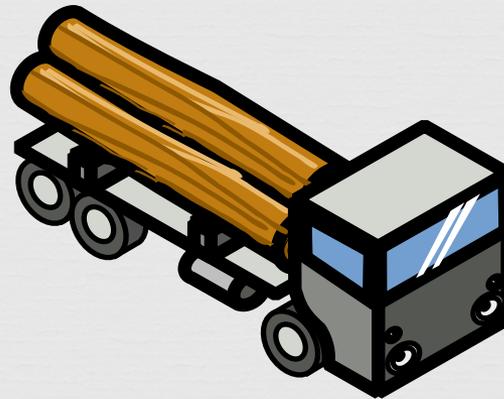


- ❧ Trees are transported to a saw mill
- ❧ Branches and bark are removed
- ❧ After these stages there are three ways that logs are converted:
 - ❧ Through and through method
 - ❧ Quarter sawn
 - ❧ Tangential sawn

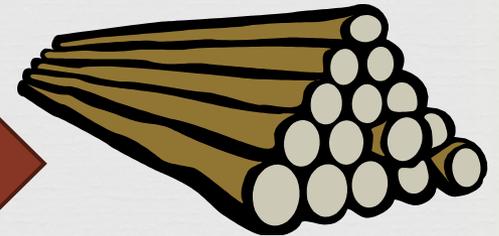
The conversion process



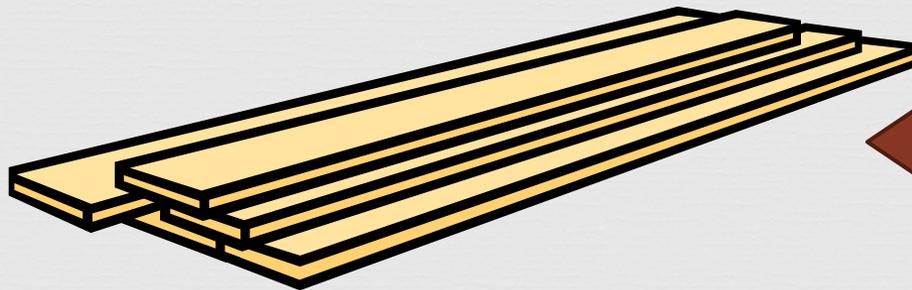
Tree
Felling



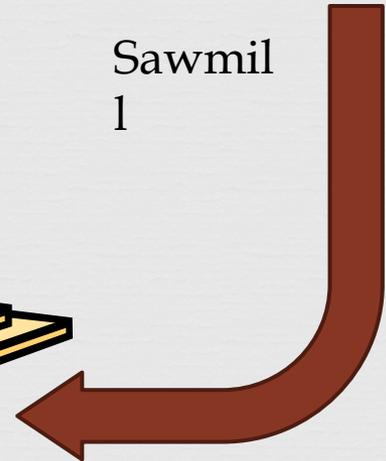
Transport to
sawmill



Sawmil
1



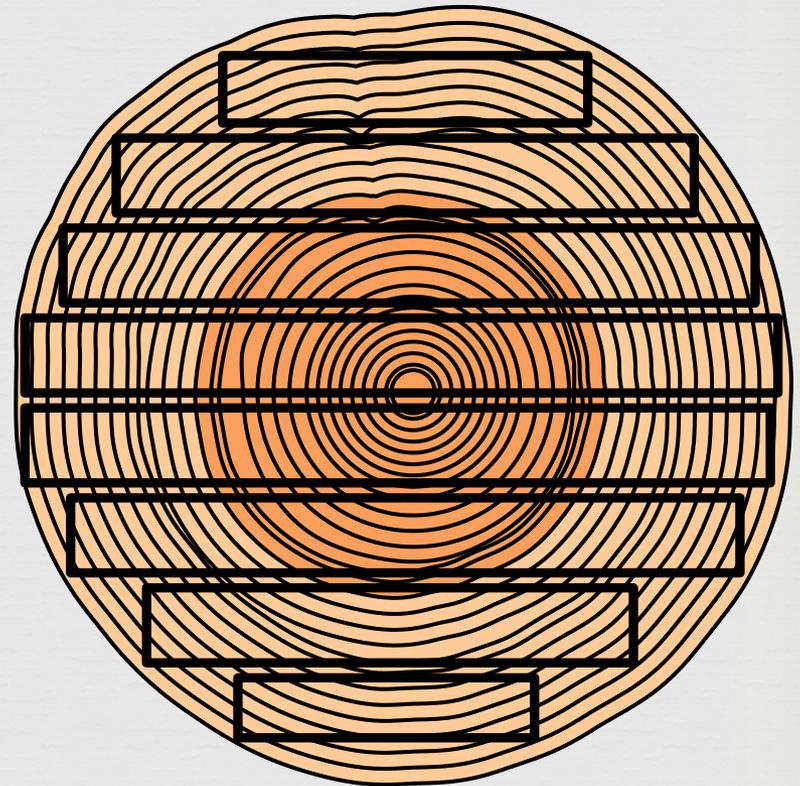
Conversion



Through and Through Sawing



- ❧ This method involves taking parallel cuts through the log
- ❧ Heartwood and sapwood are not separated
- ❧ Timber cut this way is used for
 - ❧ Garden Furniture
 - ❧ Fencing Posts
 - ❧ Pallets



Through and Through Sawing

Advantages

- ❧ Very cheap method
- ❧ Very fast method
- ❧ Very little waste produced

Disadvantages

- ❧ Planks contain heartwood and sapwood
- ❧ Planks are not very strong
- ❧ Planks are prone to warp, cup, split and twist
- ❧ No distinctive grain pattern

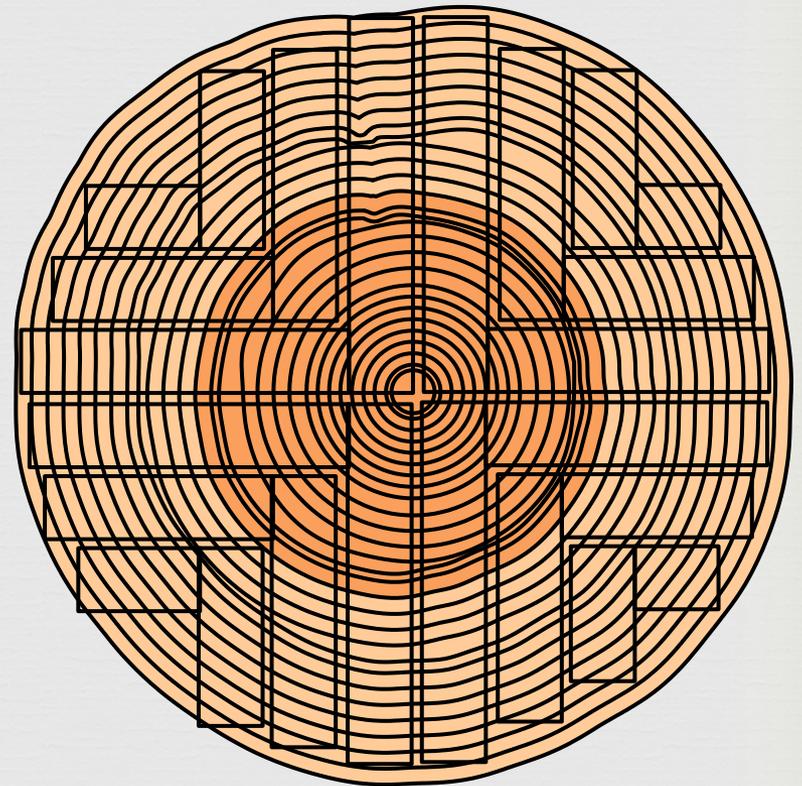
Through and Through



Quarter Sawing



- ❧ In this conversion method the log is cut into quarters
- ❧ This requires a lot of turning of the log
- ❧ Heartwood and sapwood can be separated using this method
- ❧ This method is used on hardwoods
- ❧ It shows silver grain in oak
- ❧ Timber cut this way is used for floorboards and furniture.



Quarter Sawing

Advantages

- ❧ The planks are very strong
- ❧ The planks are very hard wearing
- ❧ It exposes an attractive grain pattern
 - ❧ Silver grain in Oak

Disadvantages

- ❧ Is a very expensive method
- ❧ A lot of waste is generated
- ❧ Planks tend to be narrow

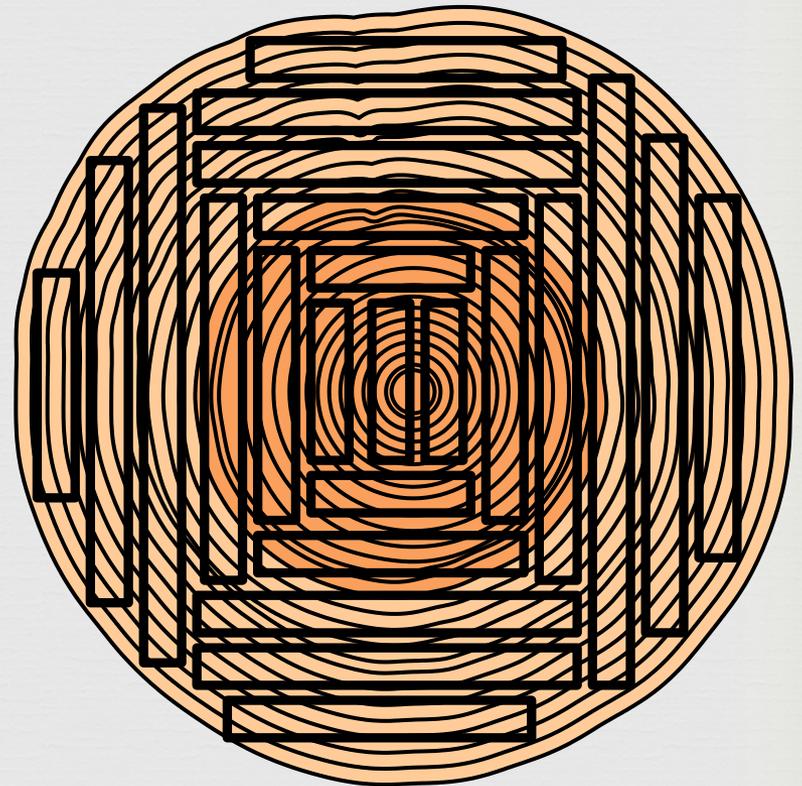
Quarter Sawing



Tangential Sawing



- ❧ In this conversion method the cut is made tangential to the annual rings
- ❧ This requires a lot of turning of the log
- ❧ Heartwood and Sapwood are separated using this method.
- ❧ Timber from this conversion method is used for furniture and veneers.



Tangential Sawing

Advantages

- ❧ The planks are very strong
- ❧ The planks have an attractive grain pattern (Flame figure)
- ❧ Heartwood and Sapwood are separated

Disadvantages

- ❧ The planks are prone to swelling and shrinking
- ❧ Costly and slow
- ❧ Lots of waste

Waste products



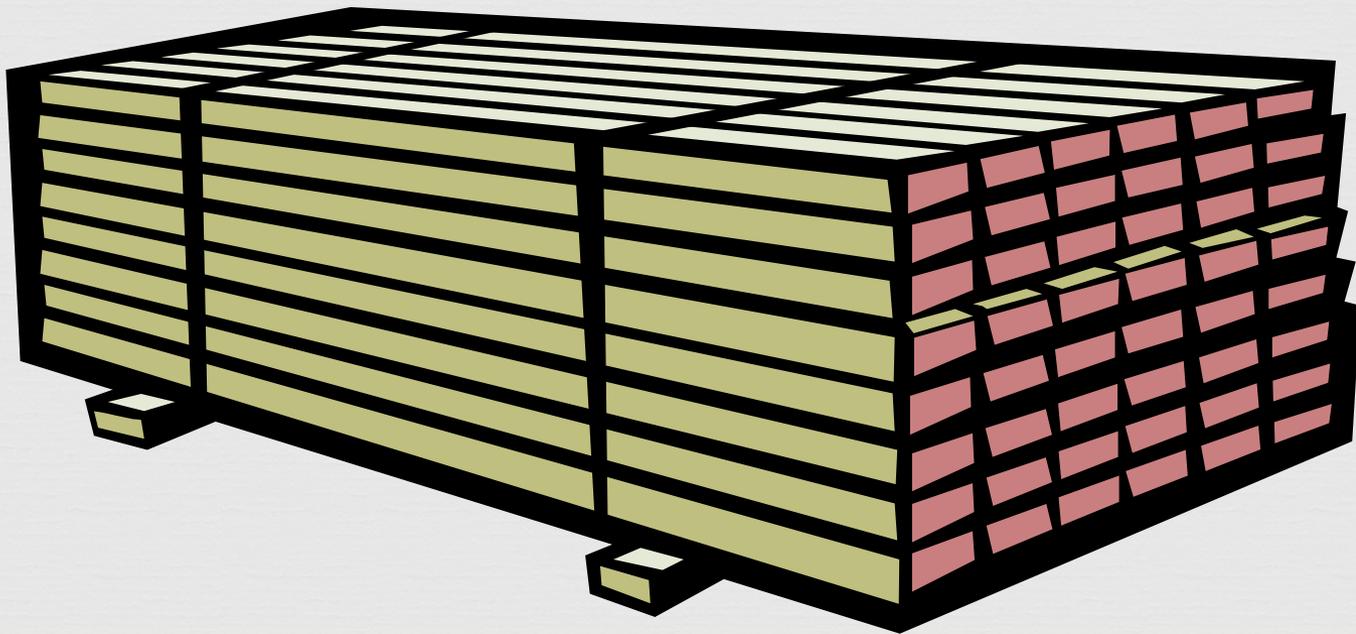
☞ The waste produced from converting logs to timber can be reused

1. Sawdust: Used to make MDF
2. Bark: Used for flower beds
3. Small strips of wood: Burnt to heat the sawmill

What's next?



- ☞ The timber is stacked on a trolley and brought to a kiln to be seasoned.



Video Links



☞ Felling= 8min

<http://www.youtube.com/watch?v=-57xOdPWX9E>

☞ Conversion = 3 1/2 min

http://www.youtube.com/watch?annotation_id=annotation_508088&feature=iv&src_vid=bqPd_8Zahg&v=PB3-ekIW2EY