

# Hand drills

This worksheet is about drills that you use to make small holes in timber.



## What you will learn

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

- Say what drills are used for.
- Use a hand drill correctly.

## Things you need before you start

### Materials

You will need some scrap timber to work on.

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### Tools or equipment

Hand drill

Drill bits

Clamp or vice

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### Course resources

Course video. Video player

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## Introduction

Hand drills are used to make small holes, usually for screws or nails

Drill bits can be changed to make different sized holes.

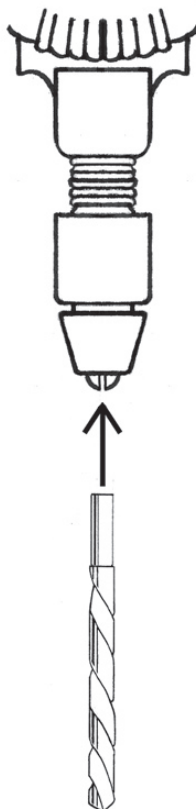
Drills make holes quickly and do not split the wood.

## What is a hand drill?

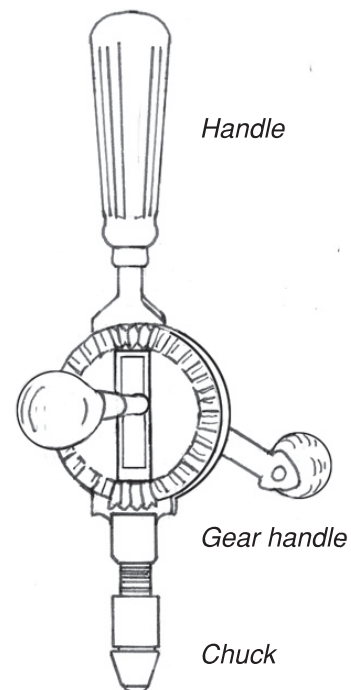
Holes are made in timber by turning a specially sharpened piece of round metal called a drill bit. The bit cuts into the timber and takes out the wood to make a hole.

In a hand-drill, the bit is gripped tightly by a chuck.

The chuck is turned by a handle on a gear wheel.



The drill bits come in different sizes so that you can make the size of hole you need. You can unscrew the chuck by hand to change the drill bits.



## What is a hand drill used for?

A hand drill is used to make small holes in metal as well as in timber.

The holes are usually for screws and nails to go into. Most hand drills can make holes with drill bits up to 7mm or 8mm across.

The drill bit should be slightly smaller than the nail or screw you want to put in.

# How do I use a hand drill?

## Step 1

Decide what size hole you want to make. Put the correct size drill bit into the chuck and tighten it.

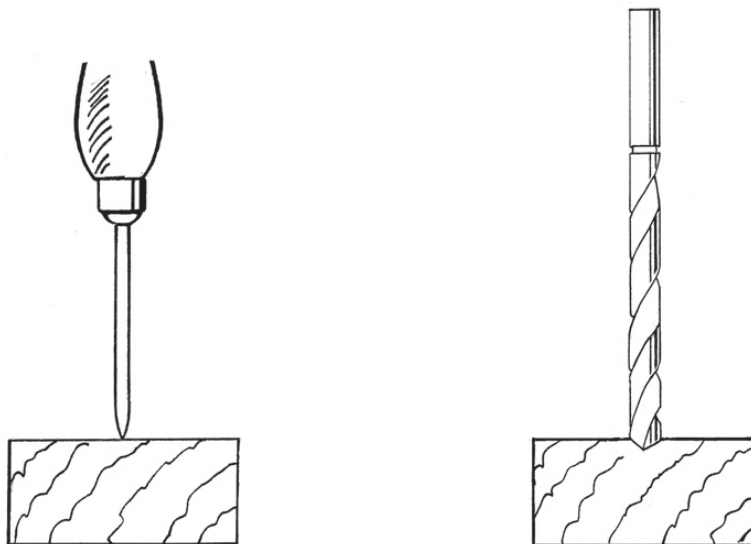
Make sure your timber will not move as you drill – hold loose pieces with a clamp or vice.

Use a pencil to mark the centre of where you want the hole to be.

## Step 2

Make a small dent in the timber on your pencil mark. Use a sharp tool or the point of a screw or nail to do this.

Put the tip of the drill bit in the dent. The dent will help to stop the bit moving off your mark.



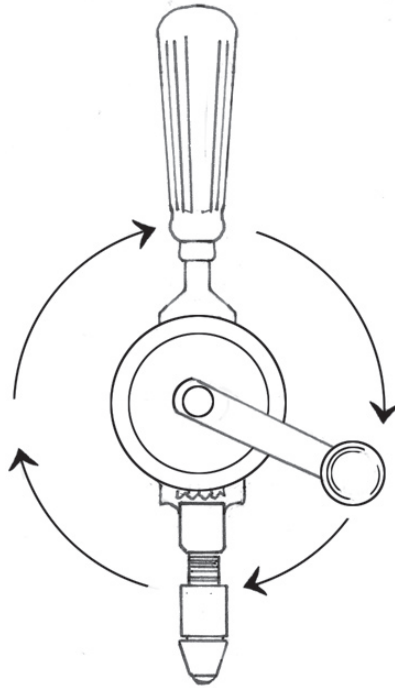
### Step 3

Hold the drill in one hand.

Don't put too much pressure on the drill. The bits are small and they can break easily.

Keep the drill steady and upright.

Use your other hand to turn the handle in a clockwise direction — see picture



The bit will drill down into the timber as you turn the handle.

### Step 4

When you finish drilling the hole, keep turning the handle as you slowly pull the drill out.

The bit may break if you pull it out too quickly or if you pull at an angle.

### Things to check:

- If you let the drill 'wobble' while turning, the hole will be too big. Try and keep it steady.
- If the bit does not go into the timber, you may be turning the handle the wrong way. The bit works in one direction only.
- If the bit sticks in the timber and does not turn, the bit may be loose in the chuck.
- If you are making a hole all the way through timber, check what is on the other side before you start. You could put some scrap timber underneath.

# Safety tips for drills

- The drill and bit can slip off your mark and damage the timber. Hold it tight.
- Small drill bits break easily and the broken pieces are sharp.
- The end of the drill bit can get hot when you are drilling — don't touch!
- Hold loose timber firmly in place — use a vice or a clamp.
- Think about what the drill will go into on the other side of your timber — make sure it is not a person, an electric cable, a water pipe or something else important.

## Activity

1. Find out what drill and bits you have available. What sort of jobs can you do with them?
2. Practise changing the drill bit and tightening the chuck
3. Practise marking and drilling holes of different sizes and depths
4. Keep practising !

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