



safety

1


When you start working with tools, it's important to make sure you do so in a safe manner. **And always under supervision of an adult!**

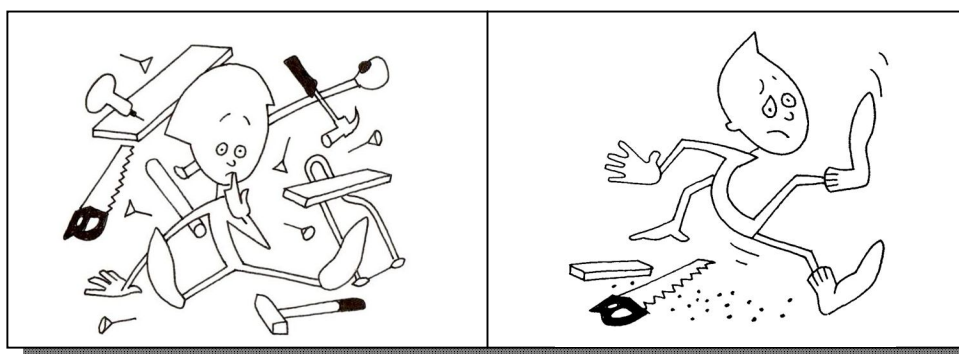
work area

- 1.** Keep your work area clean and tidy. Make sure you have enough light, so you can see what you're doing.
- 2.** Make sure you work on a firm surface. The table you use should have a good height, so that you can work in a good position.



tools

- 1.** Tools are not toys. Use them carefully, so that you don't injure yourself. Use them only for the purpose for which they were intended.
- 2.** Always read first how a tool is supposed to be used, and always take note of the yellow triangles:  Ask for help if you need it. Often not everything goes precisely as you'd like it to right away. That's completely normal. The more often you've used a tool, the better you'll be able to use it.



1

safety

By observing certain safety measures, you can help ensure that nothing goes wrong



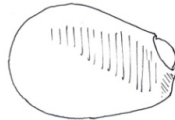
What can you yourself do?

- 1.** When you start working with your tools, make sure you're calm, so that you can concentrate properly.
- 2.** Think in advance about what tools you'll be needing and how you're going to start.
- 3.** Put on clothes that won't get in your way – ones without parts that hang loosely, such as long wide sleeves or the cord of a hood. If you have long hair put it in a ponytail.
- 4.** Wear shoes, and don't walk too fast – otherwise you could step on nails or other sharp objects that could be on the floor, or you could slip on sawdust or a cloth. **Never run in the work space!**
- 5.** Use protective aids, such as:
 - safety goggles, when drilling or doing other carpentry work
 - the nail holder, when doing carpentry work
 - the saw guide, when sawing
- 6.** Think about the position you're working in. Make sure you have good access to what you're working on. Hold your tools firmly, the way you're supposed to.
- 7.** Put away your tools and materials right away if you won't be needing them again. That way, you'll always be able to find them, and there's no risk that they'll fall on the floor.

measuring tape

2

With a measuring tape, you can measure how big something is. This is called taking a measurement. You can also use a measuring tape to mark off how big something needs to be. It consists of a tape with centimetres and millimetres on it. The tape is rolled up in its case. These are the parts of a measuring tape:



case



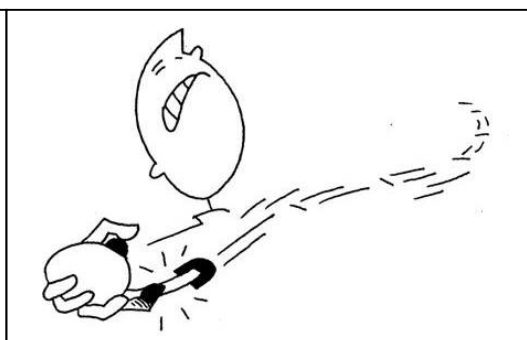
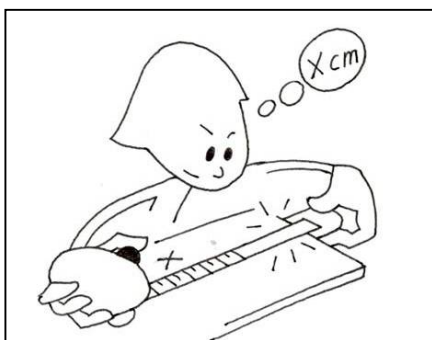
tape



tab

How do you use it?

- 1.** To pull the measuring tape out of its case, pull on its little yellow tab until the tape is slightly longer than you need.
- 2.** Hold the first line of the tape precisely at the beginning of what you want to measure. At the other end, read the number of centimetres, or draw a line by the measurement you want to have. This is called marking off measurements.
- 3.** Finished? Hold the tape by the tab, press on the orange button, and guide the tape carefully back into its case.



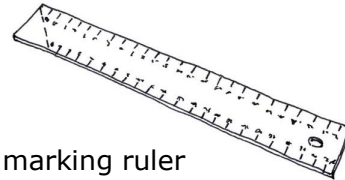
2

carpenter's square

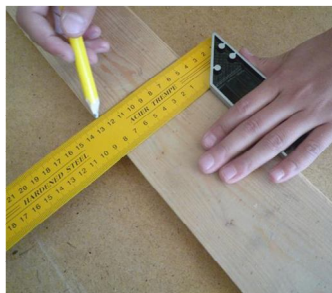
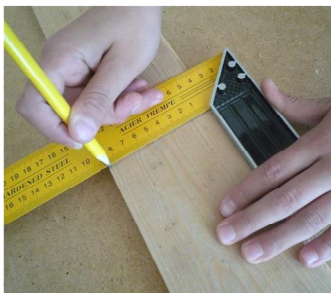
A carpenter's square consists of a block and a metal ruler at right angles to each other. A carpenter's square is used for drawing a line at right angle to an edge. You can also use it to check if an angle is really a right angle (90°). These are the parts of a carpenter's square:



block

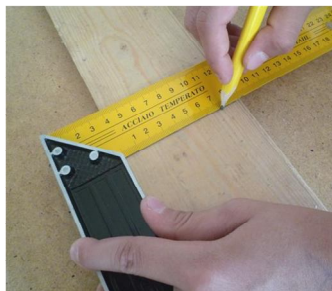


marking ruler



How do you use it?

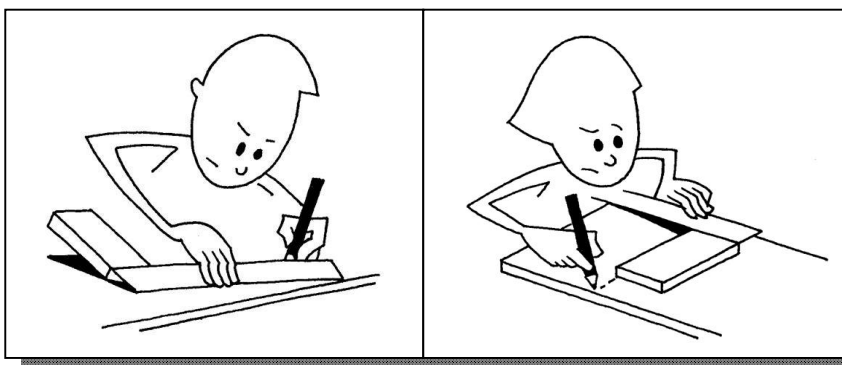
1. Place the block against the edge of what you're working on. Have you found the right spot? Now, draw a perpendicular line.



2. You can also use the carpenter square to mark off a new measurement or to measure a distance from the edge.



3. Place the carpenter square with the block on the horizontal board, with the ruler on the side intended for the perpendicular board. Now hold the board against it and mount it in a perpendicular position.



carpenter's pencil

3

A carpenter's pencil is used to mark off measurements and draw lines. Because of its shape, it won't roll away when it's on a table. It also has a wide, flat point, that won't break off easily. These are the parts of the carpenter's pencil:



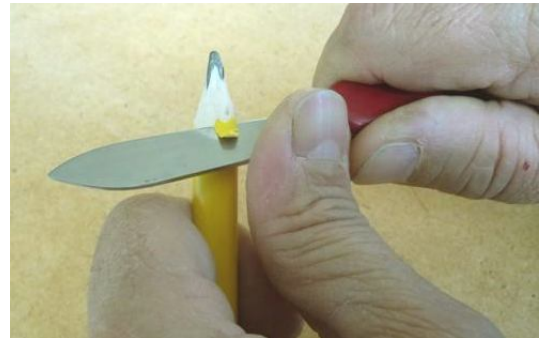
graphite point



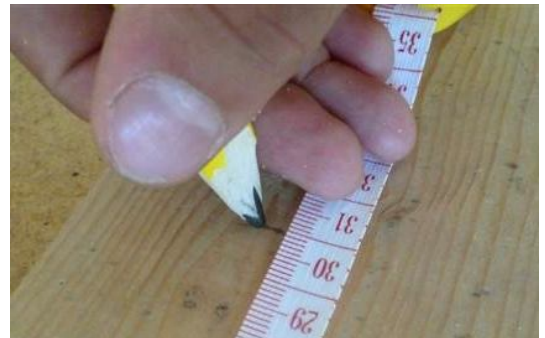
wood

How do you use it?

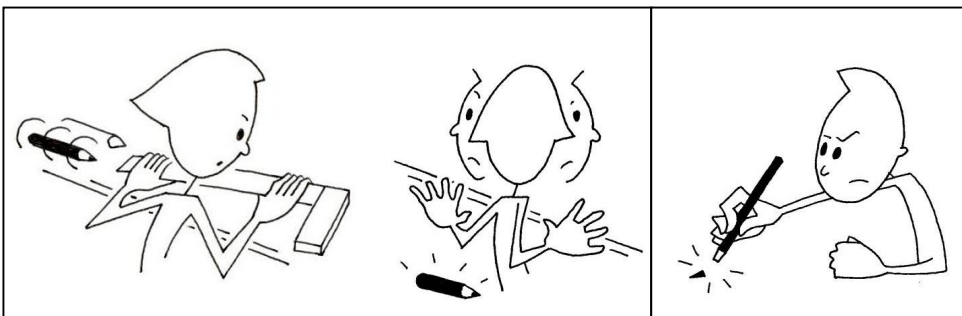
1. Have a grown-up sharpen the pencil with a sharp knife. Don't do this yourself! Then you can use it just as you would a normal pencil.



2. Make a mark with the pencil at the spot you've measured off.



3. Place the set square on the wood. Check how many inches you need to mark off and draw a line along the ruler.

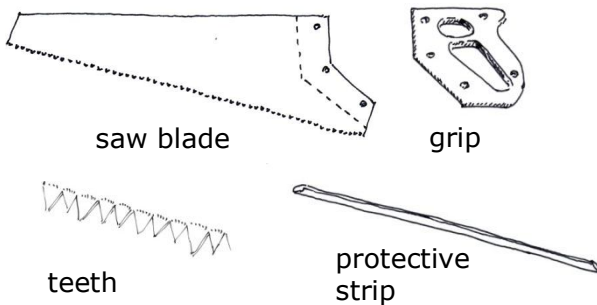


handsaw

4

A hand saw can be used to saw off a part of a board made of wood or a wood-like material such as MDF.

These are the parts of a hand saw:



The saw blade has extremely sharp teeth!

Always put the protective strip back on the blade immediately after using the saw. Always use the guide until you're really good at sawing, and until you have the permission of a grown-up to saw without it.

Never swing the saw around and never use it in fights!

How do you use it?

- 1.** Use the saw with the grip that fits your hand better:
 - * red for small hands
 - * yellow for larger hands
- 2.** This is how to hold the saw:
 - * your forefinger in the upper hole
 - * the other fingers in the lower hole
- 3.** Position the saw at an angle with the wood and draw it calmly back and forth over the lines you've drawn in pencil. Use the entire length of the saw. Don't remove the saw until the job is done. Don't use force, and don't chop – let the saw work *for* you.



4

sawguide

The saw guide prevents you from sawing into your fingers and will help you to saw in a straight line. These are the parts of the saw guide:



When you start out, you'll need to be supervised by a grown-up to do this.



holder with brace
and 2 fastening points



screw knob

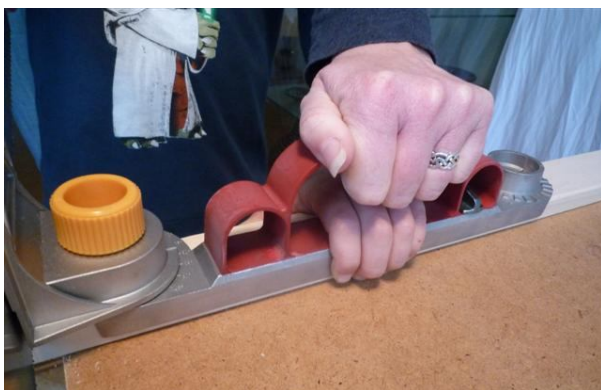


saw clamp



How do you use it?

1. Place the saw guide on the piece of wood you are going to saw. Place your hand on top of the holder and press it against the wood. You could also first fasten the wood and the guide to the shop bench using glue clamps.
2. With your other hand, shove the saw into the saw clamp. Hold the saw at an angle and move it calmly back and forth through the wood. The brace above your hand is large enough for a grown-up to help you to hold the saw guide firmly.
3. After a while, the saw will drop out of the saw clamp by itself. The cut you've made with the saw will then already be long enough for your saw automatically to be guided further so that you safely can go on sawing without the saw guide.



saw guide

adjustable saw clamp

4



The saw clamp can be adjusted by means of the yellow knob.

Left-handed?

1. You can use the saw guide regardless whether you saw with your right hand or your left hand.
2. Turn the yellow knob until it's loose. Place the saw clamp on the other side. Turn the knob until it's tight again. Important: **Is the clamp in the right position?**



At an angle:

3. You can also saw at an angle while using the saw guide. This is called: mitre sawing.
4. Turn the yellow knob until it's loose. Lift the saw clamp a bit and turn it until it's in the position you want. Turn the yellow knob until it's tight again.

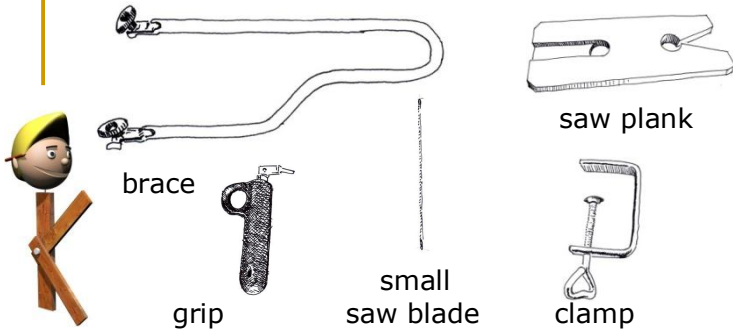


fretsaw

5

You can use the fretsaw to saw all kinds of shapes in thin wood, plywood or MDF. This is done with the help of the saw plank.

These are the parts of the fret saw:



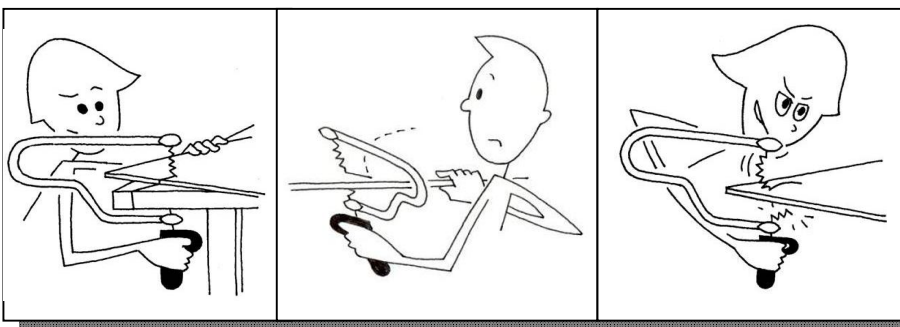
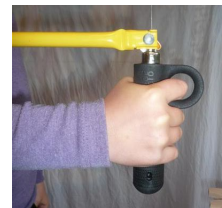
The teeth of a fretsaw are sharp.

Ask a grown-up to teach you how to make the right motion for using the fretsaw. Making curves is the most difficult part. Because of the tension in the blade, it can break if you make a curve without taking proper care. Use the drill to make a hole to put your saw blade through when you want to start in the middle of the wood.



How do you use it?

1. Screw the saw plank to the edge of your work table.
2. Hold the fretsaw by the grip, with your forefinger in its eye. Place your project on the saw-plank. Try always to keep the spot where you're sawing over the round hole or the 'v' of the saw plank. Keep your free hand away from the blade.
3. Make sure you're sitting properly. With a motion starting from your elbow, saw calmly up and down with a bit of forward pressure. Hold the saw upright beside your arm. Always steer with the wood, never with the saw. In other words, you steer with the hand that's not sawing. Keep on sawing making a curve otherwise your saw blade will break.

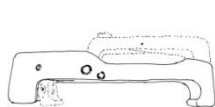


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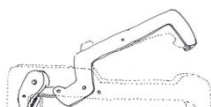
fretsaw tensioner

The fretsaw tensioner is used to place a new saw blade in the brace. The tensioner brings the two ends of the brace toward each other in a way that makes it easy for you to install a saw blade yourself. When you loosen the tensioner again, the fretsaw blade will have precisely the right tension to saw properly.

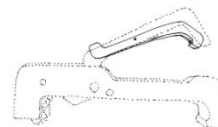
These are the parts of the tensioner:



holder



clamp system

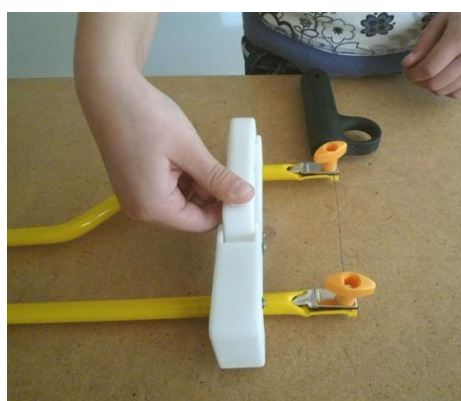


interlock



How do you use it?

- 1.** Place the fretsaw brace on the table. The place for the tensioner is indicated on the brace. To open the tensioner, press the button and shove it onto the fretsaw brace.
- 2.** Lower the lever until the tensioner makes a click.
- 3.** Loosen the yellow screw clamps and remove the broken saw blade. Install a new blade, with its teeth pointing downward toward the handle. Tighten the clamps again.
- 4.** To loosen spanner, press the button with your finger. Throw the broken saw blade in the waste bin in the workspace.

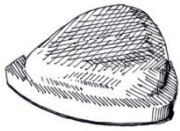


sanding block

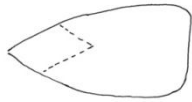
6

You can use the sanding block to sand off splinters from the pieces of wood you've sawn. You can also use it to make the surfaces and sides of pieces of wood smooth.

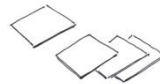
These are the parts of the sanding block:



sanding block



large pieces
of sandpaper



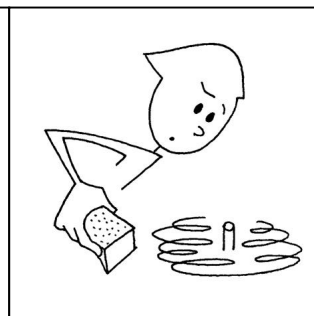
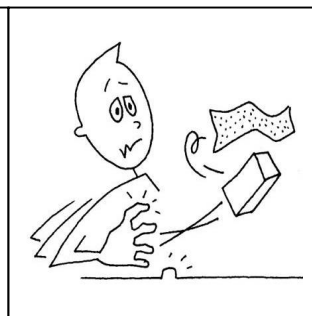
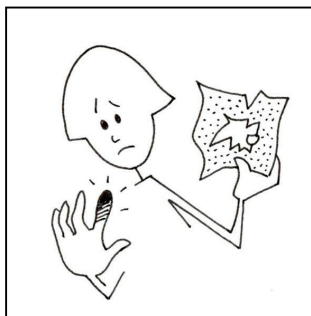
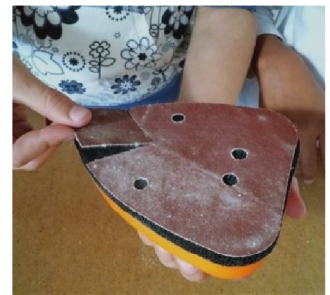
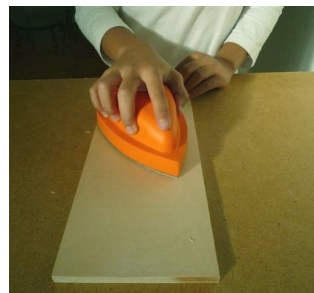
pointy pieces
of sandpaper



Sawing usually leaves splinters behind. Be sure not to rub the unsanded wood with your hands.

How do you use it?

- 1.** You can attach the sandpaper to the sanding block by means of Velcro strips. Try doing this as neatly as possible. Don't discard the small pieces that remain.
- 2.** If you go back and forth over the wood with the sanding block, employing a bit of pressure, the wood will get smoother and smoother. You can use the pointy tip to get into difficult spots.
- 3.** The sandpaper will remain usable for a long time. If it seems to be getting weaker, just knock the dust off with the palm of your hand. The tip wears the fastest – you can replace it separately.



electric drill

7

With the drill, you can make a hole in a piece of wood for a nail or screw.

A drill can only be used for wood and soft materials.

These are the parts of a drill:



drill



bits

A drill is not a toy!

To use a drill you will need a grown-up to supervise you and explain the safety instructions to you. If used improperly, power tools can give electric shocks, or cause short-circuiting, or even fires! The rotating bit can also be dangerous. So make sure to be careful while drilling.

How do you use it?

1. First, some information about the drill:

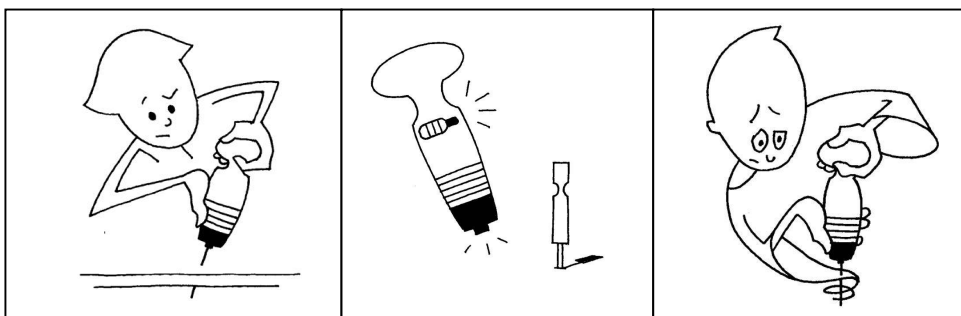
This drill is **battery-operated**. The battery has to be recharged. Make sure it is recharged before you use it (see the card for the **recharger**).

The **black button** is for setting the **direction** in which the bit rotates.

- * **forward** is for drilling.
- * **off** is for when you're not drilling.
- * **reverse** is for removing the drill after you have made a hole. If you don't do this, the bit will stay in the wood.

The **yellow button** is for setting the drilling **speed**:

- * **low** is for thin or soft material.
- * **high** is for thick or harder materials.



7

electric drill

To use it properly, it's important to hold the drill firmly and in the proper position.



Drilling

2. Put the right bit in the drill. Make sure the bit is not larger than the nail or screw you want to use. A small magnet will ensure that the bit stays at the right spot. Put the drill in forward mode.



3. Have you marked where you want to make your holes? Place a board you won't be building with under your work; that way you won't drill into the table when you make your holes.

4. Hold the drill with both hands. Hold one hand around the T-shaped part on top. With the other hand on the drill's underside, place the bit on the spot where you want to drill. Hold the drill in a vertical position. The mark you've made at the desired spot will help you. Switch the drill on by pressing the button of the LED with your thumb or forefinger.



5. When you're finished drilling, put the drill in reverse mode to remove the bit from the wood.

electric drill recharger

7

With the recharger, you can recharge the battery for the drill.

Never try to drill while recharging!



adaptor with plug



cord



plug



You should ask a grown-up for permission before recharging the drill. **The current in the socket is deadly.** Make sure never to let the recharger, plug or cord get damaged or wet.

How do you use it?

1. Make sure the drill is switched off. Place the plug from the recharger in the re-charge connection point in the handle.

2. Plug the recharger into the socket. The small light in the handle should turn red. **Never drill if this light is red!** Recharging takes from three to five hours until the red light switches off.

3. Battery recharged? First, remove the plug from the socket. Then remove the small plug from the recharge connection point in the handle.

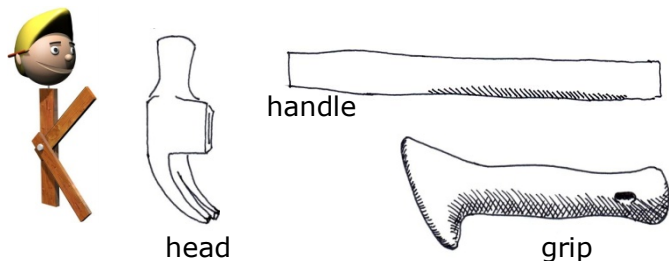
4. Now the drill is ready to be used again.



hammer

8

Hammers are used to drive nails into wood. There are different kinds of hammers. When using a hammer, it's important to hold it firmly and to make the right motion with it. These are the parts of a hammer:



Ask a grown-up to teach you how to make the right motion with the hammer. In the beginning, you can use the nail holder as an aid. **Use the hammer only for hammering nails** – never throw it or fight with it.

How do you use it?

1. A claw hammer can be used for all kinds of nails. With the claw of the claw hammer, you can also pry nails out of wood. A machinist's hammer is used for small nails.



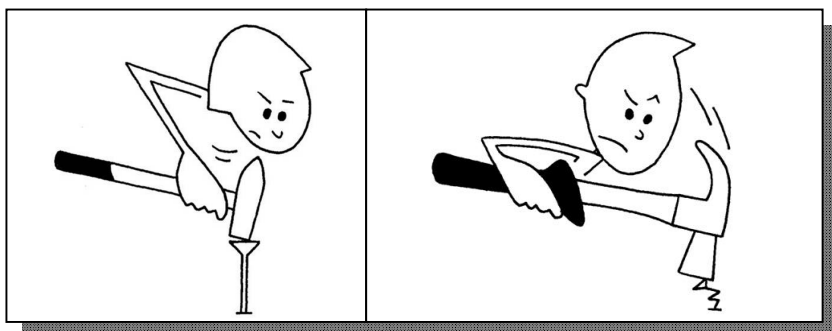
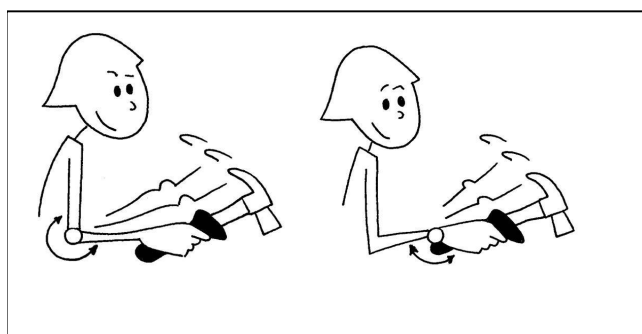
Holding the hammer

2. Hold the hammer by the grip or by end of the handle.



Hammering nails

3. Hold the hammer without unnecessary tension and make a motion that starts from your wrist and elbow. Calmly let the hammer descend onto the head of the nail. No force is necessary. The weight of the hammer will do the work.

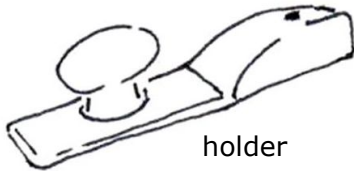


nailholder

9

With the nailholder, you can hold a nail at the desired location and hammer it in while keeping your fingers entirely safe.

These are the parts of the nailholder:



holder



2 hairpins



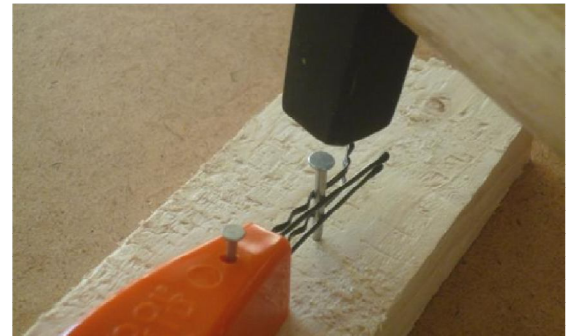
nail

How do you use it?

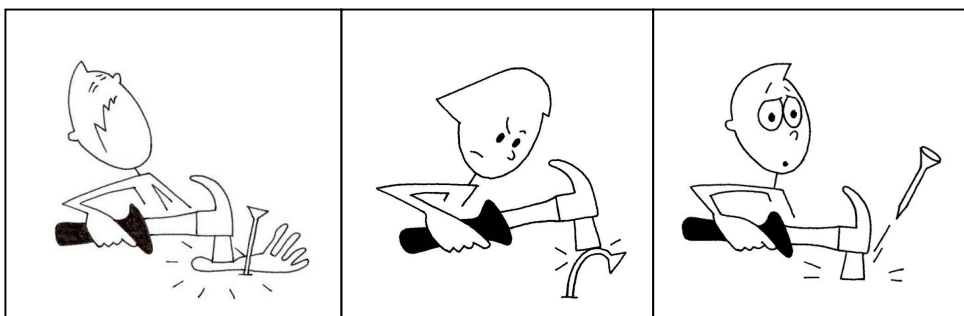
1. Place the hairpins on either side of the nail.



2. Is the point of the nail at the desired place? Hold the nailholder by the grip and strike the head of the nail with the hammer.



3. When the nail has been driven deep enough into the wood, you can remove the holder and then go on hammering until the nail is fully driven in.



9

nailholder

If you accidentally strike the hairpins, so that they no longer work – no problem: just place a new one in the nail holder.



changing hairpins

1. Pull the locking pin out of the nail holder.



2. Pull the damaged hairpin out and place a new one in the groove.



3. Place the locking pin in the hole again, so that it passes through the eyes of both hairpins.

screwdriver

10

With a screwdriver, you can screw screws into wood. It's important to use the right bit with the right screw. These are the parts of the screwdriver:



screw bit



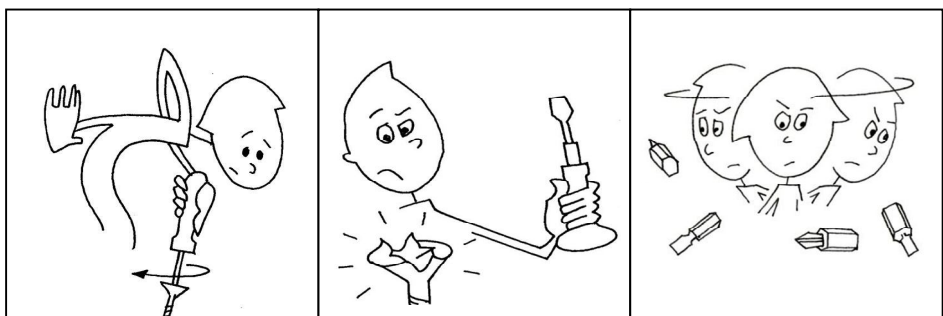
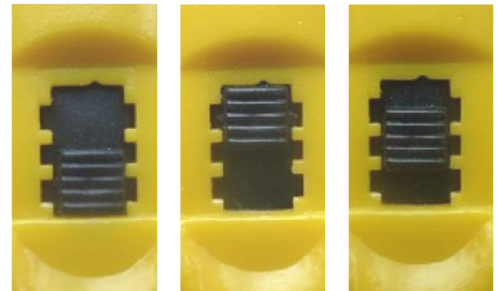
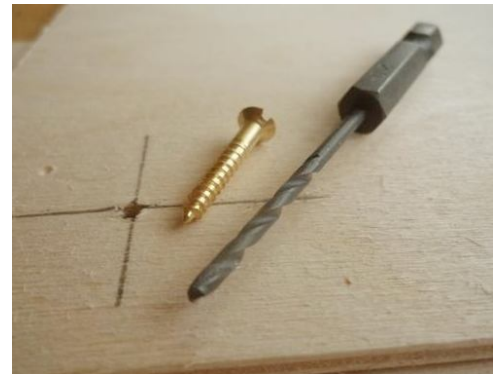
bit holder



bits in the handle

How do you use it?

- 1.** Have you marked the desired place for the screw? Pre-drill a hole with a drill bit that is narrower than the screw.
- 2.** Set the direction of rotation using the black sliding switch:
Down: screwing in with ratchet
Up: screwing out with ratchet
Middle: screw in or out without ratchet
- 3.** Place the screw in the hole and place the screwdriver in the screw.
Switch in the middle: rotate the handle forwards or backwards to screw the screw into or out of the wood.
Using the ratchet positions down or up: rotate the handle back and forth until the screw is completely in or out. Ask an adult for help if you do not know directly how the ratchet works.



10

screwdriver

There are different bits that you can use. You'll find them in the handle of the screwdriver.



Selecting a bit

- 1.** You will need to find the right bit for the screw you're using. Use a flat bit for a flat screw (one with a groove) and a Phillips-head bit for a screw with a Phillips-head.
- 2.** Be sure about which size you need! If the bit is too small, the screw won't rotate; if it's too big, it won't fit or won't work efficiently, and you'll ruin the groove(s) in the head of the screw.



Changing bits

- 1.** Take the bit out of the bit holder
- 2.** You can change bits by pressing the bit you have been using against the back of the one you want to change to. The bit will then slip out of the handle.
- 3.** Place the new bit in the bit holder and check if it fits properly in the screw.

