

the Big Fat Book by Max & Ro

2.

the
drill



Hey Ro,
This drill,
how was it
invented?

Don't know.



The internet said
there was a dentist
7500 years ago
that used a drill to
treat his patients.
That's amazing!

So we gave
hime a call.



Step 1:
twist and turn!

Around 35,000 BC
people discovered they
could make holes by
spinning a pointy stick
on a piece of softer
material. But after a
while the stick gets stuck
in the very hole it made.

Step 3: speed

Even later the bow
drill was invented.
This way the stick
could spin faster,
making hole
drilling much
easier.



Step 2: sand

They solved this, by
putting some sand in
the hole. The sand provides
space between the stick
and the wood and helps
scraping to create
the hole.

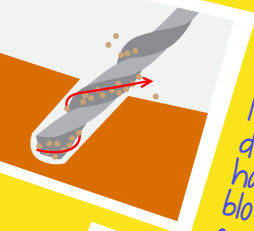


Pakistan
7500 years
ago

Steven A. Morse invented the modern day drill bit 1861. It has spiral shaped grooves that allow the saw-dust to be transferred out of the hole.



A big breakthrough! Now you could go on drilling, without having to stop to blow the sawdust away.



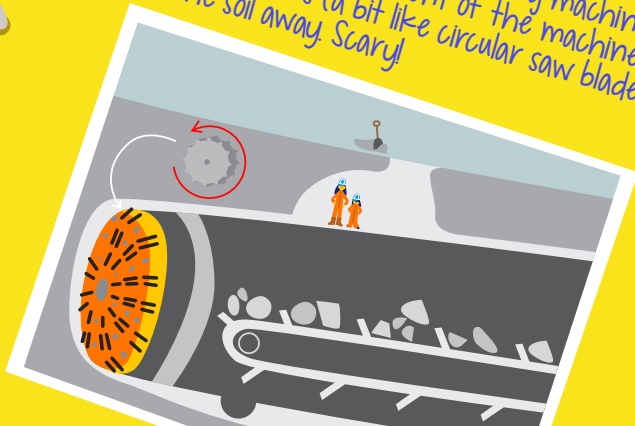
All drill bits we use now are shaped like that. Morse's clever grooves are in the gimlet, the bits in your hand drill and the ones in your electrical drill.

In the Middle Ages the hammer drill was invented. It drills and beats at the same time. They used very big ones (made of whole trees!) to tear down city walls. Nowadays the hammer drill is a hand tool and great for making holes in concrete walls.



Gundalf

The biggest drills are the tunnel boring machines, also known as moles. The front of the machine has a lot of turning discs (a bit like circular saw blades) that eat the soil away. Scary!



Make your own bow drill!

This is what you need:

Your bow:

- a flexible branch (like willow, 1 meter)
- rope

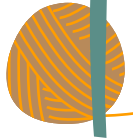
Your drill:

- A piece of elder (30cm long, 2cm thick) or a rigid thin branch (30cm long) and a cork
- a drill bit
- duct tape

elder has a nice soft core



willow is really flexible

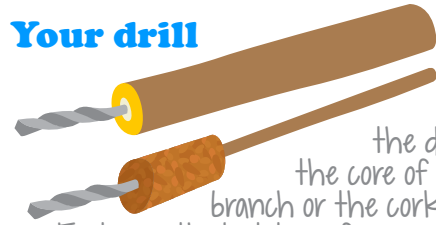


For the drilling:
- an eggcup

~~+~~ *don't need the egg!*



1. Your drill



Stick the drill bit into the core of the elder branch or the cork-stick. Fasten with duct tape if necessary.

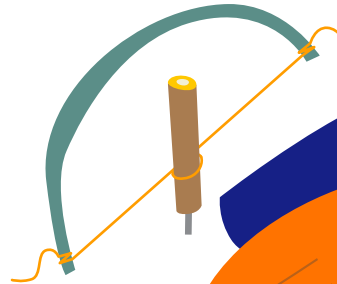
2. Make your bow



Cut off the lateral branches and tie your willow branch into a bow.

3. Twist the drill into the bow

Twist it once. When it is hard, the tension on your bow is good!



4. Drill!

Put the eggcup in one hand, with the drill in it. Push gently. Move the bow with your other hand to drill. Does it work?



And that's chapter 2!

We plan to make the full fifty chapters on all the tools on our poster, one by one. Each with some history, nice facts and lots of DIY ideas for home and schools.

We'll do it all together with the international maker-community. (You!) We'll make all chapters available for free through our website. (CC: BY-NC-ND 4.0)

Do you like our project and want to keep track of it? Or do you want to join in?

Please follow our progress and get in touch:

www.lekkersamenklooien.nl.

You'll also find a free download of the 50 tools poster there.

Or find me on Twitter: **@astridpoot**.

<3 love, Astrid

Available soon:

