

KUZO COMPOSTER

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ABOUT US

Plants and play is a young, dynamic team of three students Product Development at the University of Antwerp. Our main values are ecology and durability. We want to help people lower their ecological footprint through our design.

DESIGN BRIEF

Defining the problem

The children of the next generation are going to be faced with the environmental issues that previous generations have caused. That's why it is important to make them familiar with ecology and durability from childhood. We want to create a product that stimulates children to learn in a playful way about recycling and self-sufficient agriculture.

Demands

- The product contains 70% SMC/BMC
- Easy removable from the mould
- Resistant to rain, corrosion, wind
- The product has to last at least 20 years
- Cost lower than 45 euros
- Attractive to children and child safe
- No smell inconvenience
- Weight of 35 kg
- Resistant to temperatures up to 70°C
- Fireproof

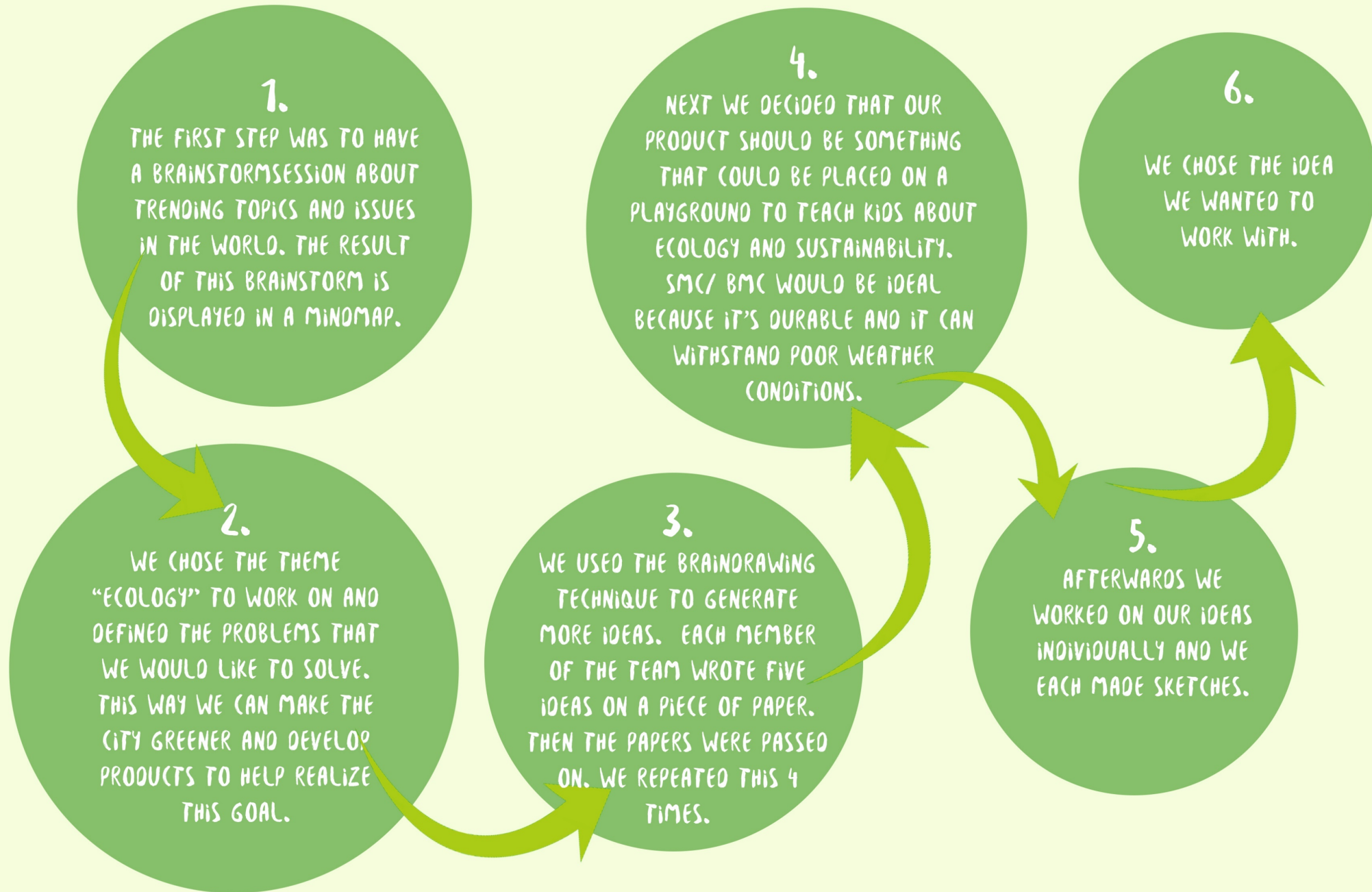
Items to develop

- Planter
- Compost bin
- A system to grind the compost
- A system to minimize bad odors
- A system to water the plants
- A system to remove the compost from the bin.

Design Drivers

- Modular
- Closed system (no external energy needed)
- Attractive to children
- Remind people of the ecological cycle.

IDEATION PROCES





CONCEPT PRESENTATION

We at Plants and Play have decided to create a product that raises awareness amongst children to care for the world around them in a more durable way.

Kuzo is a modular compost bin and planter that can be placed at playgrounds in schools. A big aspect of ecology is the fact that things can be used and reused over and over again. Kuzo is a representation of the ecological cycle because the biodegradable waste can be composted and used as nutrients for the plants. Kuzo also collects rainwater so it's possible to nourish vegetation without needing chemical fertilizer or fresh water. By using a simple and identifiable shape our product is inviting children to play with and discover.

TARGET AUDIENCE



PLANTS AND PLAY

WE BELIEVE THAT KUZU CAN HELP THE PLANET IN THE MOST FUN WAY! WE GIVE KIDS THE OPPORTUNITY TO TURN THEIR WASTE INTO NUTRIENTS FOR PLANTS SO THEY CAN WATCH THEM GROW. THIS WAY WE'RE CREATING A WHOLE NEW GENERATION OF PEOPLE WHO ARE MORE AWARE OF ECOLOGY AND SAVING THE EARTH.



BE A KUZU KID!

KUZU IS A COMPOSTBIN AND PLANTER IN-ONE. OUR PRODUCT IS MEANT TO BE USED BY KIDS AGE 6 -11. WITH IT'S PLAYFULL DESIGN IT STIMULATES CHILDREN TO LOVE NATURE AND TAKE CARE OF IT.

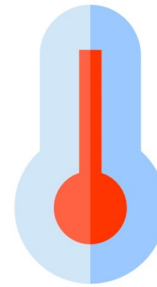
TARGET AUDIENCE

WE WILL PRIMARILY FOCUS ON SCHOOLS IN FLANDERS AND IN BRUSSELS THAT ARE OFFICIALLY RECOGNIZED AS SUSTAINABLE ESTABLISHMENTS AND WHO OWN THE ECO - LABEL, WORLDWIDE GIVEN BY THE FEE (FOUNDATION FOR ENVIRONMENTAL EDUCATION). IN THE FUTURE WE MIGHT ALSO FOCUS ON SCHOOLS WITHOUT THIS LABEL TO RISE ENVIRONMENTAL AWARENESS AMONG AT LEAST ALL KIDS IN OUR COUNTRY.

WHY BMC?



SMC/BMC is resistant against extreme weather conditions. This is favorable since Kuzo will be placed outside.



SMC/BMC can withstand high temperatures. This is a valuable characteristic since compost can heat up to 70 °C on a hot summer day.



Because of all the chemical processes that happen when composting we needed a material that has a good chemical resistance. BMC/SMC is perfect for this.



We want to let kids be kids. They are playful and wild creatures. So our product might endure a few kicks and punches. That's why we need SMC/BMC because it's strong and durable.

KUZO COMPOSTER

Kuzo is a compost bin and planter in-one.

Our product is meant to be used by kids age 6-11. With it's playfull design it stimulates children to love nature and take care of it. By twisting the wheel the children can open the bin and grind the compost at the same time.



STEERING WHEEL

The weel is connected to the knives. By twisting the wheel you can grind the compost.

TOP PART

The lid of the bin togheter with the wheel fits tightly on to the top part.



THE PLANTER

The planter which fits right in between the shaft, is used for plants or herbs. On the bottom, holes are provided to drain the remaining water.



THE SHAFT

The top part and the composter are screwed on to the shaft, which is provided with screw-thread and the planter fits in between.



THE COMPOSTER

The composter is provided with a water basin. In the bottom part there are also holes, so the water can drain into the basin. By sliding the two covers off you can acces the compost



Water basin

TOTAL MASS OF EACH PART

Total weight of named parts: 146 Kg

Top Part
24,8 Kg

Bottom Lid
4 Kg

Top Shaft
11,5 Kg

Planter
41,3 Kg

Bottom Shaft
10,2 Kg

Bottom Part
17,4 Kg

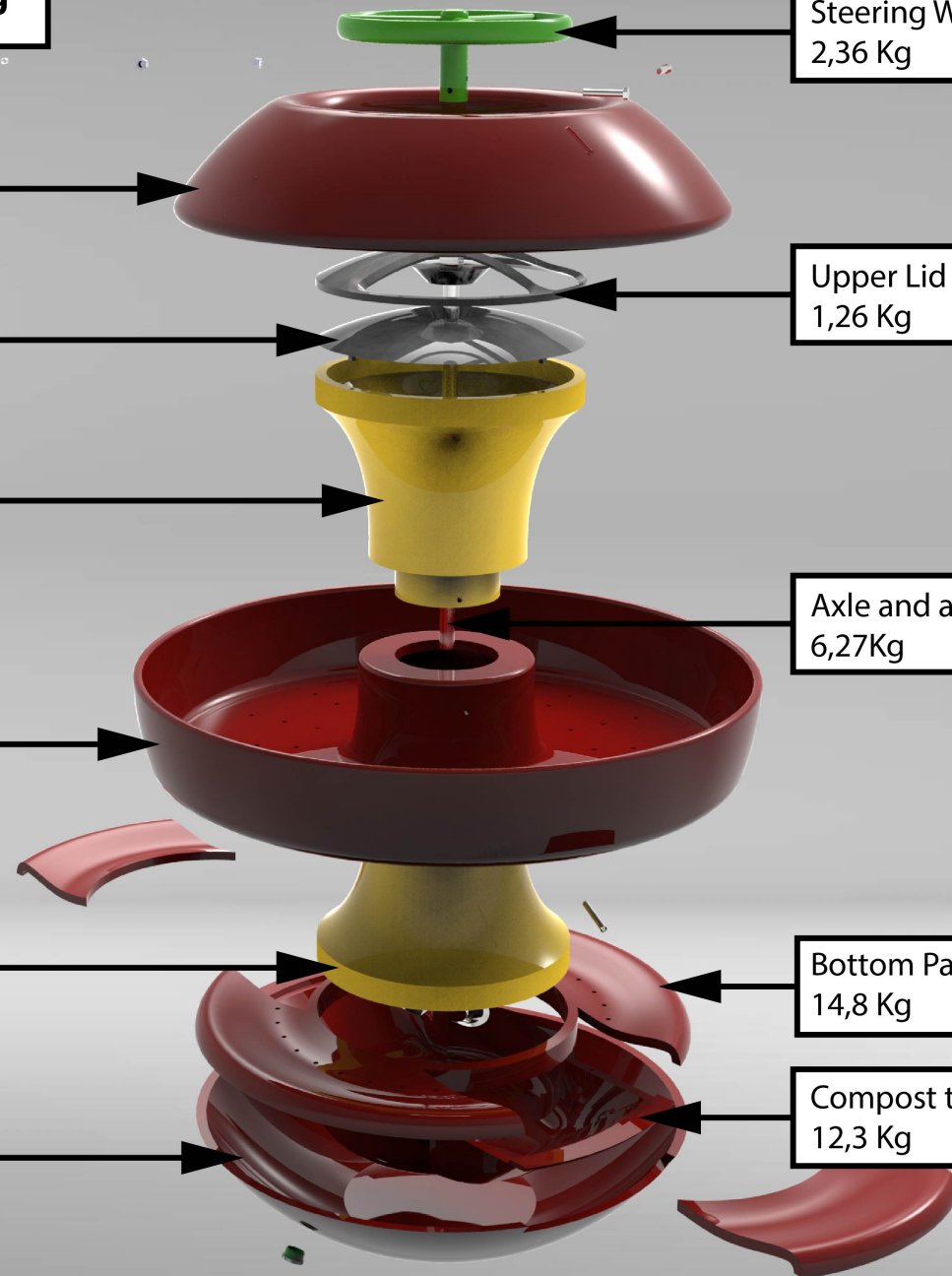
Steering Wheel
2,36 Kg

Upper Lid
1,26 Kg

Axle and attached knives (x4)
6,27Kg

Bottom Part Cover and Lids (x2)
14,8 Kg

Compost tank
12,3 Kg



MOULD DRAWINGS (1)

1. Top Part

Made out of SMC

Post Processing

→ Cutting 1 axial hole

2. Shaft

2 shaft parts made out of BMC

Lower shaft is made out of the same the mould but lower part is cut of to fit into the other one

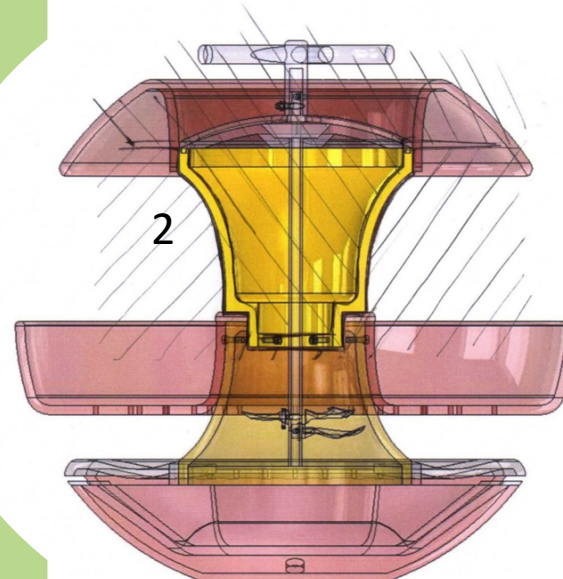
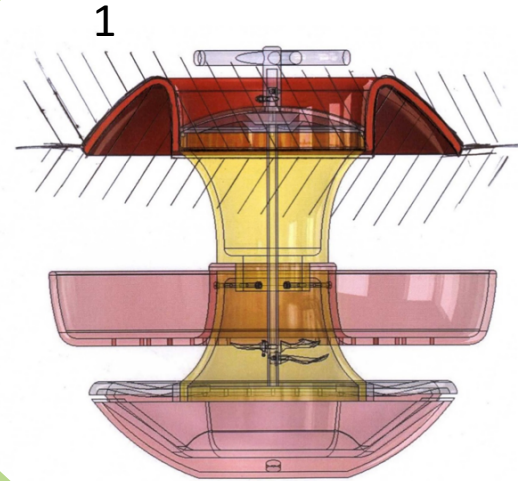
Post Processing

→ Upper part

Cutting 1 axial hole

→ Lower part

Cutting 1 axial hole and 3 radial holes for the screws



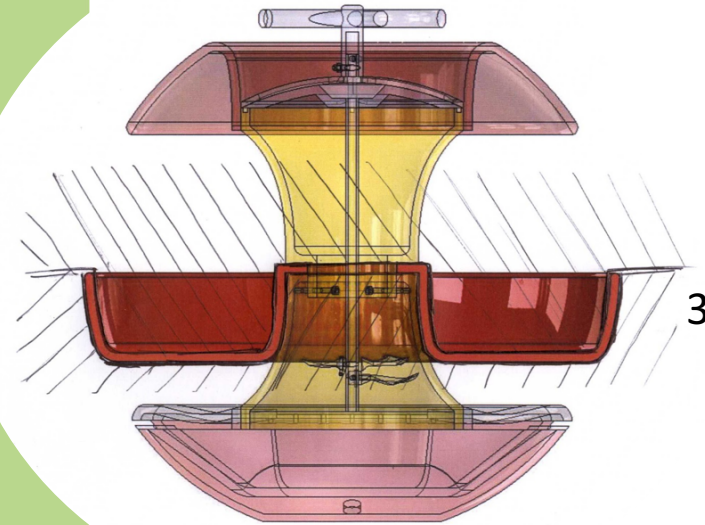
MOULD DRAWINGS (2)

3. Planter

Made out of SMC

Post Processing

→ Cutting 1 axial hole

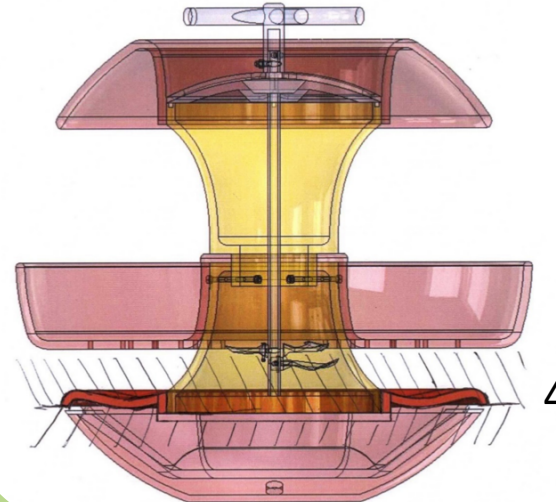


4. Composter lid

Made out of SMC

Post Processing

→ Cutting 1 axial hole and 2 holes for the 2 covers



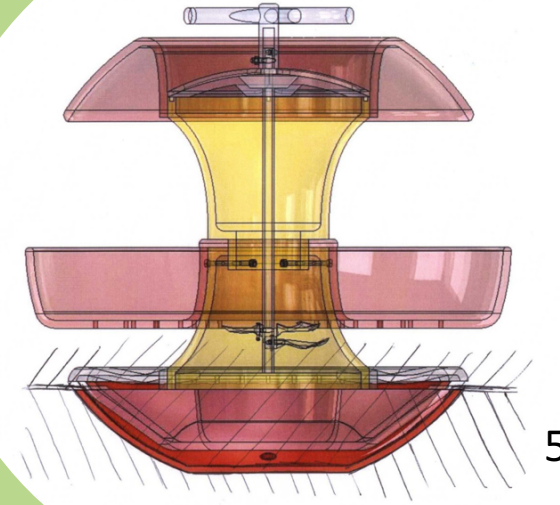
MOULD DRAWINGS (3)

5. Composter

Made out of SMC

Post Processing

→ Cutting 1 axial hole

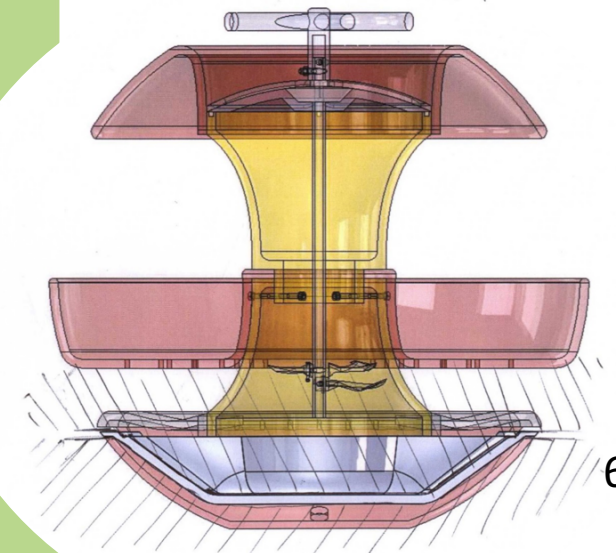


6. Water basin

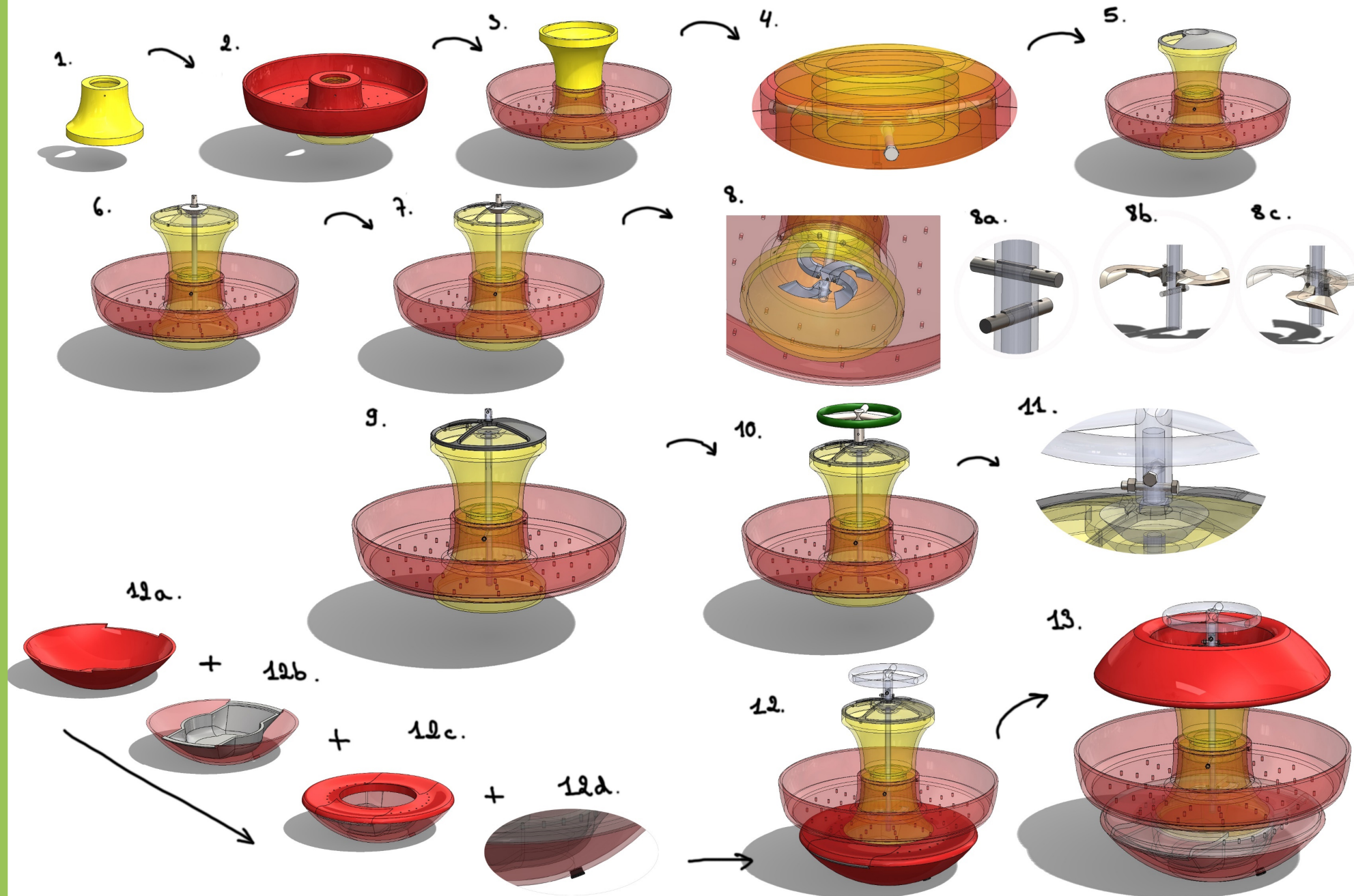
Made out of SMC

Post Processing

→ Cutting 1 tangential hole for the water tap and 2 cut outs for the two covers



ASSEMBLY ORDER



“THE BEST WAY TO PREDICT THE FUTURE IS TO DESIGN IT”

