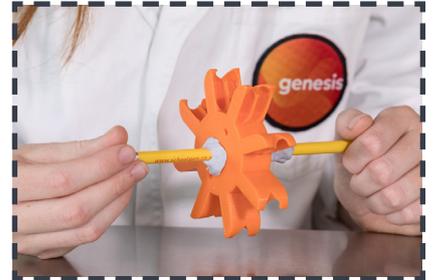


# How to make a hydro turbine

## 1. Before you start

- \* Watch the how to make a hydro turbine video on [https://www.youtube.com/watch?v=2\\_4y9\\_oal3w&feature=youtu.be](https://www.youtube.com/watch?v=2_4y9_oal3w&feature=youtu.be)
- \* Use a 3D printer and our stl 3D printing files at <http://schoolgen.co.nz/make-and-play/maker-projects/make-a-hydro-turbine/> to print off the School-gen turbine  
To find out more about 3D printing see our [3D tips and tricks](#).



## 2. What you'll need

- \* 3D printed hydro turbine
- \* Pencil
- \* Blu-tack
- \* Running water (your kitchen tap and sink will do)



## 3. Get started

### Step 1:

Take your 3D printed hydro turbine and put your pencil half way through the hole in the middle (this is called the axis) of the turbine.

**Did you know** it's called a hydro turbine because it harnesses the power of water.

### Step 3:

Turn your tap on until you get a gentle stream of water.

**Did you know** this type of hydro turbine is called a Pelton turbine.

### Step 5:

Hold the turbine a few centimetres under the tap so when the water comes out it hits the blades of the turbine.

Can you feel the energy moving from the water into the turbine?

### Step 2:

Make sure your pencil doesn't fall out by putting modelling clay or putty on either side of the axis. Make sure to squeeze it nice and tight.

**Now it's time to test it!**

### Step 4:

Use two hands to hold each end of your pencil lightly so the turbine can spin freely.

### Step 6:

Move the turbine up and down under the tap to find the best spot – what happens when you get closer to the tap or further away?

4.  
**Finished?  
What's  
next**

Visit [Schoolgen.co.nz](http://Schoolgen.co.nz) to check out other projects you can do.

We've also pulled together some cool challenges to get you thinking and innovating! The easiest ones are at the top of each list, the harder ones at the end are for budding scientists and engineers.

More minds are better than one so get a team together and start throwing some ideas around and come up with a plan of attack. For designing things, we recommend (and use) TinkerCad.

- ✦ or Sketchup
- ✦ Try making a [3D printed turbine with housing](#)
- ✦ Design then build your own hydro turbine house using what you can find. Reuse and recycle as much as possible!
- ✦ Design, make and test a new turbine. See Level 1-2 activity (to come) to find out how the number of blades affects the efficiency of the turbine. Compare it to the School-gen one. What do you notice about how they work and how much energy they transform?
- ✦ Research hydro turbines, are there different types? Which ones are best for do you notice about how they work and how much energy they transform?

