

STEM Education for Sustainable Development



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The first step is a self-made construction with the ultimate goal of saving energy and connecting education with sustainability. It aims to reduce our energy requirements by taking advantage of our daily habits and needs.



By combining simple items we managed to light up a step whenever we step on it.



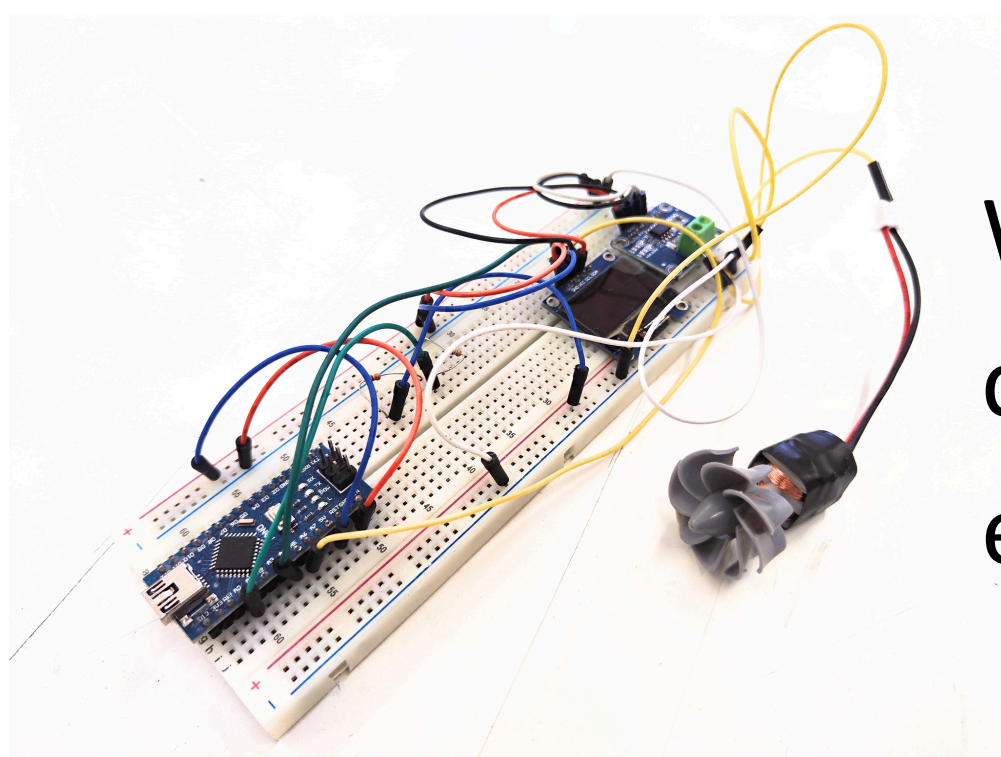
step



air pump



generator



We also created a Scratch program that collaborates with an Arduino and calculates the energy consumed by lighting up the stairs.

	Incandescent light bulbs 60W	LED lamps 7W	LED lamp of the step
Energy per day	15000 kWh	1750 kWh	0.55 kWh
Energy per year	5475000 kWh	638750 kWh	201 kWh
Cost per year	821250 €	95813 €	0 €

If 10,000,000 people go up one floor every day, turning on the lights of the floor, the total energy consumed is:

If we decided to sell the energy we produced in a whole year, we would collect in total 30.15 €

The first step consists of simple everyday materials and low-cost devices, combines the individual concepts of STEM education and approaches 3 goals for sustainable development (cheap and clean energy, sustainable cities and communities, climate action).



“And if you are on the first step, you must be proud and happy. Here where you have made it, it’s not a little thing. it’s great glory”
Kavafis 1899 | Greek poet