



Sustainable Development Goals in Education



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Kiluikui – solar cook 'n charge

A solar cooker to produce electricity

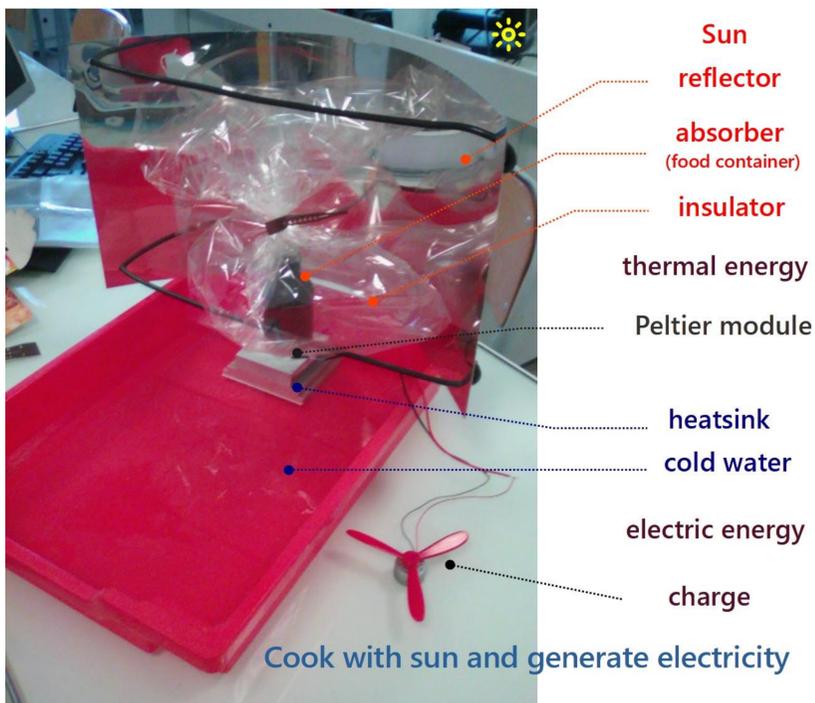
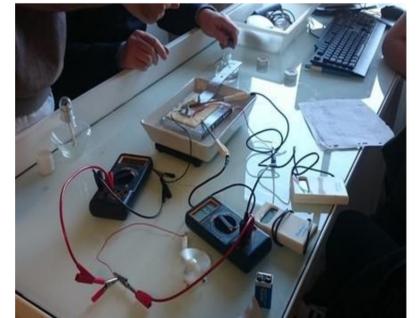
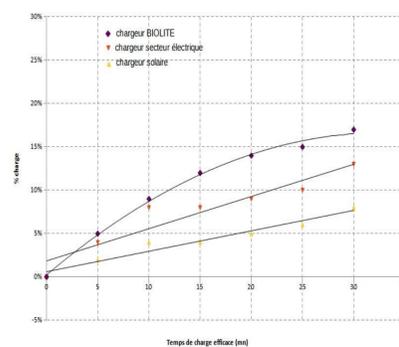
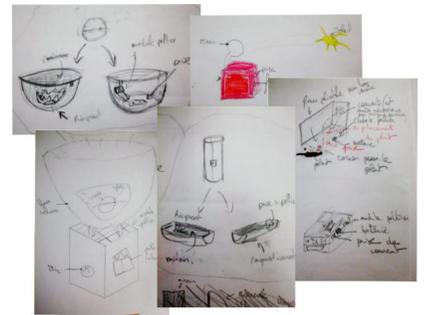
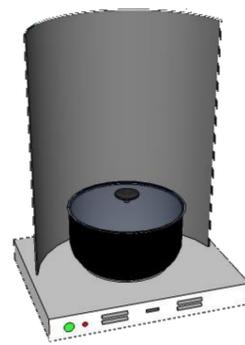
Summary

The aim of the project is to test the feasibility of a device that cook and produce electricity to charge a phone battery with a sustainable development perspective.

The students, 13 and 14 years old, build a prototype of a solar cooker which can generate electricity.

The students also worked on communication tools, creating a logo, flyers and a 3D prototype.

They take an engineering approach, realize measurements, deal with energy conversion and transfer, electric power and more to achieve their goal.



hot source

cold source

working principle of the Kiluikui

Step by step

Students compare the characteristics of different phone chargers: a solar charger, a Peltier module charger and a mains charger.

Then they study and build solar cookers with reflectors, absorbers and insulators.

They also find a way to use Peltier modules as converters of thermal energy into electricity.

Finally, they determine the characteristics of their generator cooker and things to improve it.

Conclusion: This is a low cost STEM project including engineering, physics, technology, design and it makes students think about sustainable development solutions.