

# Re-use cascade training session plan



## Theme

Upcycling

## Objectives

To teach people how to make a swing out of an old tyre that can no longer be used.

## Outcomes

To be able to make a swing out of an old tyre and make something useful out of an item often thrown away or fly tipped.

## You will need

### Recycled materials

- An old car tyre. Preferably a small one, but any car tyre will do. Don't go for a lorry or tractor tyre.
- Two rescued oak whisky cask ends (no problem finding these in Scotland)
- A few lengths of wood. We used 14mm thick leftover cladding, ripped into 50mm wide battens.
- A few pieces of 2x2.

### New materials

- Synthetic hemp rope, 24mm diameter
- 5mm x 100mm pozi wood screws (8 of them)
- A handful of 4mm x 30mm pozi wood screws

[recycleforscotland.com/re-use](https://recycleforscotland.com/re-use)

## Tools

- Jigsaw
- Electric drill/screwdriver with 5mm wood drill bit, 28mm auger bit and PZ#2 screwdriver bit
- Belt sander
- Multitool with sanding attachment and fine sanding sheet
- Small router with roundover bit
- Protective goggles

## Finishing

- Danish oil
- Lint-free cloth
- Vinyl or latex gloves.

## Instructions for the group

Your task is:

### 1) To make a swing as follows

#### Step 1: Materials & tools (see above for list of requirements)

Most parts of this tyre swing are upcycled: an old car tyre, two whisky cask ends, leftover pieces of 2x2 from roof poles for a yurt and scrap cladding. A new rope was used for health and safety reasons as the tyre swing was installed in a public place, but you could re-use rope if you have any.

#### Step 2: Cutting the cask ends to size

Start by measuring the diameter of the round you need for your tyre. This is the inside diameter of the tyre plus enough so the wooden round sits comfortably on top of the tyre. It corresponds more or less to the size printed on the tyre plus 1". We used a 175/50R15 tyre. So we cut the cask ends into 16" rounds. That is approximately 41 cm.





For the centre of the round, choose a spot from where you can draw a circle that includes the widest possible piece of wood on both sides. If you are left with a small strip of wood on one side of the circle, it will be difficult to make it hold together with the other pieces.

Screw a small screw partway into the centre you have established. Make a loop with a piece of string (paracord is ideal). Pass it over the centre screw on one side and over a pen on the other. When pulling the loop tight with the pen, its length should be exactly half the diameter of the round you need. Draw this circle onto the wood.

Use a jigsaw to cut out the round. Lay it on top of the tyre and check that it is the right size. It should be wide enough to cover the hole completely, as well as approximately 1/2" to 1" of the rubber.

Use the first round as a template for the second one and cut the second one out.

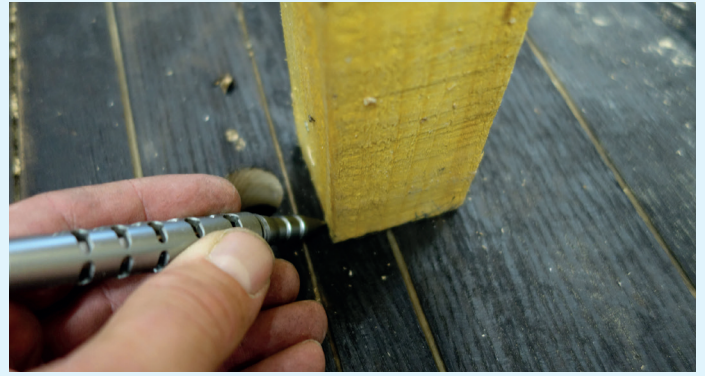
### Step 3: Assembling the cask ends

With the 28 mm auger drill, drill out the centre hole. Using a piece of 2x2, mark off 4 positions (north, south, east, west) around the centre hole on the burnt side (this is the side that will be hidden inside the tyre once the swing is finished) of one cask end. Put this cask end on top of the other one, the "clean" sides touching. Drill a 5 mm hole in the centre of the four squares you just marked off. If the drill bit is too short to go through both cask ends, re-drill the bottom one through.

Cut pieces of the recycled wooden battens to assemble all the pieces that make up the rounds. Cask ends are usually dowed together, so they will hold together. This can be rather loosely if they have dried out. We use the battens to give them the necessary rigidity.

Make sure your battens don't overlap any part of the marked-off 2x2 squares. Put one 4mm x 30mm screw through the battens and into each of the pieces of wood that make up the rounds.

See pictures overleaf for guidance.



#### Step 4: Finishing the oak rounds

Using a router with a roundover bit, round over the top edge of the oak rounds (bottom optional). Then use a belt sander with a coarse-grained belt to sand the top of the cask ends level. Use a fine sander to smooth the wood. We also rounded over the centre hole with the same router bit. It makes it easier to pass the rope through and it looks better too.



#### Step 5: Assembling the rounds over the tyre

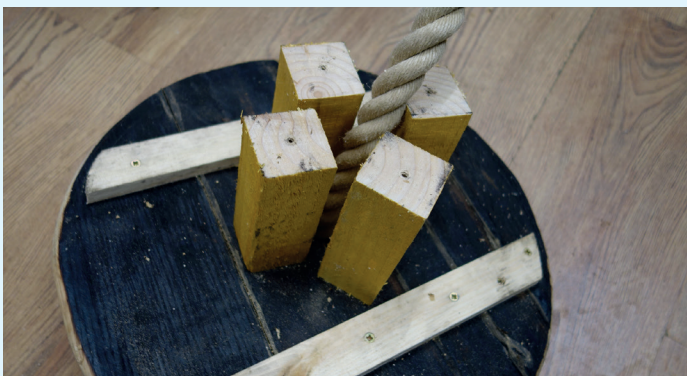
Measure the depth of the tyre. Our tyre was 14.5 cm deep at the centre, between both outside faces. The four posts holding together the wooden rounds over the tyre will be 2 cm shorter, i.e. 12.5 cm. Cut these out of the lengths of 2x2.

Using the 5 mm x 100 mm screws, screw the four posts in place around the centre hole on the burnt side of one wooden round, through the 5 mm pre-drilled holes.

Don't screw them too tight for now. This will be the bottom round of the swing (the one you won't see), so take the one that looks least attractive.

Pass the rope through this round and tie it off underneath with a figure-of-eight knot and pull the knot tight against the bottom of the round. Pass the long end of the rope through the tyre, then through the centre hole in the top wooden round (make sure it faces the right way up). Push the four remaining long screws completely through the pre-drilled holes in the top wooden round, so they protrude through the bottom. Line the screws up with the centre of the wooden posts. If you haven't screwed the bottom on too tight, you can still wiggle them around a bit to line up with the screws. Push down on each screw when it's on the centre of a wooden post, so it bites into the wood. When all four screws are positioned correctly, screw them in and tighten them more each in turn as you go. Turn the tyre over and tighten the bottom screws again. Do this again for the top and again for the bottom until all screws are tight.

### Step 6: Finishing



You can paint, varnish or oil the wood to finish your swing.  
On one of our swings, we stencilled our logo in dark wood stain, then put a few coats of Danish oil on top to protect the wood for years to come.

Enjoy!

Source: <http://www.instructables.com/id/Tyre-Swing/?ALLSTEPS>

Thanks to Earthtime's UP project: <http://earthtime.co.uk/zero-waste-scotland-moray>

### Hints/useful links

Other suggestions for things to do with old tyres include:

- [recyclethis.co.uk/20070525/how-can-i-reuse-or-recycle-old-tyres](http://recyclethis.co.uk/20070525/how-can-i-reuse-or-recycle-old-tyres)
- [boredpanda.com/recycling-tires-upcycling-diy-ideas/](http://boredpanda.com/recycling-tires-upcycling-diy-ideas/)
- [uk.pinterest.com/taketentire/things-to-do-with-old-tires/](http://uk.pinterest.com/taketentire/things-to-do-with-old-tires/)

