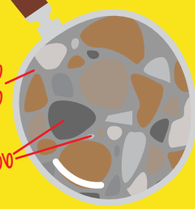
Is concrete a rock?

Don't know. It looks different.

But people use it to make solid things!

Concrete is LIKE a rock you mix from scratch, and mold into a shape you want.

Recipe:
Aggregate (bits of rock give the concrete strength)
Cement and water (Hold the aggregate bits together)

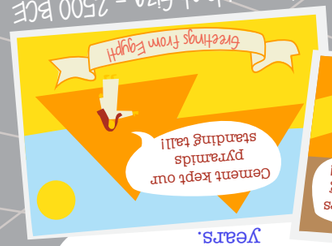


Cement is like rock-glue.
The key ingredient is quicklime, a powder made by cooking calcium-rich stuff like shells, bones or limestone.
When mixed with water, is makes a paste that dries hard as stone.

Over time, people experimented with mixing new things into quick-lime cement and improved the recipe.

Humans have been gluing stones together with cement for thousands of years.

Pyramids at Giza – 2500 BCE



Goblet Tepe – 8000 BCE

Mina Dynasty Great Wall 1400 AD

We added sticky rice into our cement for extra strength and earthquake protection!

The Romans, 100 BCE

We mixed ours with volcanic ash. Not only was it stronger, it could get rock-hard without drying. It even set underwater!

We built a lot! The Pantheon, aqueducts, villa's and baths!

Joseph Aspdin, 1840

Seashells, bones, **GROSS!!!**

Let's make our own recipe for **super strong rock stuff!**

No need! I created a process for mass production. You can buy it at the store!

Working with concrete!

Always use eye protection, nose & mouth protection and wear gloves.

And keep an adult nearby for assistence!

Get:
- **concrete mix**
- **water**
- **an old bucket to mix in**
- **an old wooden spoon to stir**

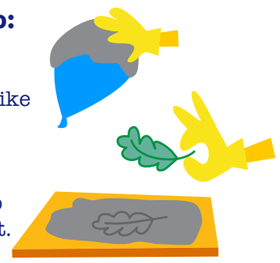
Remember:
cement powder is very thirsty...
And you body is 60% water!

Choose a fun thing to do:

Smear
You can cover surfaces with concrete and create a 'shell'-like shape!

Stamp / etch
You can push nice things into your concrete to make a print.

Pour
Or pour your concrete into a mold!



1. Read and remember!

Read the instructions on the packaging carefully.

2. Pick your molds

Choose nice molds.
In this example:
pudding packaging!

3. Mix!

Put the concrete mix into your old bucket. Mix the water in very well.

You've got about 20 minutes before things get ROCKY!

4. Pour and push

Pour a little concrete in the big trays, and push the smaller trays in gently. The smaller tray will push the concrete up.

5. Wait...

Allow to set and remove the trays. Use for whatever!

And that's chapter 3!
It was researched by supermaker **John Lynch**, a.k.a **@Mittensbrother** on Twitter. Please support him in his work!

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: **4. spirit level**

The Big Fat Book is a project by Astrid Poot.

the Big Fat Book by Max & Ro

Concrete