

# STEM Education for Sustainable Development

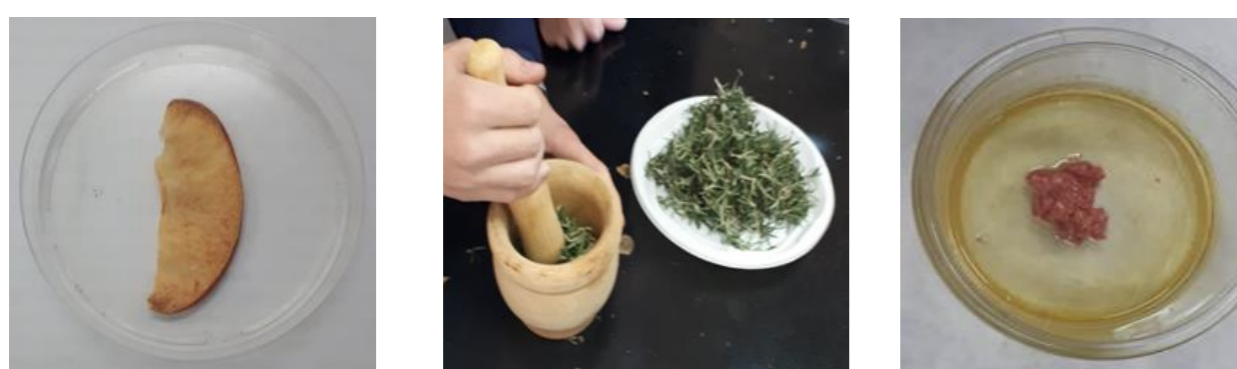


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## ACHIEVING THE SDGs THROUGH STEM TEACHING.

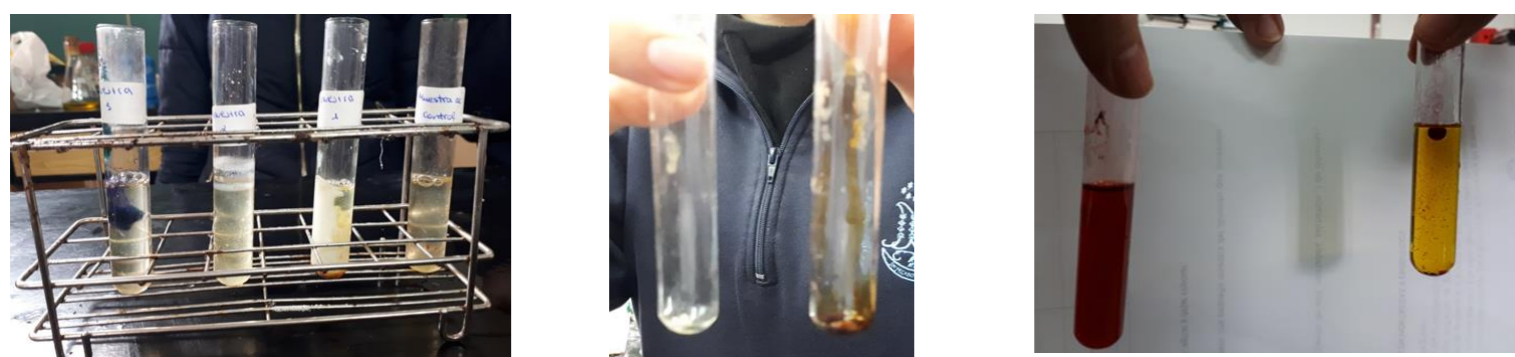
Committed to our students in the knowledge and implementation of actions that contribute to achieving the Sustainable Development Goals (SDGs) outlined in the 2030 Agenda, the idea of developing this project emerges, which explicitly covers 9 of the 17 SDGs, choosing those that best fit the curriculum of STEM subjects for teenager students and implicitly working with the remaining 8 SDGs. With this project, students are invited to deepen their understanding of the specific goal, reflecting on its importance and connecting it to their daily lives through experimentation in the laboratory; in some cases to test the effects that certain human habits have on the planet, and in others to experiment or build small projects that help achieve the proposed goals.

### SDGs 1 & 2: NO POVERTY, ZERO HUNGER Sustainable methods of food preservation.



Dehydration of an apple and extraction of rosemary essence with hexane

### SDG 3: GOOD HEALTH AND WELL-BEING Nutrient detection methods



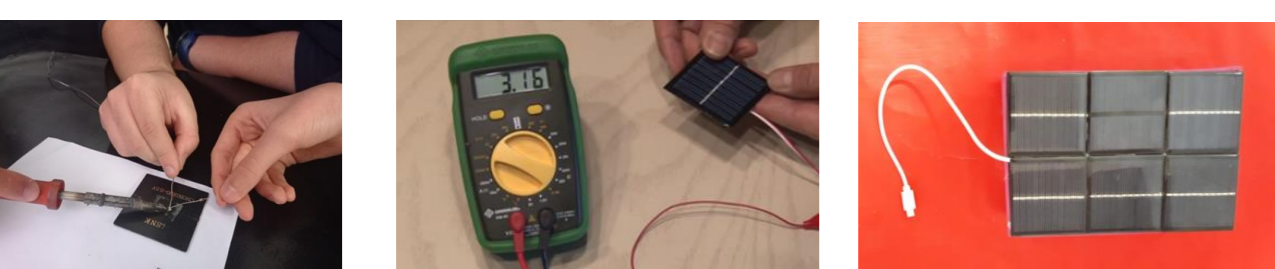
Identification of proteins, starch and lipid in different aliments.

### SDG 6: CLEAN WATER AND SANITATION Fabrication of a filter to remove As.



The particles of arsenic bind to iron hydroxide, and the resulting molecules are filtered through the cotton layer.

### SDG 7: AFFORDABLE AND CLEAN ENERGY Construction of a solar charger



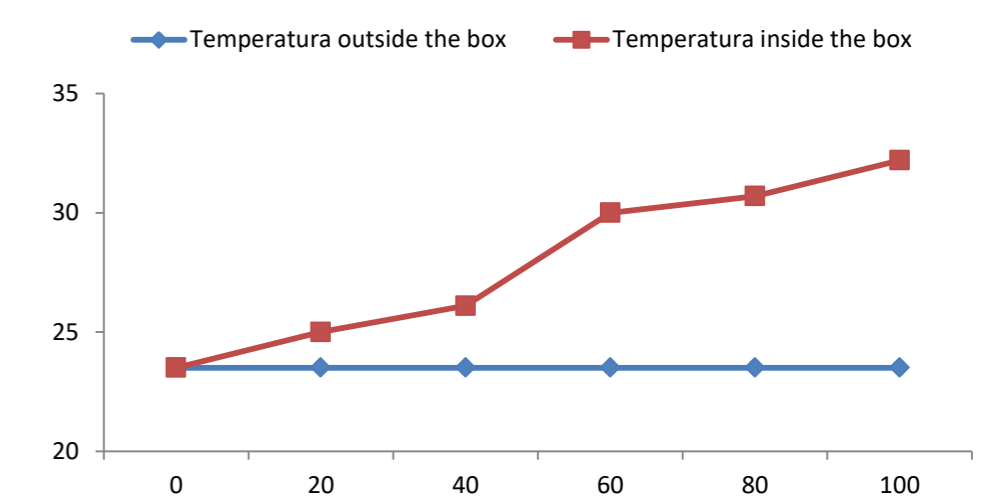
Components: a small solar cell, a standard diode and a cable with USB port.

### SDG 13: CLIMATE ACTION

Relationship between CO<sub>2</sub> and temperature, absorption of CO<sub>2</sub> in herbaceous plants and greenhouse effect on plants.



Greenhouse effect in plants



### SDG 14: LIFE BELOW WATER Ocean acidification.



Decreasing the pH of seawater with phenolphthalein by absorption of CO<sub>2</sub>

### SDG 15: LIFE ON LAND

Edaphology Practices on forest fire soil and no burned soil.



Hydrophobicity, pH comparative, presence of organic matter, presence of carbonates and detection of microbial activity.

In conclusion, the project has fostered educational environments focused on training and self reflection, centered around two principal themes: the planet and its people, from the contribution of the STEM subject's curriculum.