

# How to use a bow saw

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This card gives guidelines on how to introduce and use bow saws safely with a group aged 8 yrs +. The following process may be split up over a number of sessions or completed in one longer session.

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## 1. Preparation

**RISK ASSESSMENT** – Ensure you have read or created risk assessments for: site, activity and group.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)** – Three pairs of protective gloves per workstation.

**STAFF:** Appropriate training and experience, correct ratios for the age and nature of the group.

**SITE:** Set up an appropriate number of workstations for you to manage safely. A large log that has been stabilised (does not wobble) makes an ideal workstation. Ensure workstations are an adequate distance away from each other. Clear the site of any hazards. Allocate a position for the toolbox and safety equipment.

**TOOLS:** For each workstation, one 'peg toothed' bow saw (see final page) that can be held comfortably at both ends. Bow saws should be stored in a box or bag in an allocated position near the workstations without causing a trip hazard.

**MATERIALS:** At least one 5–8 cm diameter branch, minimum length 1 m, per workstation with leaves and small branches removed.

## 2. Introduction

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Briefly introduce the tool giving its name and use. E.g. "This is a bow saw and we will be using it to cut lengths of wood from this branch". Ensure whenever you hold the tool that you visually reiterate safe use by using correct holding and carrying techniques (see 'Transporting and passing' below).

## 3. Description

Visually and verbally describe the different parts of the bow saw: shaft, handle blade and blade cover. Never touch the blade when demonstrating. Point to it from a distance asking the group why they should avoid touching the blade and how would be the best way to do this.

## 4. Transporting and passing

**It is important that the group goes through this structured process to build up gradual understanding, expected behaviours and respect for the tool.**

**TRANSPORTING:** Holding the shaft in the centre, with the blade parallel to the floor, walk steadily to a point and then back demonstrating how to carry the saw safely. By keeping the blade parallel to the floor it reduces the risk of entanglement and tripping especially for shorter children. Explain to the group that they can only move onto the next stage once they have demonstrated safe transporting of the tool. Each member demonstrates transporting the tool.

**PASSING:** Holding the non handle end with one hand and the shaft with the other, offer the handled end to the next person and ask them to take hold of the handle in one hand and the shaft in the other (mirroring you). When they have a secure hold you can let go. The person now lets go of the handle and holds the shaft centrally by their side with the blade parallel to the floor. Each member demonstrates passing the tool. For more advanced groups, transporting and passing could be introduced at the same time.



**To promote this process consider having a reward (group clap, prize, token) for safe behaviour.**

## 5. Position and safety

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### a.) ALLOCATE ROLES

Allocate the roles of **controller** and **assistant**. Gloves should be worn on their non-sawing hands only. Position the remainder of the group at a safe distance (at least 2.5 m) away. A third person 'The Holder' can join the group to stabilise the branch during sawing.

**b.) POSITION PEOPLE** – The controller and the assistant kneel down facing each other on opposite sides of the workstation with their legs parallel to it. It may be necessary for you to demonstrate this first. Lift up the outside knee so the foot is flat on the ground. This is a very stable position. The holder puts both gloves on, puts both knees on the ground either side of the branch and places their hands down in front of them clamping the branch to the ground. Ensure the holder is a safe distance away from the sawing.

### c.) POSITION BRANCH

The branch should rest on the ground on the side of the assistant at right angles to the log. There should be enough overhang on the branch to allow the controller to comfortably hold it.

### d.) POSITION SAW

Keeping the blade cover on, pass the controller the saw. The assistant takes hold of the other end. The blade should be at right angles to the branch in a horizontal position. The controller and assistant should be square to one another, each with a free arm.

### e.) POSITION CUT

Ensure the saw is positioned to make the cut on the controller's side. This will open the cut. If made on the assistant's side the cut will close and trap the saw.

### f.) SAWING TECHNIQUE

Practice the sawing technique (given on the next page) with the cover on to check the individuals are comfortable, stable and understand the action they are about to perform.

**It is very important for the group to practice and understand the positions to avoid instability and pressure being put on the saw.**





## 6. Using the tool

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A **crossed arm technique** is given below to reduce the likelihood of injury from the saw slipping and catching during the very first part of the cut. This technique restricts the view slightly but is a safe method to use to make the initial groove. This method is only appropriate for older children and adults who can reach comfortably through the saw.

### a.) REMOVE COVER

When you are ready to start you remove the blade cover.

### b.) CROSS ARMS

The controller and assistant pass their gloved hands through the saw to hold the branch on the opposite side. If the saw slips its movement is now restricted reducing potential for injury from the teeth.

### c.) MAKING A GROOVE

The controller asks the assistant if they are ready to start and then begins to pull the saw backwards. At the end of the stroke, the assistant pulls back. At the end of this stroke the controller pulls back and so on. Keep following this process until a groove the depth of the blade is cut.

### d.) UN-CROSS ARMS

The controller says 'stop'. Both participants uncross their arms and place their hands on the branch on their own side of the saw.

### e.) SAWING

The controller then asks the assistant if they are ready to start sawing. Keeping the blade in the pre-cut groove the controller pulls and at the end of the stroke the assistant pulls.



**The key to effective sawing is comfortable position: relax your arms, take your time, communicate clearly and only pull. If you push, the teeth can dig in and jam making the process difficult. This can also happen if the position is incorrect and the saw is leaned on.**

## 6. Using the tool (continued)

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### f.) FINISHING THE CUT

The sawing continues until the piece of wood is almost cut through. Remind the controller to support the end being cut off (do not pull up as this will trap the saw). This will provide a clean cut. If weight is applied to the end of the branch whilst cutting it could pull and snap the wood fibres and leave an unclean cut.

### g.) KEEP HOLD OF THE SAW

This is a potential time for injuries as enthusiastic participants dive under the exposed blade to investigate what they have just cut. Remind the controller and assistant to keep hold of the saw. The cut piece can only be picked up once the blade cover is on.



### h.) PROGRESSION

Swap the members of the group around and allow the group to go through the process themselves with your input only where necessary. Once you feel happy that groups have practiced each position sufficiently and have become more familiar with the feel of sawing, more complicated cuts can be done.

- **Oval shape.** Branch on a 45 degree angle to the saw (this may require an extra log to keep the branch level)
- **Thin disk.** Using the sawing technique described above except the assistant does not cross through the saw but holds the branch next to the controller's crossed through hand. It is unwise to attempt to hold the thin part of the wood whilst cutting
- **Groove.** Turning the wood to create a groove all the way around

**When sawing has finished the blade cover should be replaced immediately. If you are about to use the saw again ensure you or a responsible person is holding the saw safely until sawing starts again.**

## 7. Storage and maintenance

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Once the session has finished all tools are returned to the toolbox. Tools should never be left lying around on the floor or leant against trees when not being used. This prevents injury from people tripping or walking into tools and also prevents saws being lost or forgotten. Ensure good transporting techniques are praised when returning saws to the box. Before packing check all blades are in good working order, wiped clean and moisture removed. Replace covers and store. Any damaged tools need to be labelled and either removed or repaired.

## 8. Handy hints

\***Consistency.** Keep your tool storage box in the same place for every session. This supports, through repetition, the need to pack saws away when not in use.

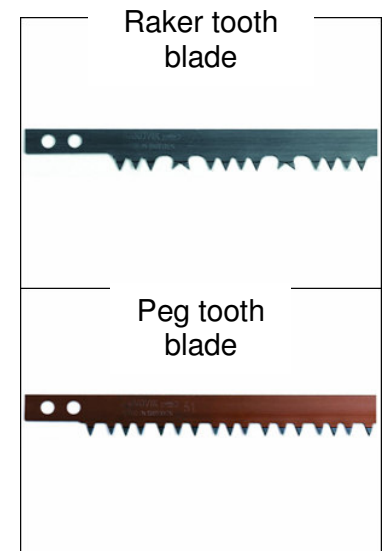
\***When communicating** whilst sawing come up with a clear signal to pull, otherwise both people can pull at the same time causing frustration. Controller says 'To me' – 'to you' – 'to me'.

\***Different blades** do different jobs. It is a good idea to select the blade most appropriate to the job.

'**Raker tooth blades**' have openings every few teeth so they can release the wet wood fibres when cutting greenwood, thus preventing clogging.

'**Peg tooth blades**' have regularly spaced teeth and produce a clean cut through dry, dead wood. For beginners, raker blades can catch more easily. For introducing saws, even with green wood, peg toothed saws are recommended.

\***Establishing expected behaviours:** Using tools inappropriately through either misunderstanding or messing about are the most likely causes of injury. It is therefore important that the group clearly understands all instructions and expected behaviours. A suggested consequence for anyone who intentionally misuses a tool is: they will be asked to put the tool down and sit out of the activity. When they are ready to behave appropriately they can request to join back in.



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