

# How to make a water wheel

Water wheels use the energy of flowing or falling water (or both) to turn the wheel. The axle of the turning wheel can then be used to power other machines. This is called hydropower.

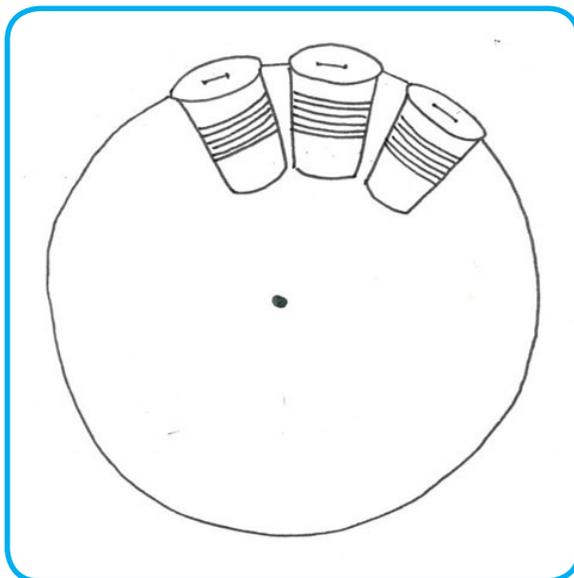
## For each water wheel you will need

- Two circles of cardboard of the same size, at least 15cm in diameter
- Some small plastic or cardboard cups of the same size (number will depend on the size of your cardboard circles and the size of your cups)
- Stapler and staples or masking tape
- Long stick should be long enough to comfortably rest across the bucket or trough
- Bucket or trough
- Water
- Pencil

## What to do

**Step 1.** Lay the two cardboard circles together and puncture a hole through the middle point of them using a pencil.

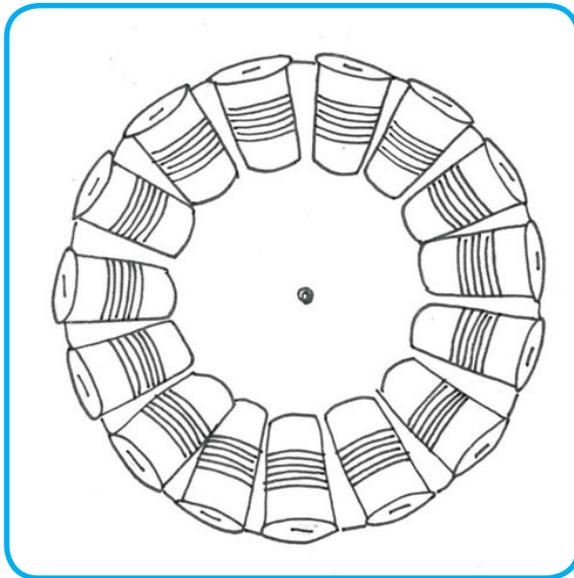
**Step 2.** Take one cup one cardboard circle and staple or tape the cup to the edge of the cardboard circle (see Diagram 1). The lip of the cup should be in line with the edge of the cardboard.



*Diagram 1. Staple or tape the cups to the first cardboard circle. The lips of the cups should be touching the edge of the cardboard circle and touching each other.*

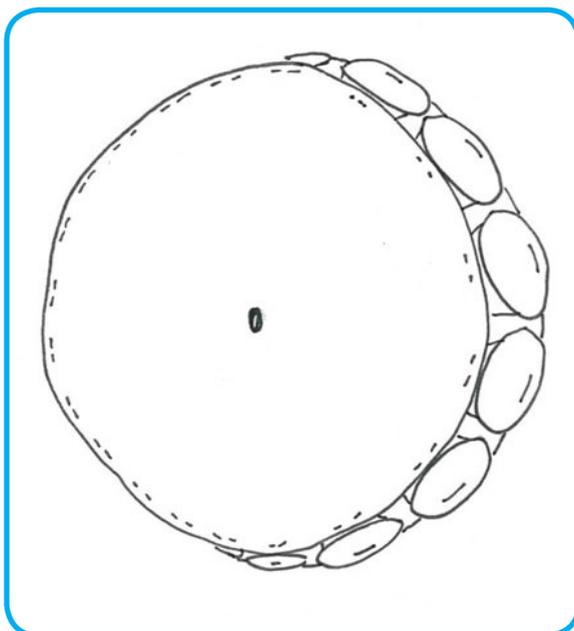
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**Step 3.** Continue adding cups all the way around the circle, so that the lips of the cups meet (see Diagram 2).



*Diagram 2. Continuing adding the cups all the way around the first cardboard circle.*

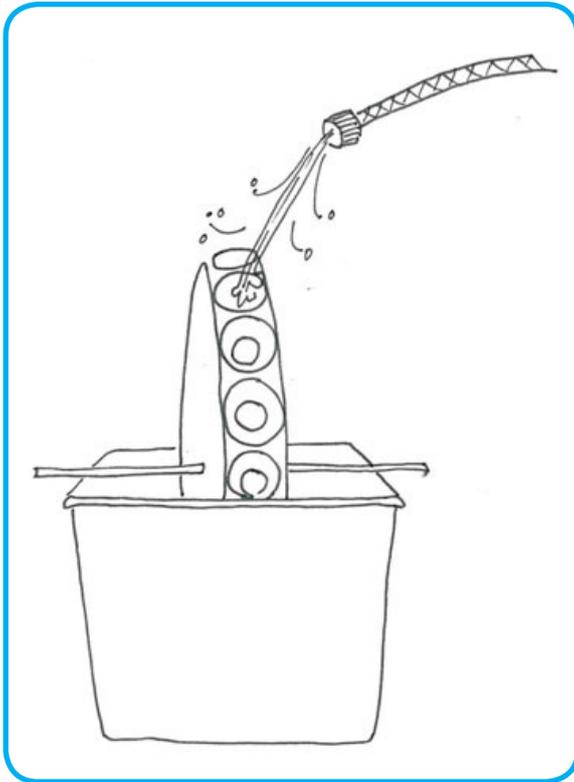
**Step 4.** Once you have attached all the cups to one of the cardboard circles take the other cardboard circle and hold it in line with the first circle, so that it covers the cups (see Diagram 3). Staple or tape all the cups to the second cardboard circle in the same way as you did with the first circle. You have made a water wheel!



*Diagram 3. Staple or tape the cups to the second cardboard circle.*

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**Step 5.** Once all the cups are attached, poke a stick through the holes you made in the centre of the cardboard circles. Balance your water wheel on the bucket (see Diagram 4).



*Diagram 4. Poke your stick through the holes in the centre of your cardboard circles and balance your water wheel over a bucket or trough.*

**Step 6.** Start pouring water onto the water wheel. Don't pour your water at the very top of the wheel – instead aim for the cups that are slightly down (imagine about 10 o'clock on a clock face). Your wheel should start turning!