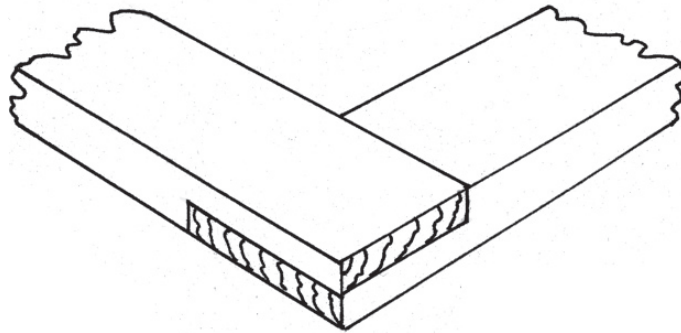


Lap joints for timber

This worksheet is about lap joints for joining pieces of timber. It tells you the good and bad points about these joints and how you can make them.

These joints are sometimes called halving joints.



What you will learn

When you have finished this worksheet, you should be able to:

- Make lap joints correctly.
- Fix lap joints correctly.

Things you need before you start

Materials

You will need scrap timber and some nails to work with.

Tools or equipment

Measuring and marking tools

A saw, chisel and hammer

Fixings (nails, screws)

What is a lap joint?

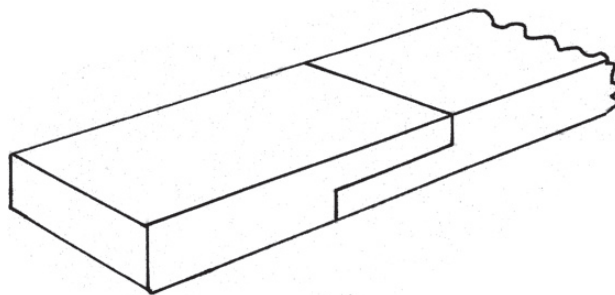
Lap or halving joints are used for joining pieces of timber.

- It needs special cuts in the timber
- The joint is fixed with nails or screws

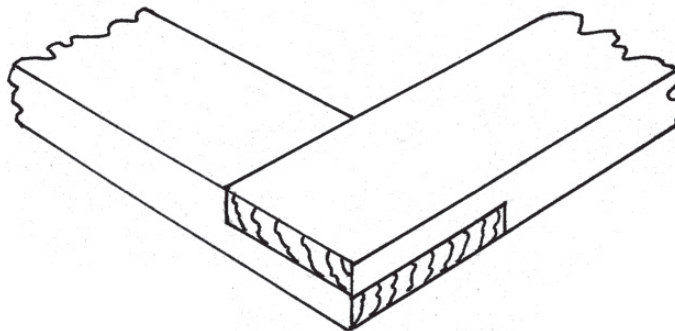
The two pieces of timber are cut so that they fit together at different angles. Usually half the timber thickness is cut away. That is why it can be called a 'halving' joint.

Here are some examples

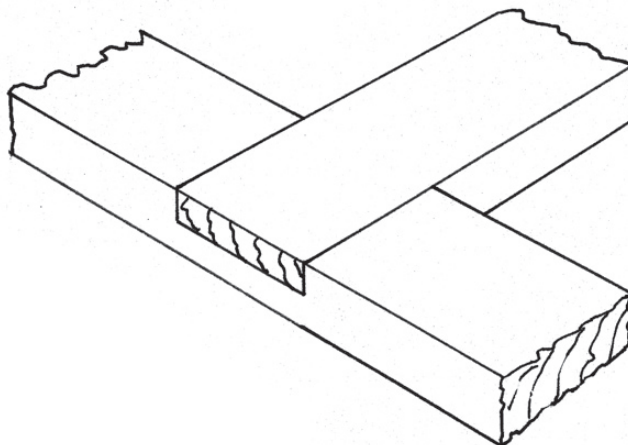
Straight



Angle-halved



Tee-halved

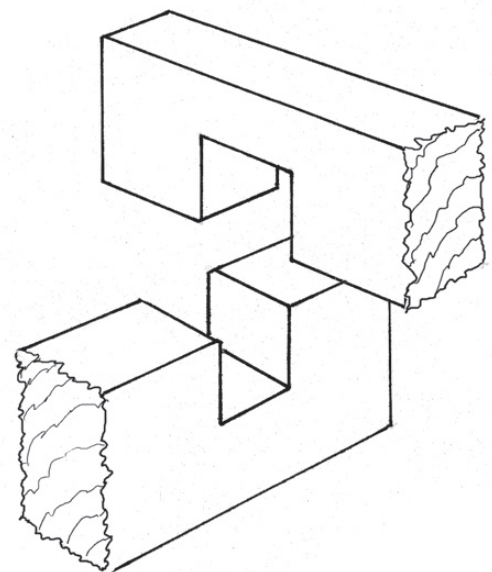
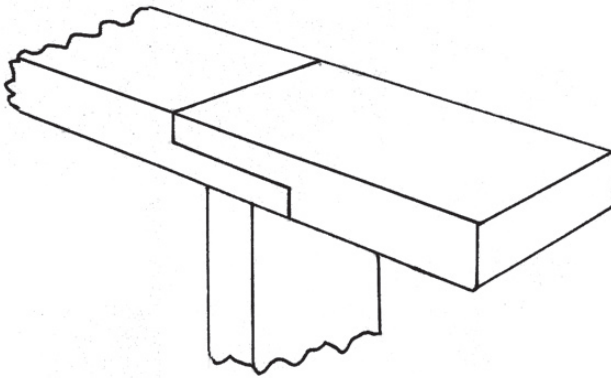


What is a lap joint used for?

It is used for such things as

- joining long lengths of timber in a frame
- corner joints
- crossing one length of timber over another.

Here are some examples



The close fit of the pieces helps to give it strength

The joint is neat and flat, but the fixings usually show.

Activity

Find some lap or halving joints used around where you live.

- What are they used for?
 - What sizes and types of joints can you find?
-

How do I make a lap joint?

You need these tools:

- measuring and marking tools
- saw, chisel
- hammer for nails
- drill and screwdriver for screws
- fixings (nails, screws)

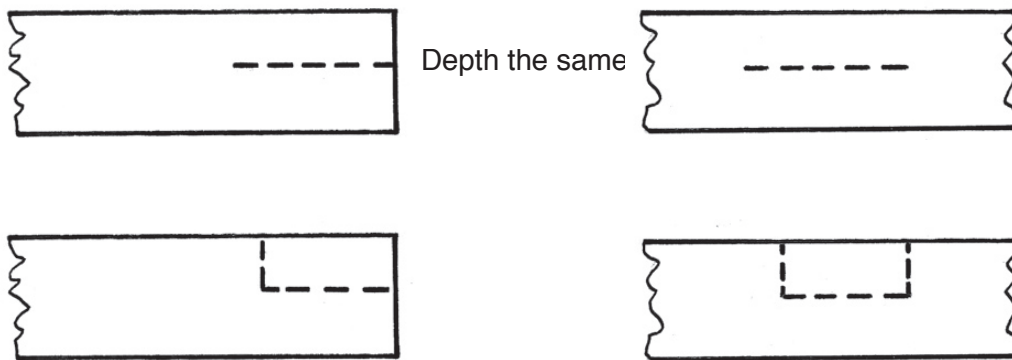
Safety

Make sure you follow the safety tips for Sawing, Chiselling and Hammering that are at the end of those worksheets.

Follow these steps

Step 1 Measure and mark the pieces of timber.

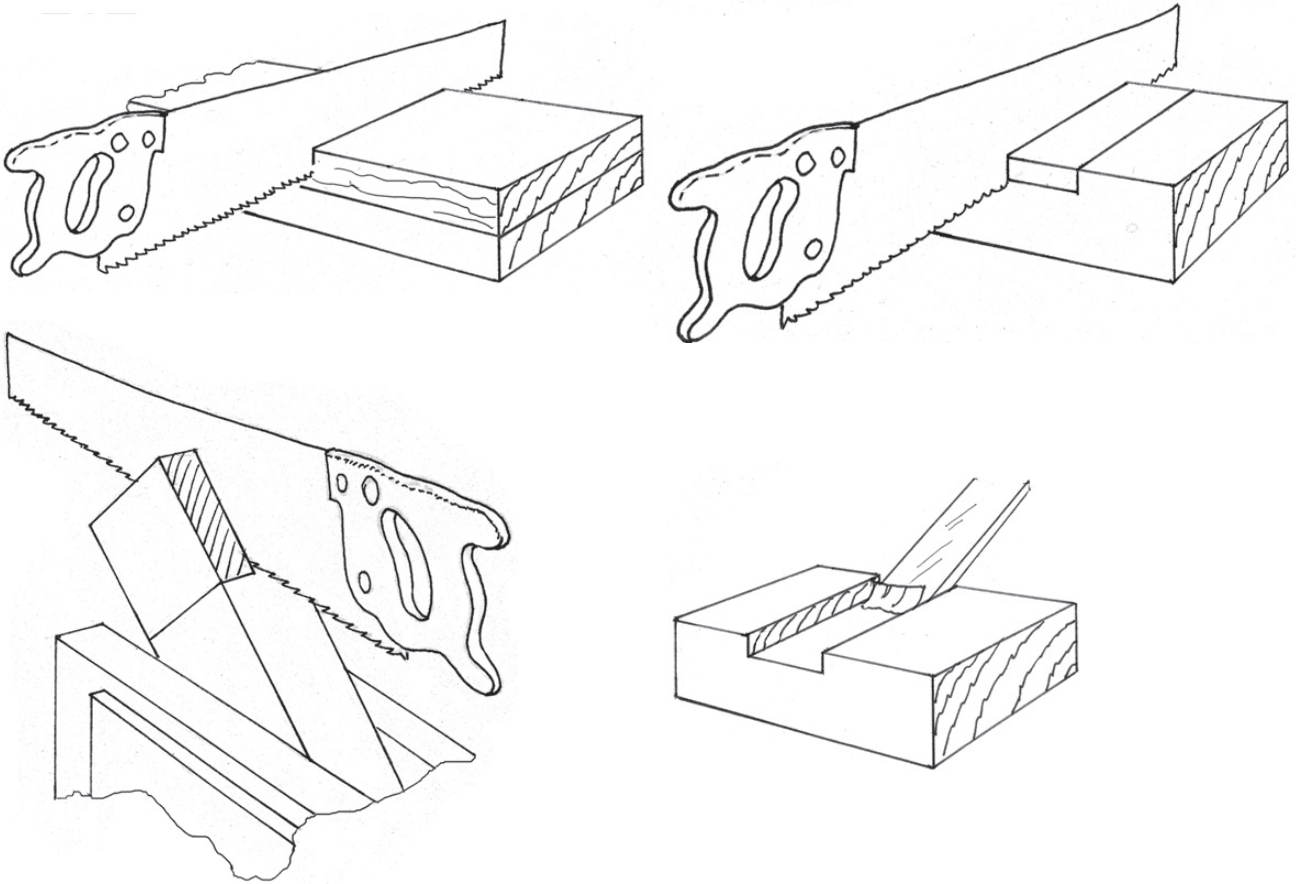
- Cut your pieces of timber to the size you need.
- Measure and mark the position for the joint on your timber pieces



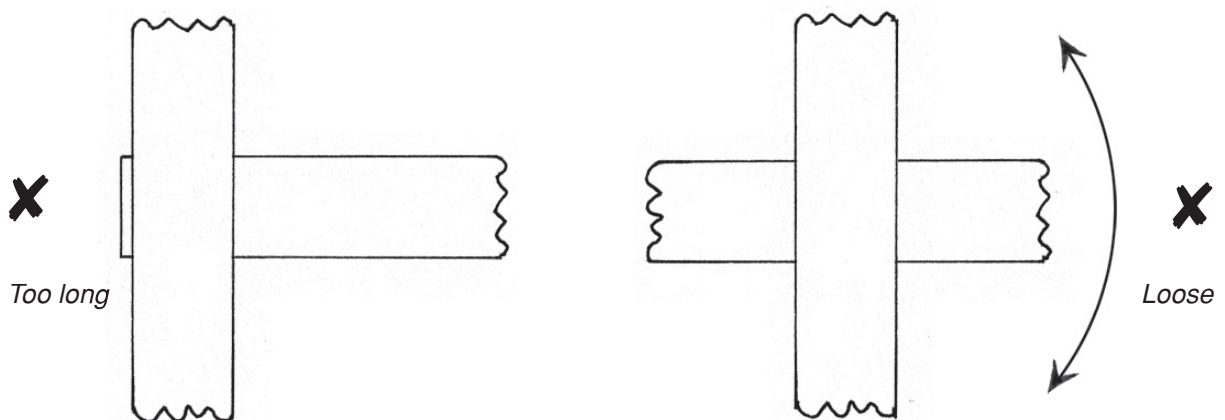
- Mark the waste side



Step 2 Cut the timber for the joint.



Check that the two pieces fit together correctly and tightly.



Trim the timber or remake the joint if you need to.

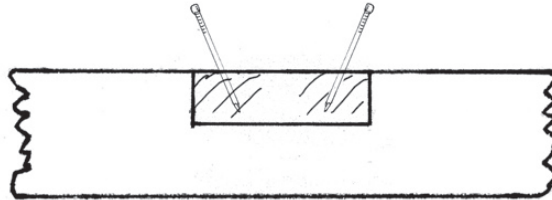
Step 3a Fix the joint with nails

Use galvanised nails for construction work.

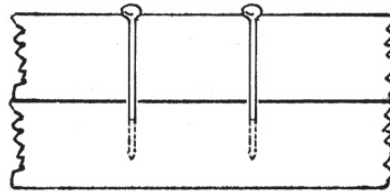
The length of the nail should be about $\frac{2}{3}$ the thickness of the two pieces of timber.

Glue could be added for extra strength.

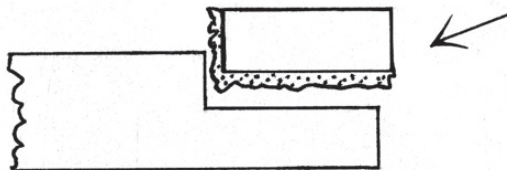
Nail at an angle (skew-nail)



Length of nails



Glue added

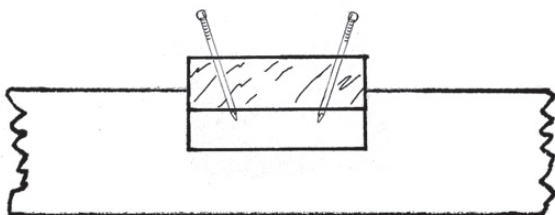


Things to check

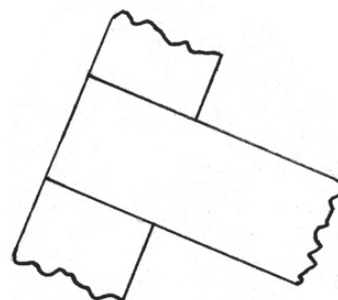
Make sure the timber stays in place as it is nailed.

The pieces can:

Move apart



Join at the wrong angle

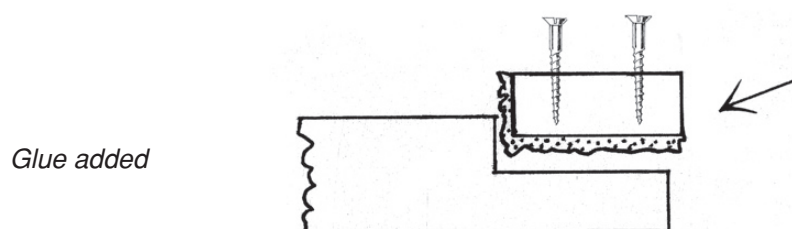
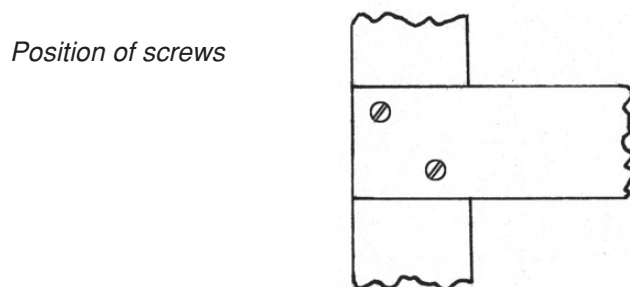
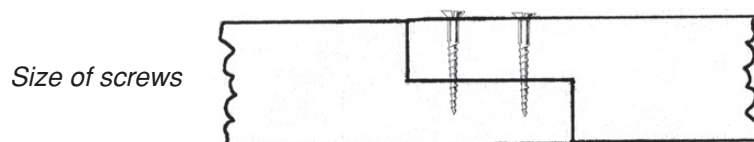


Step 3b Fix the joint with screws

The length of the screw should be just less than the two thicknesses of timber.

Glue the joint for extra strength, if needed.

Drill holes for screws through the top piece of timber



Things to check

Make sure the timber stays in place while you fix the joint

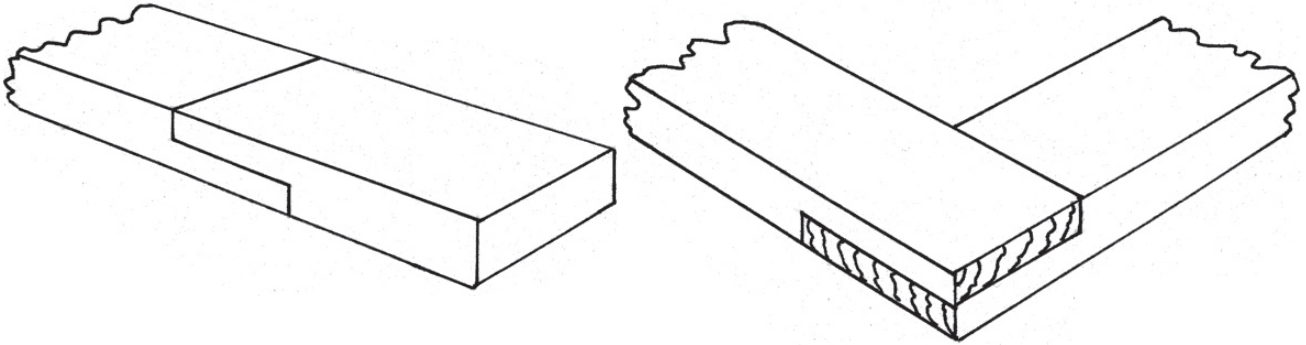
Take care not to split the wood with the screws.

Ask questions about anything you do not understand.

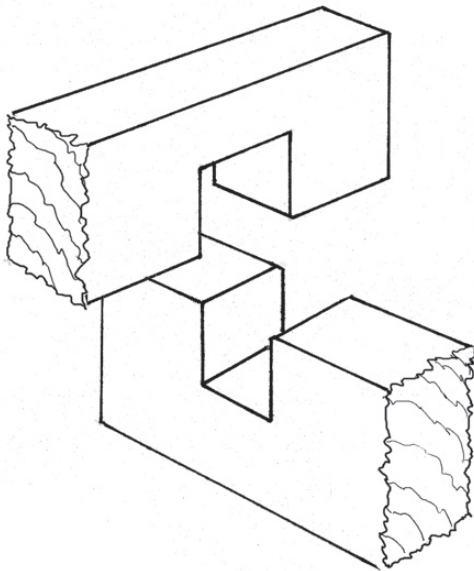
Activity

Use scrap pieces of timber

1. Make nailed lap joints like each of these:



2. Make a crossed lap joint — and use screws to fix it.



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