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Gerda Stetter Stiftung
Technik *macht* Spaß!

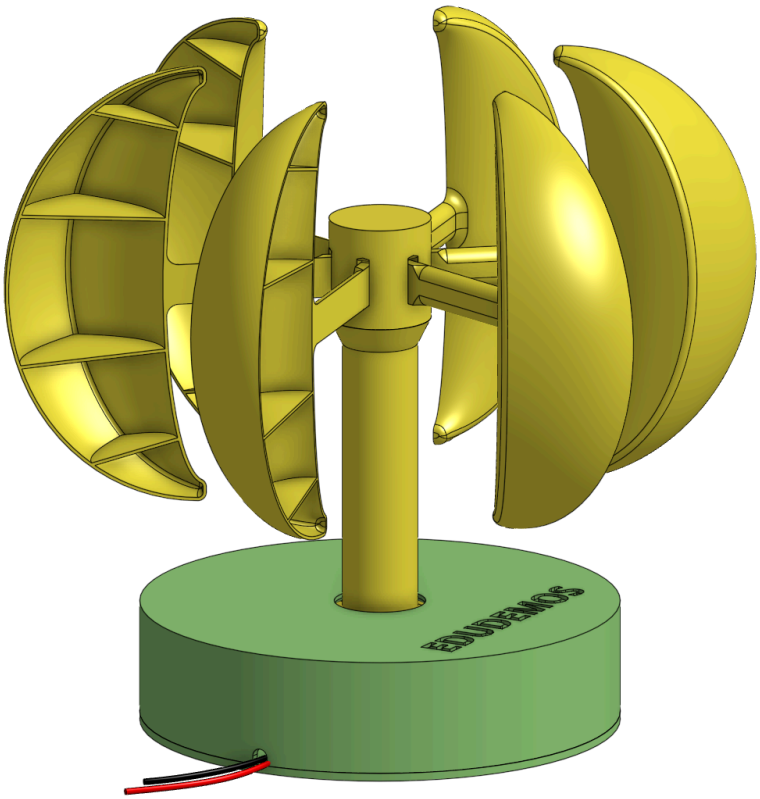
EDUDEMOS

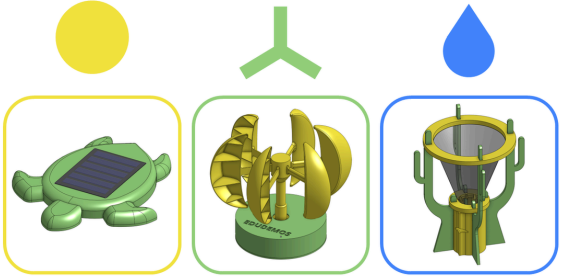
EDUcating through Sustainable **DEMO**nstrators

Assembly Guide

Modular Weather Station

Wind Turbine Module





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Content

Materials

Electrical Components

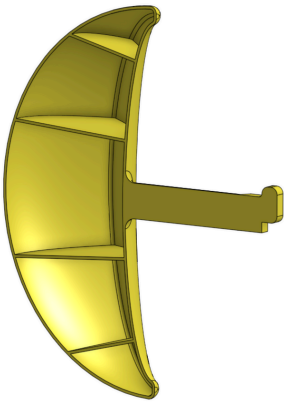
- 2x Wires, length: at least 20cm
- 1x DC Motor
- 1x Bearing 608zz (8mm x 22mm x 7mm)

3D-Printer

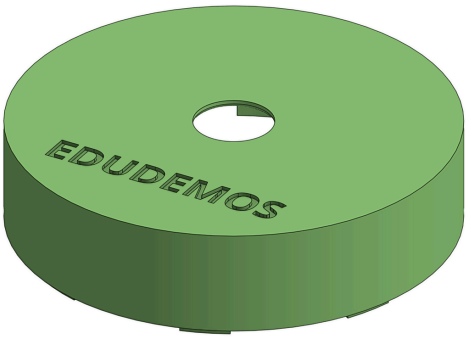
- 3D-Filament for the Windturbine (ca. 185g)

Materials

Shaft
x1

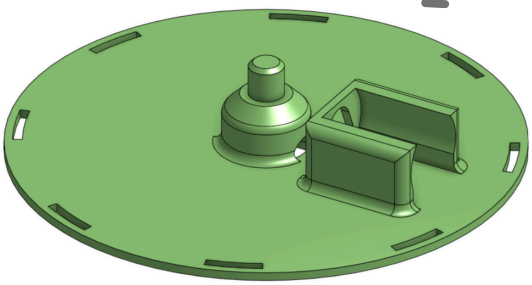


Shovel
x6

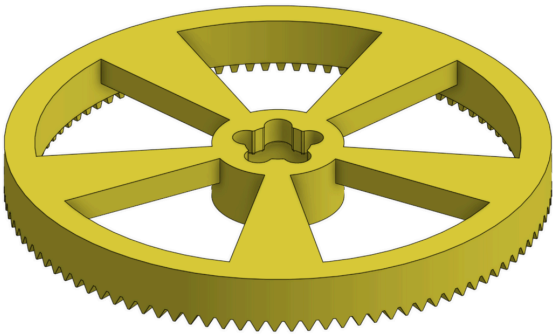


Lid
x1

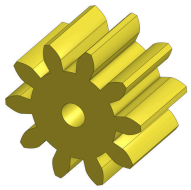
This part should be printed with higher wall count



Base
x1

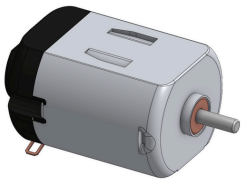


Large gear
x1



Small gear
x1

608zz Bearing
x1



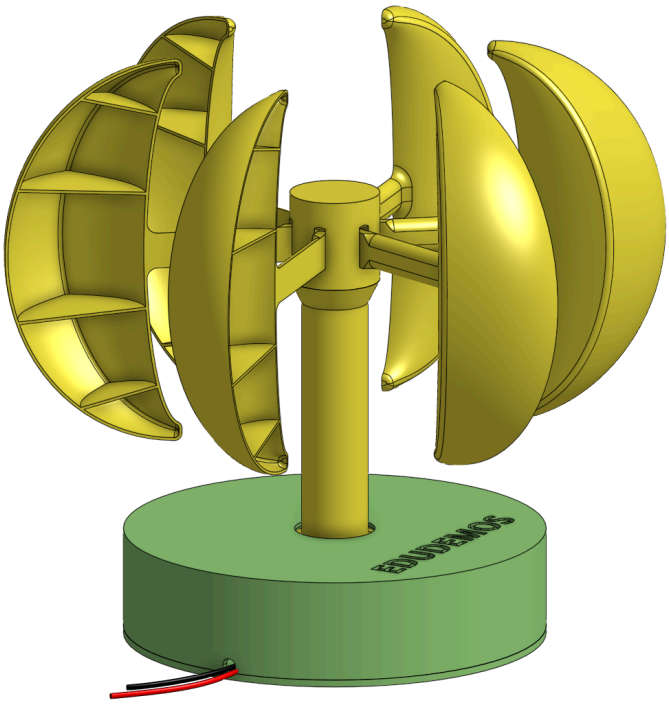
DC Motor
x1

Wire (>20cm)
x2

Total 15 elements

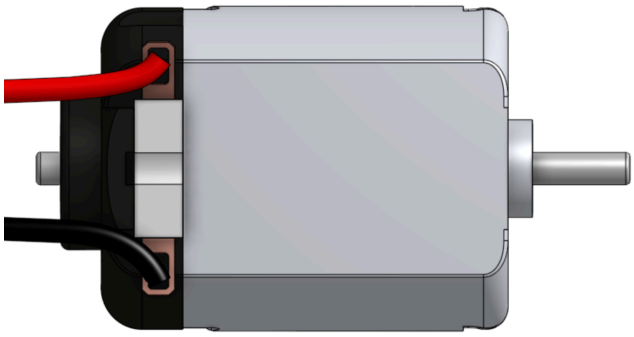
Step By step Instructions

a. Print the parts of the Wind Module on any 3D-Printer



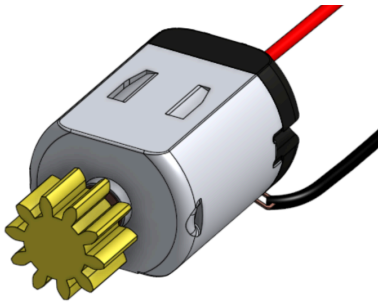
The STL-printfiles are available on the EduDemoS webpage.

b. Building the Wind Module

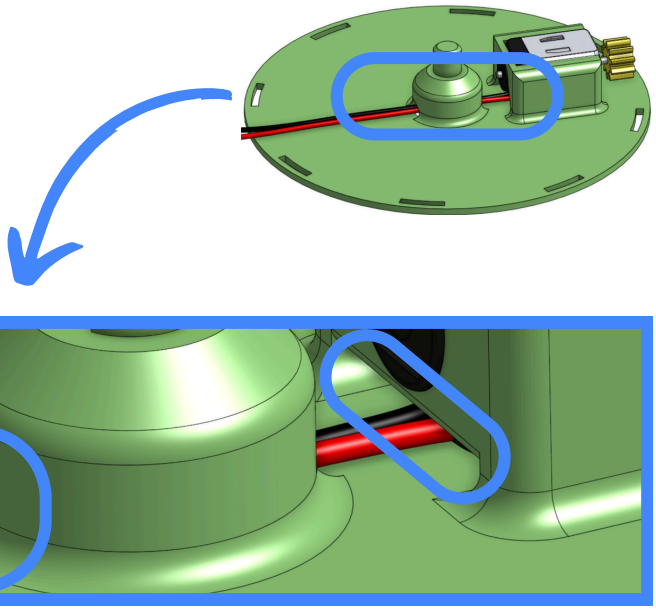


1. Each wire needs to be connected to the DC motor at its solder pads.
   - The easiest way is to solder the wires directly onto the pads.
   - If you don't have a soldering iron, you can try threading the wire ends through the holes or loops in the pads and twisting them together.

2. Stick the small gear onto the DC-Motor Axis and make sure it fits very tight.
   - If the gear is to loose try to fasten it with a drop of glue.

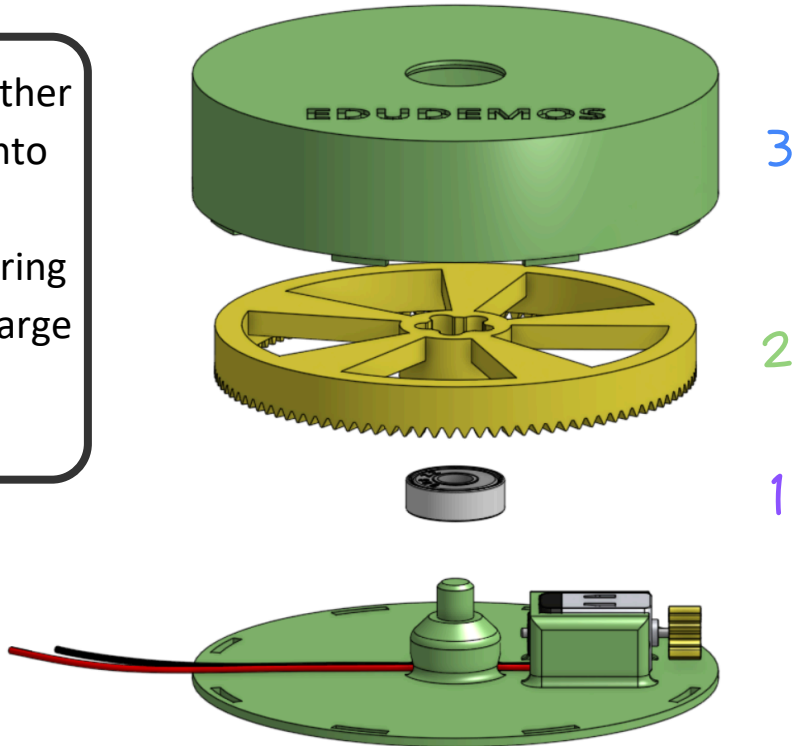


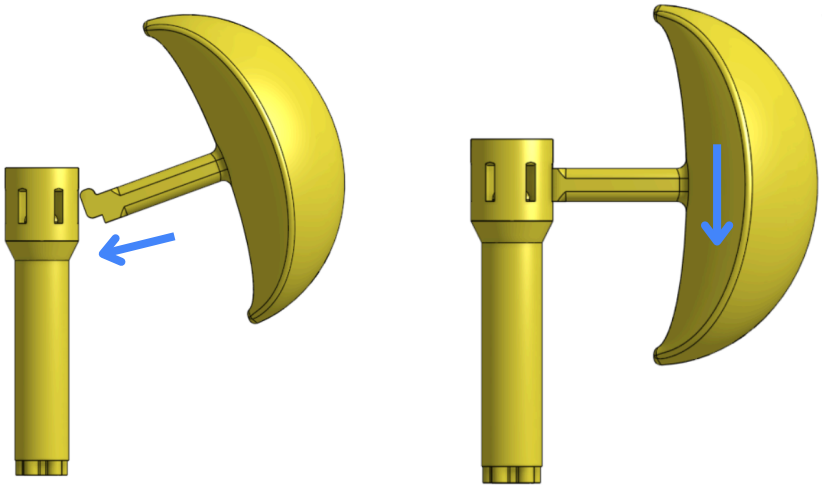
3. Now place the DC-Motor into its place on the 3D printed floor.
   - Make sure to guide the wire through the little tunnel as you can see on the close up picture on the right.



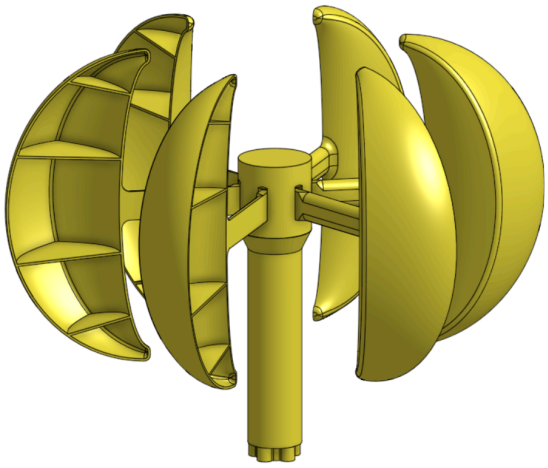
4. One after the other slide the peaces into their place.

- First: The Bearing
- Second: The large gear
- Third: The lid



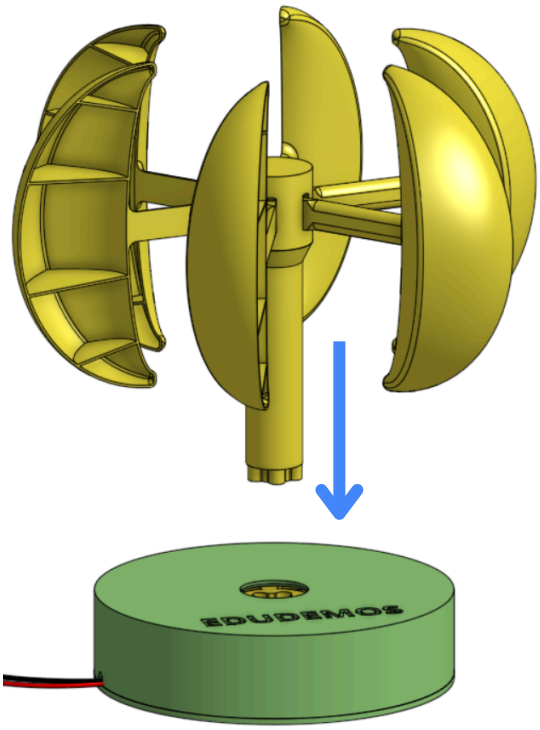


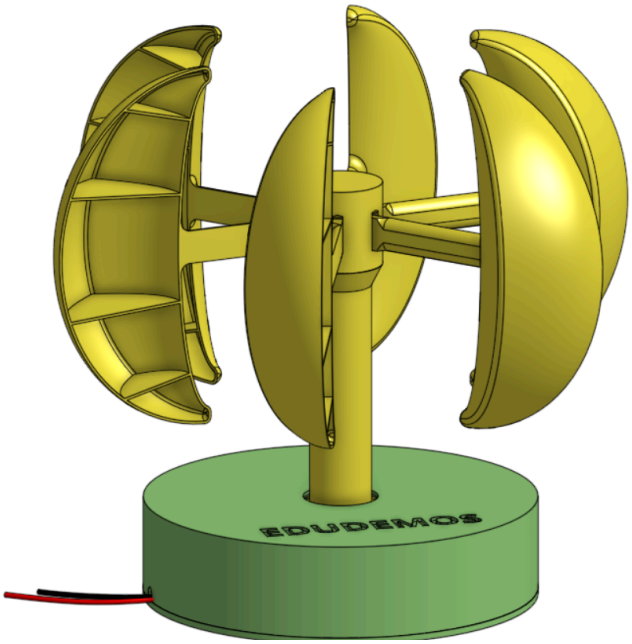
6. To connect the shovel with the shaft, slightly tilt the shovel upwards, push the end into the opening and once it is in, push it carefully down until you feel it click into place.



7. Repeat the previous step six times until all shovels are connected

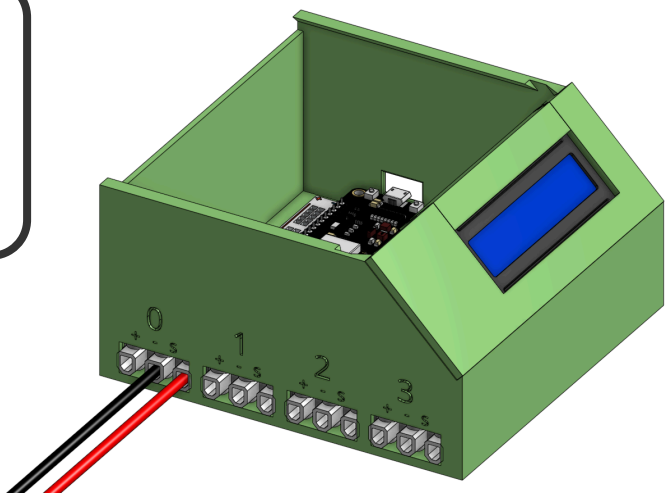
8. Last but not least slide the shaft with the shovels into its place on the base.





9. Make sure the turbine can rotate smoothly and has good contact with the motor gear.

10. Finaly you can connect the Wind Module. Connect the wires to the “-” and the “s” terminals.



11. If you're having trouble seeing any voltage generated, check the wiring. The two wires should be connected to the '**-**' and '**s**' slots, but you may need to switch between the '**-**' and '**s**' slots to ensure proper connection.

What other modules can you imagine?

Personalize your own demonstrator, and share your ideas and feedback with us at *edudemos@technikmachtspass.org*

Attachments

Licensing

All Circuits were created with Fritzing.

Some images are based on moduls from GrabCAD Library.

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Get In Touch With Us

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