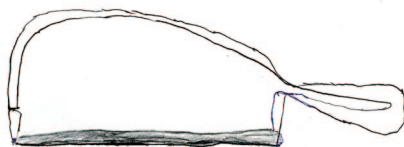


& THE ABC OF TOOLS

Welcome to the ABC of Tools.



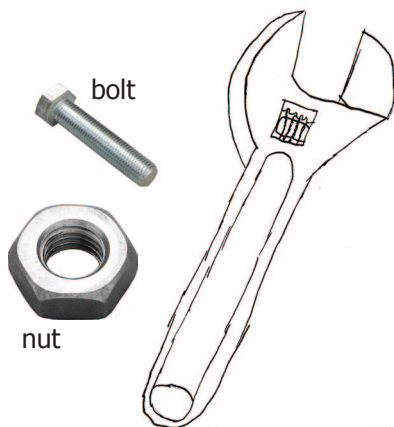
The ABC of Tools provides pupils and students of all ages with a handy visual reference to some of the most common hand tools.

This pdf has been designed to be printed out and then displayed either as a concertina/frieze for the class room wall, or laminated and assembled into a booklet via a hole punch and tie.

A big thank you to the pupils at **Radnor Primary School** who produced the images in this resource, and to **Louise Shenstone** who facilitated the drawings and to **Rhondda Cynon Taff Community Arts (RCTCA)**, a professional community arts organisation and registered charity (702128).
<http://www.rctca.org.uk>



& THE ABC OF TOOLS



An **adjustable spanner** is used to tighten or loosen nuts or bolts.

The "jaws" of the spanner can be closed or opened via the screw mechanism.

Tighten or loosen the jaws so that they "just fit" the nut or bolt, before using the spanner as a lever to tighten the nut or bolt.

Other terms: A spanner is also called a wrench.

adjustable
spanner

An **awl** is used to make holes in cloth, leather, cardboard etc, or used to make a pilot hole in wood.

To use:

Make sure you have something under the material in which you are making a hole, to absorb the very sharp end of the awl. You could use a wad of cardboard or dense sponge.

Use a twisting action to make the hole, rather than stabbing the material. Avoid body parts!



awl



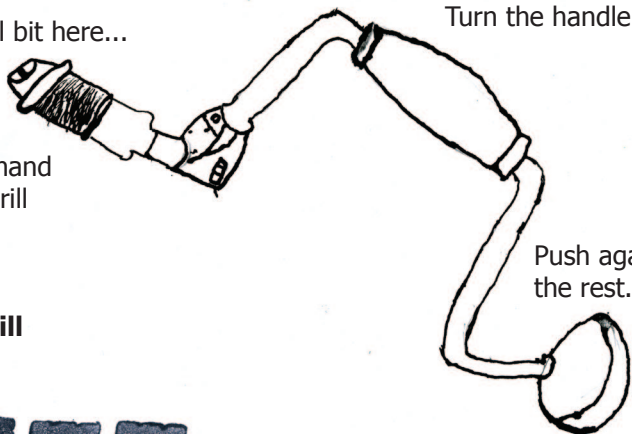
& THE ABC OF TOOLS

Insert the drill bit here...

Turn the handle...

A **brace** is a hand drill used to drill small holes in wood.

Use with a **drill bit**.



Push against the rest...

b r a c e

b r a d a w l

A **bradawl** is used to make a pilot hole in wood or similar material, so that you can insert a screw or nail. Bradawls are very sharp! Use a twisting motion, do not stab, and point away from all body parts when in use.





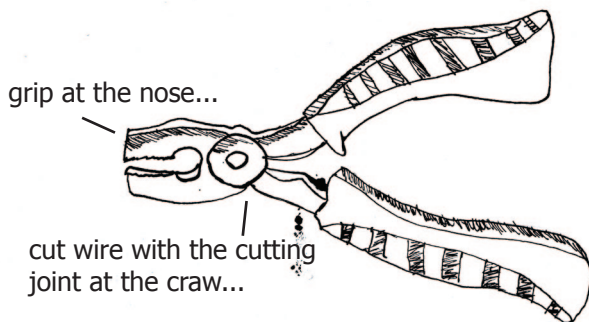
& THE ABC OF TOOLS

p l i e r s

Pliers are used for cutting, bending or compressing materials - usually wire.

Snub or flat-nosed pliers can grip at their nose, and also usually have a cutting joint in their "craw".

To cut wire, insert it into their craw and pull the handles together. To bend or compress wire, use the nose end.



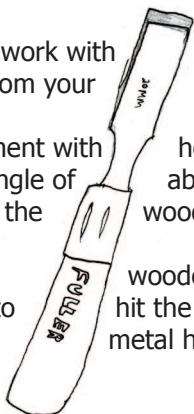
Flat chisels are used to cut away wood.



Always work with away from your

Experiment with at an angle of against the

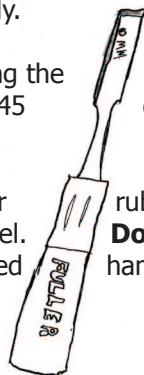
Use a mallet to use a



the chisel pointing body.

holding the about 45 wood.

wooden or hit the chisel. metal headed



chisel degrees

rubber **Don't** hammer.

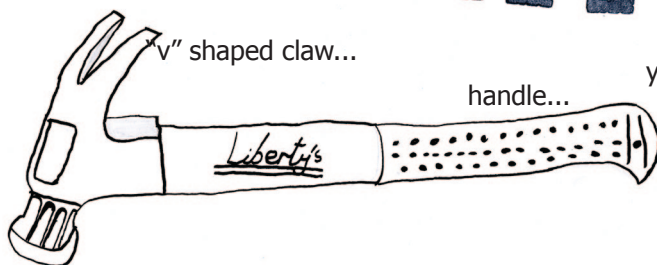
c h i s e l s



& THE ABC OF TOOLS

c l a w

h a m m e r

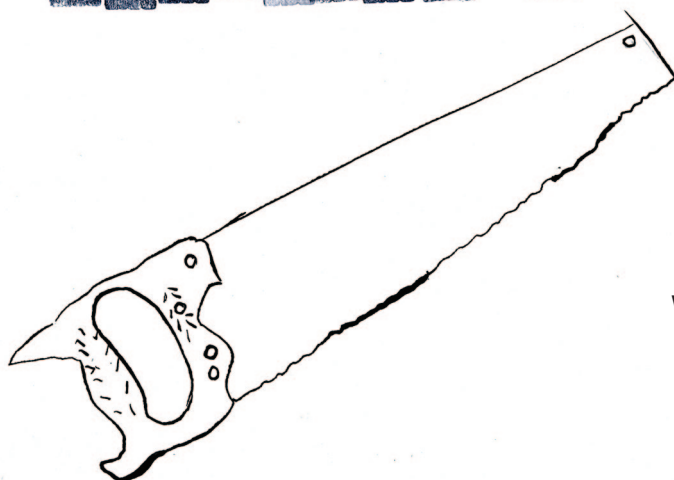


A **claw hammer** has two purposes: one to hit nails into wood, and two to remove nails from wood.

When hammering, hold the hammer at the handle end and swing your arm, not your wrist.

To remove nails, insert the end of the (raised) nail into the "v" shape of the claw and lever upwards.

c r o s s c u t s a w



A **cross-cut saw** is designed to cut across the grain of the wood or timber.

Most saws are designed to cut on the push stroke.

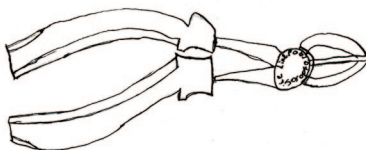
When sawing, make sure the wood is secured, and let the saw "do the work".

& THE ABC OF TOOLS

Cutting pliers are also known as diagonal pliers or wire cutters.

Use the end of the pliers to cut through wire, chicken wire or thin sheet metal.

c u t t i n g



p l i e r s

When drilling larger holes, drill a small pilot hole first to make the job easier

d r i l l b i t



Drill bits are inserted into hand or electric drills to drill holes in wood or stone.

Make sure all hair and loose clothes are tied back before drilling.



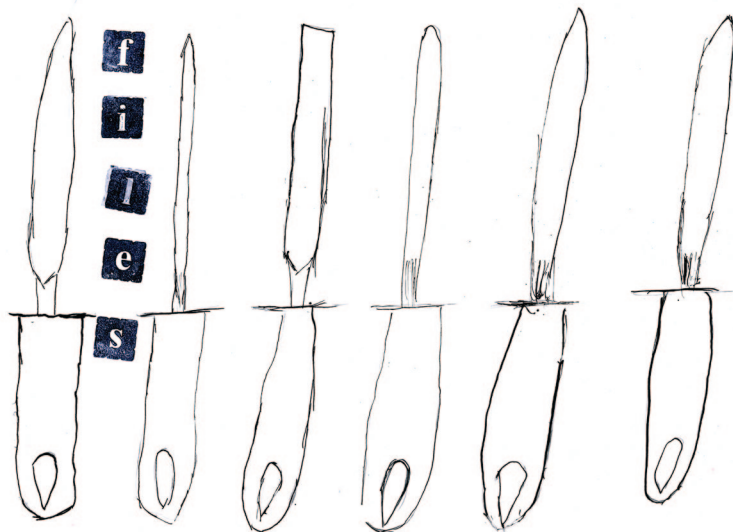
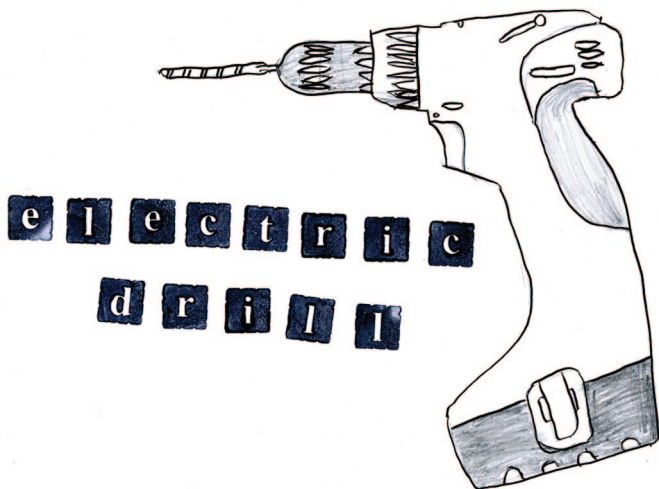


& THE ABC OF TOOLS

Take care when using **electric drills**! Tie back all hair and loose clothes.

When making holes in stone, make sure the drill is on "hammer".

Drills can also be used to hold sanding Attachments.



Files or rasps are usually made from steel and are used to file away excess wood, or to smooth a surface.

The "cut" of a file refers to how fine the teeth are.

Push away from your body to use. Where a mask if the dust produced is fine.

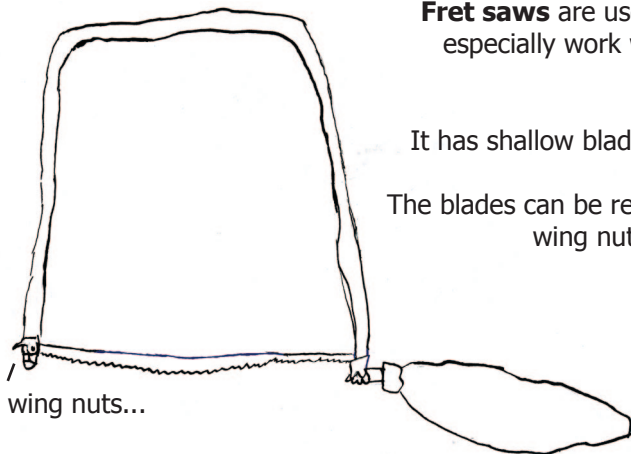


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Fret saws are used to cut intricate work, especially work which incorporates tight curves.

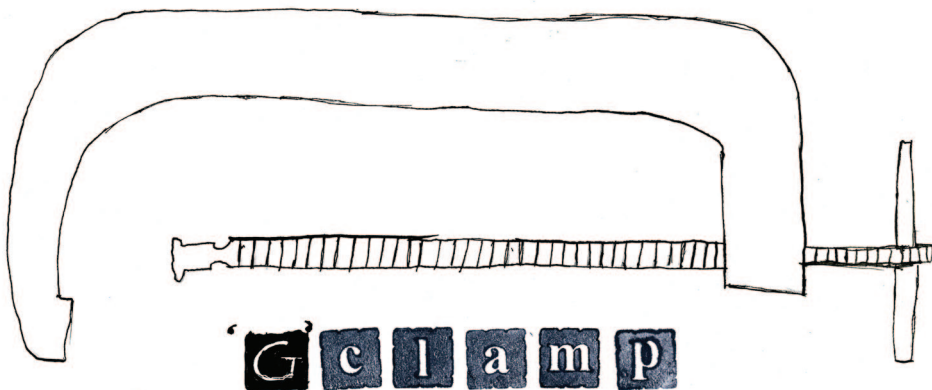
It has shallow blades with extra fine teeth.

The blades can be replaced by loosening the wing nuts which hold it in place.



wing nuts...

f r e t s a w



G c l a m p

Clamps are used to hold wood in place whilst it is drilled, sawn or glued.

& THE ABC OF TOOLS

g l u e g u n

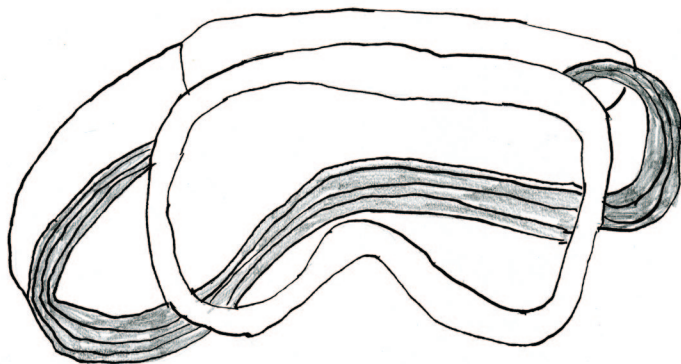
glue pellet...



Glue guns are useful for making strong, quick joints. Use glue guns to join wood or cardboard.

Hot or cold glue guns both need to be plugged in. The heat melts the glue pellet, and a "trigger" is squeezed by hand to push the hot or warm glue out. The glue sets as it cools.

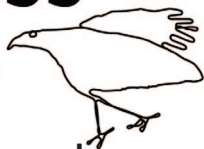
Take care! The end of the glue gun gets hot, as does the melted glue.



Safety goggle protect eyes from fine dust and sharp objects.

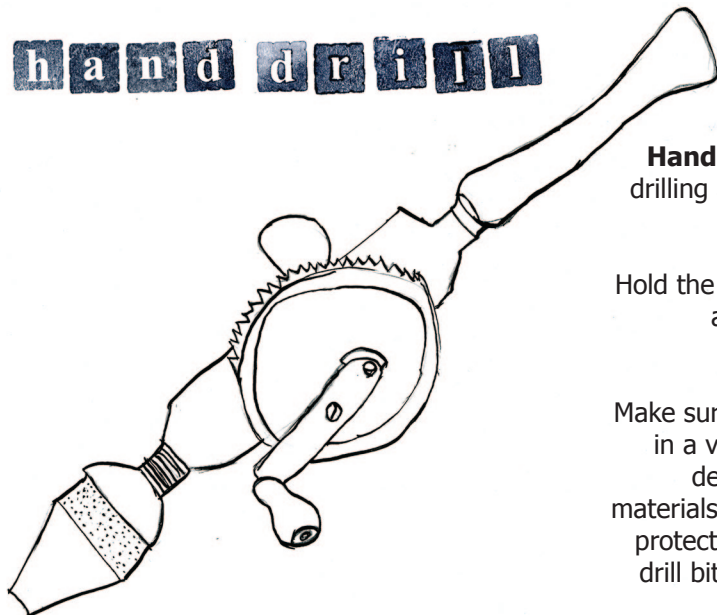
Consider wearing a dust mask too.

g o g g l e s



& THE ABC OF TOOLS

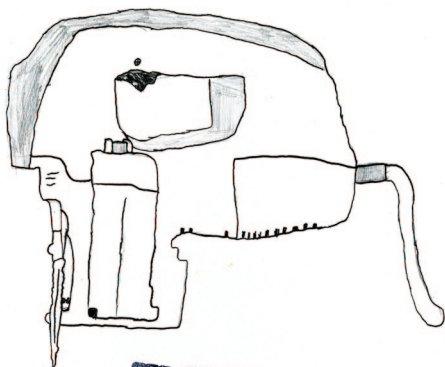
h a n d d r i l l



Hand Drills are used for drilling a variety of sizes of holes.

Hold the hand drill vertically and turn the handle clockwise.

Make sure your work is held in a vice or clamped to a desk. Put some spare materials under the wood to protect the desk when the drill bit works through the wood.



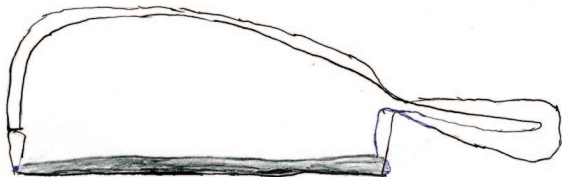
j i g s a w

Jigsaws are used to cut free form shapes out of wood.

Jig saw blades are very sharp and as the jig saw is powered, the jigsaw should be handled with extreme care. All wood should be secured, and goggles worn.



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j u n i o r h a c k s a w

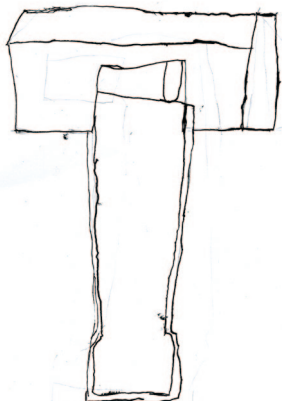
Hack saws are used for cutting wood or metal.

The blade is screwed in place and held in tension - and the blade can be positioned to allow the saw to cut on the push or pull stroke.

Blades are quite brittle and can twist if the saw is not used at right angles to the material being cut.

Wooden mallets are used to knock pieces of wood together, or to drive home dowel.

A wooden mallets will not deform the end of a metal tool, as a metal hammer wood, but it also reduces the amount of force which can be applied.



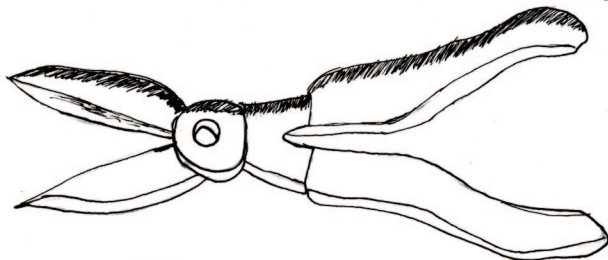
w o o d e n
m a l l e t

& THE ABC OF TOOLS

n e e d l e

n o s e

Also known as long nosed, pinch or snipe pliers, **needle nose pliers** are used for bending and cutting.



p l i e r s

Due to their shape they can be used with great accuracy and precision. Their long "fingers" mean they can reach into small spaces.

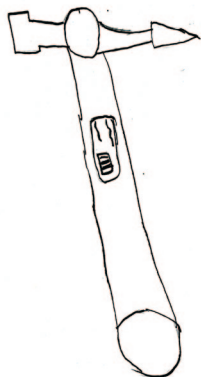


P h i l l i p s s c r e w
d r i v e r

The **Phillips screwdriver** is used with cross head screws and allows the user to more easily drive the screw home.

& THE ABC OF TOOLS

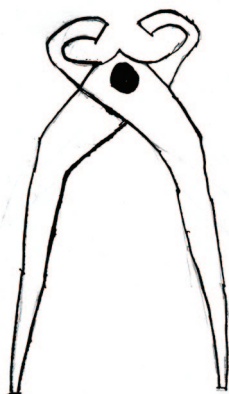
pin hammer



The **Pin Hammer** is used for light joinery work.

Its' light weight makes it suitable for children to use with greater accuracy than a heavier hammer.

As with all hammers, hold at the handle, away from the metal head, and swing from the shoulder/elbow rather than wrist.



Pincers are levers. The shape of the pincer is such that the user can apply pressure near the end of the tool, i.e. to apply pressure to a nail.

pincers

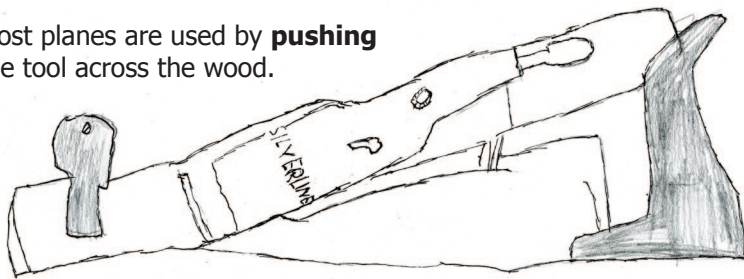
& THE ABC OF TOOLS

w o o d

p l a n e

A **plane** is a tool used for shaping, or smoothing, wood.

Most planes are used by **pushing** the tool across the wood.



p l u m b b o b

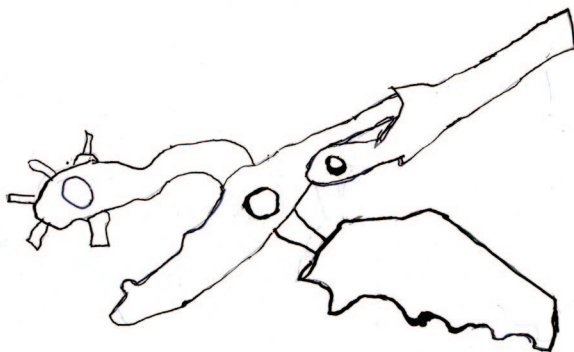


A **plumb bob** is a weight attached to a string which is used to get a vertical reference.

& THE ABC OF TOOLS

p u n c h

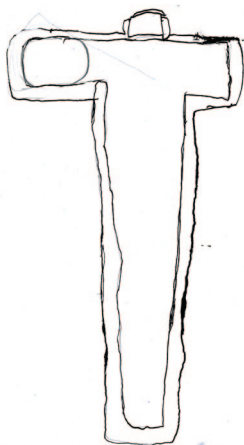
p l i e r



Punch pliers

are used to punch holes in leather or thin gauge metal sheet.

The cog within revolving punch pliers allows holes to be made at regular intervals.



r u b b e r

m a l l e t

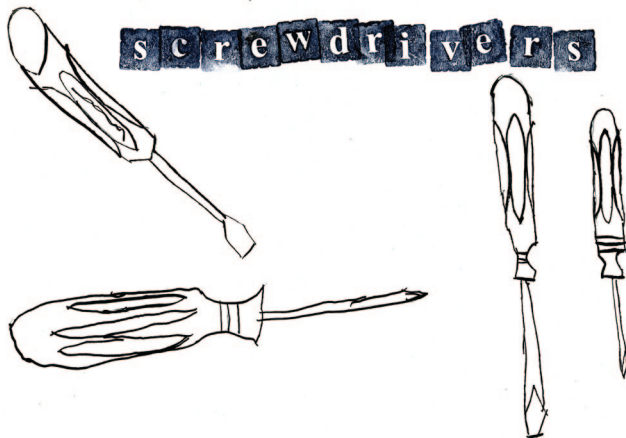
Rubber mallets are used when less force or a softer blow is needed than with a regular wooden mallet.

Rubber mallets don't leave marks and can be used on plaster board as well as wood.



& THE ABC OF TOOLS

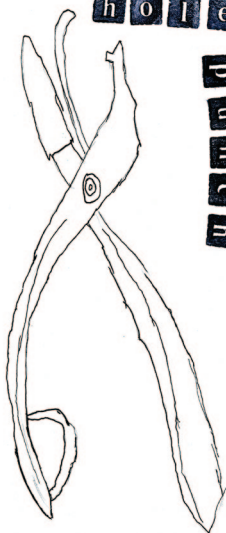
screwdrivers



Screwdrivers are used to drive metal screws.

Turn clockwise to tighten,
anti-clockwise to loosen.

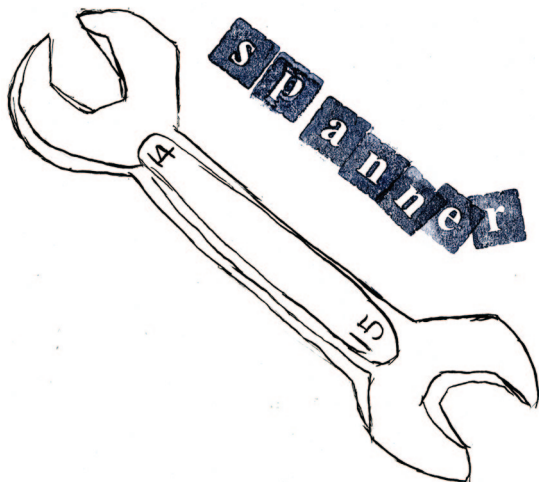
single hole punch



Single hole punch -
used to punch a single
hole in leather or thin
metal sheet.



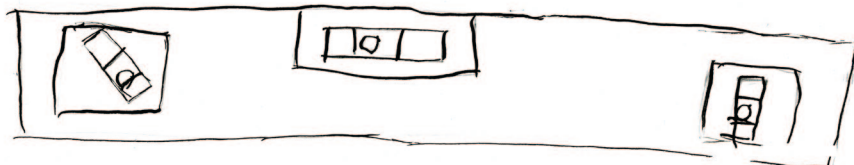
& THE ABC OF TOOLS



A **spanner** is a lever which enables nuts and bolts to be turned more easily.

Spanners come in a variety of sizes to fit the appropriate nut or bolt.

s p i r i t



Spirit levels are used to check whether a surface is horizontal or vertical. The bubble within the window should rest in the centre of the appropriate viewing point.

l e v e l



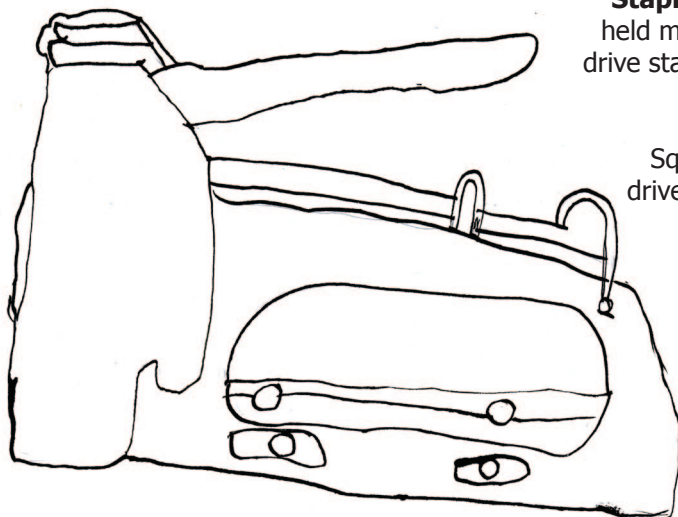
& THE ABC OF TOOLS



Stanley knives are designed to be lightweight, easy to use and with replaceable blades.

s t a n l e y k n i f e

Take care! Ensure fingers are out of the way, cut away from your body, and use a cutting mat to protect the surface



Staple guns are a hand held machine designed to drive staples through wood or plastic.

Squeezing the trigger drives the staple home.

Take care!
Do not aim near body parts

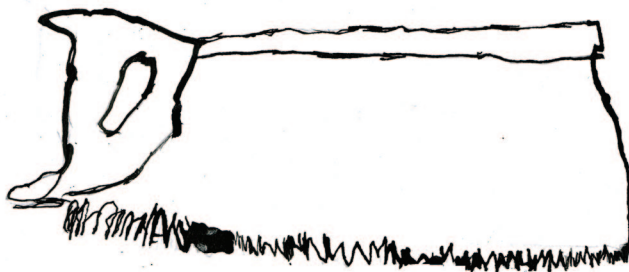
s t a p l e g u n



& THE ABC OF TOOLS

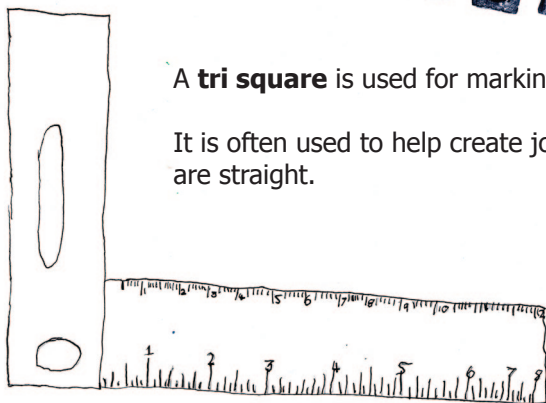
t e n o n s a w

A **tenon saw** has a stiffen rib allowing for more controlled, precise cutting than a cross cut saw.



Because of the stiffened rib tenon saws can cut to a limited depth.

t r i s q u a r e

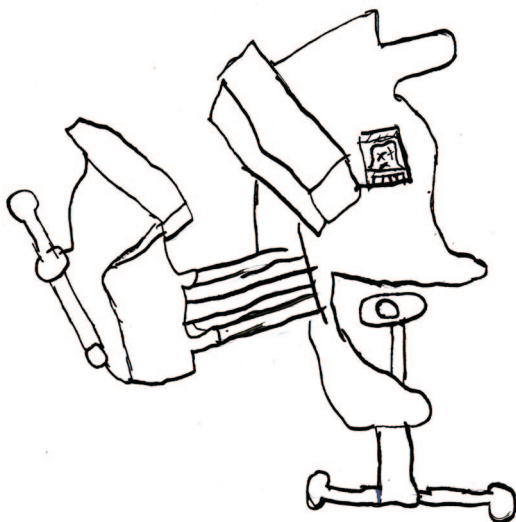


A **tri square** is used for marking and measuring wood.

It is often used to help create joints in wood and to test if they are straight.



& THE ABC OF TOOLS



Vices are used for holding and clamping materials whilst it is being sawn, shaped or drilled.

A bench vice has flat parallel jaws which hold the material in place. One jaw is usually fixed, while the other moves, via a screw, to tighten against the material.

v i c e