

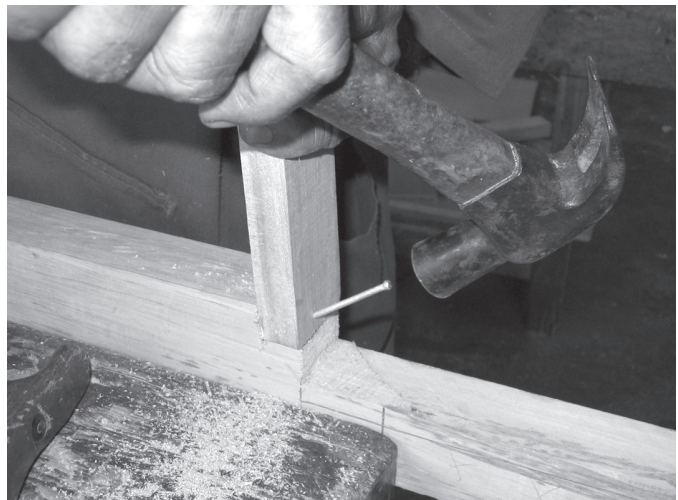
# Nails

This worksheet is about nails used to fix timber together. It tells you about the different types of nails and how to use them.

## What you will learn

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

- Choose the correct nail for a job.
- Drive nails safely and correctly.



### Note

The worksheet on **Hammers** shows you how to start and drive a nail into timber.

Look at it again before you start this worksheet.

## Things you need before you start

### Materials

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

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### Tools or equipment

Measuring and marking tools

Hammer

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### Course resources

Course video

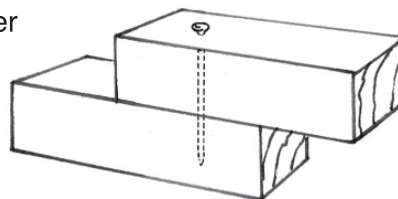
Video player

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# What are nails used for?

Nails are used to fix timber to:

other timber



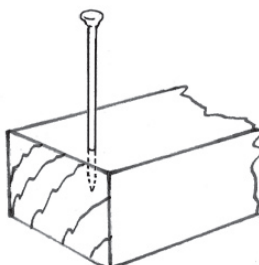
## Nails are:

- quick and easy to use
- strong
- cheap

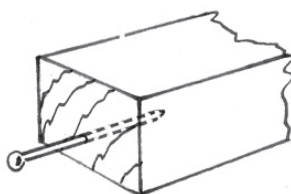
## How do they work?

The cells of the wood grip the shaft of the nail.

Grip best across the grain

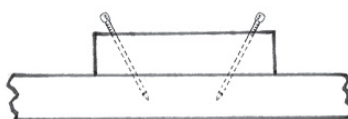


Pull out more easily in end grain

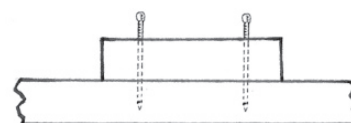


Angled nails make strongest joints

This is called "skew-nailing"

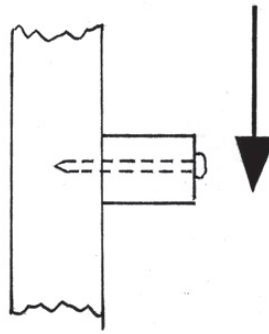


*Strong*

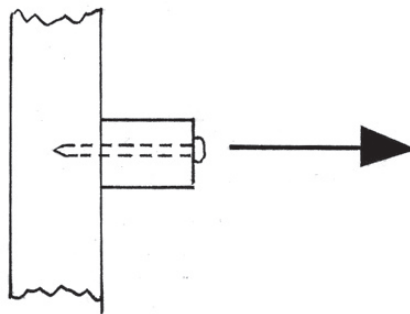


*Weaker*

Nails are good when loads or forces try to make one piece slide against the other

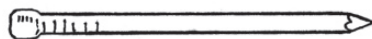


Nails are not good when forces try to pull the joint apart — the nail pulls out easily.



## What is a nail?

A nail is a piece of strong wire with a point on one end and a head at the other end. Nails come in all sorts of shapes and sizes.



Some examples are:

**Flat head**



**Diamond head**



**Jolt head**

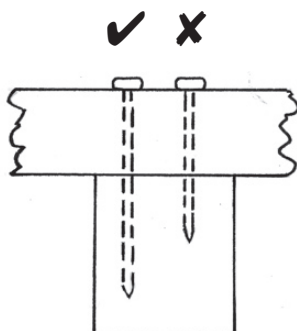


Jolt head and diamond head nails are the most common types used in construction work as the head goes in level with the timber surface.

Most nails are made of steel. They are usually zinc plated or galvanized for construction work. This helps to stop them going rusty.

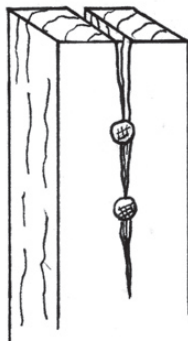
## Choosing the right size of nail

The best length for a nail is  $\frac{3}{4}$  the thickness of the two pieces of timber — at least half of the nail should go into the second piece of timber.

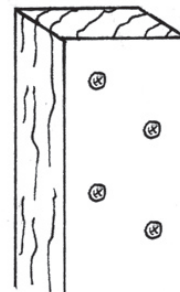


## Nails can split timber if:

- They are too close to the end of the timber
- They are nailed too close together



Stagger nails along the timber.



**Ask questions about anything you do not understand.**

## Safety tips for hammers and nails

- Think — if the hammer slips — where will it go ?
- Keep your fingers out of the way once you have a nail started
- Never try to hit nails too hard — you are likely to miss the nail — or bend it

### Activity

1. Find out what types and sizes of nails you have available.
2. Nail together some scrap timber pieces.
  - Choose the correct length of nail.
  - Drive a nail in straight through two pieces
  - Skew (angle) nail two other pieces together.
3. Then pull the pieces apart again. Which type of nailing is stronger?

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