



ENERGY, SERVICE, AND ACTION

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NEED YOUTH AWARDS PROJECT. APRIL 2023. ROCHESTER SCHOOL
CHÍA, COLOMBIA



About Colombia




- Colombia is the second most biodiverse country in the world.
- Nowadays, Colombia has the sixth cleanest energy matrix in the world. This is because 68.3% of its electricity production comes from hydroelectric plants that produce a type of renewable energy known as hydroelectricity.
- Rochester School is located in Chia, Cundinamarca in Colombia. Is the first school in Latin America to receive the LEED Platinum certification from the US Green Building Council
- Rochester School has many projects to help protect the biodiversity in the country, such as tree planting and projects to preserve the Andean bear and the Cotton-top tamarin.



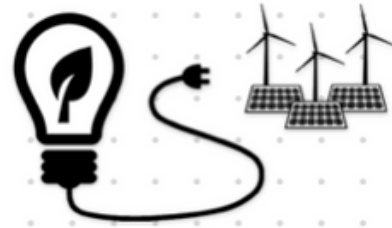


About Rochester School's 1st Ever Environmental Sustainability Course and Club!



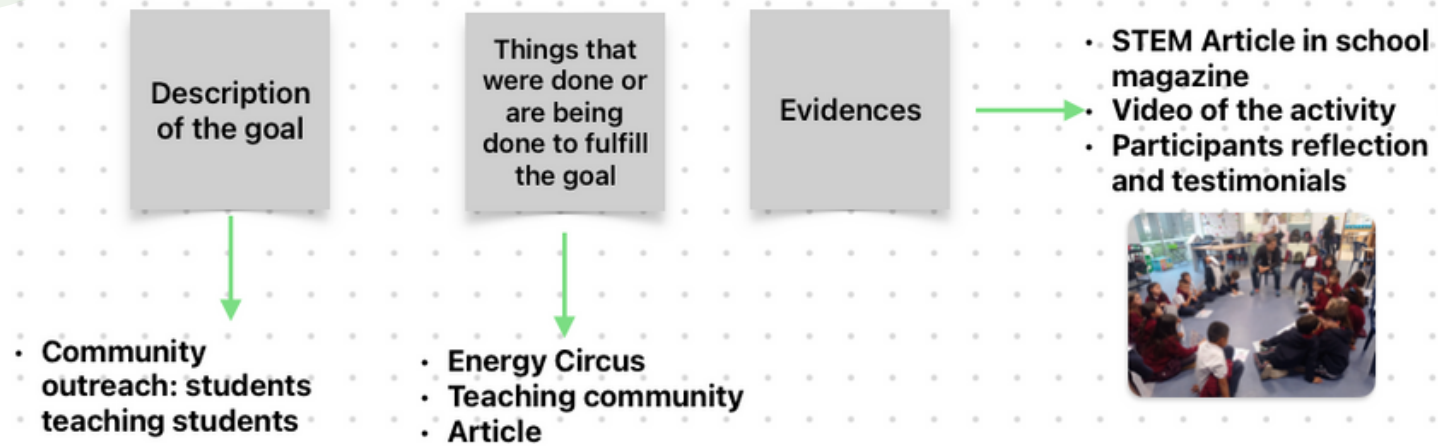
- The academic school year 2022-2023 was the first year we have ever had a course dedicated to Environmental Sustainability.
 - The expected outcomes of the Environmental Sustainability course are to encourage solving real world energy problems by designing and creating useful energy projects, teaching the community about energy production and efficient energy use habits, and encouraging students to teach other students and the community.
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Outline

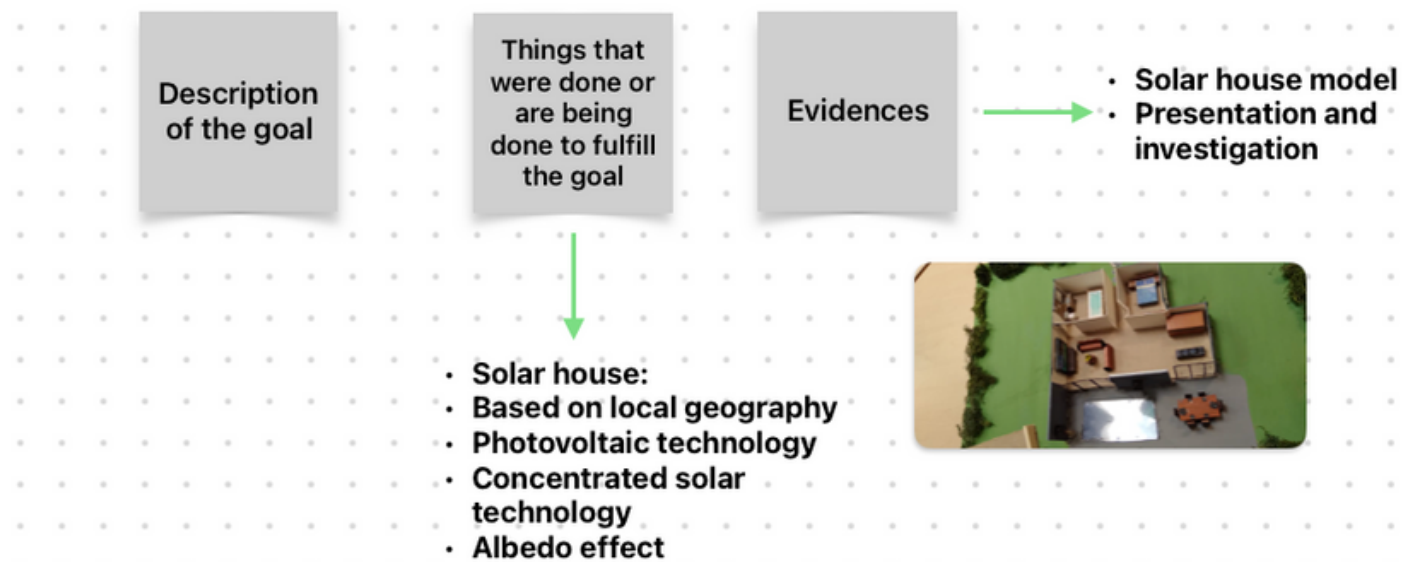


GOALS

Teach about renewable energy and transformation of energy



Propose sustainable house models to address Colombia's energy transition



About Rochester School's Environmental Sustainability Course

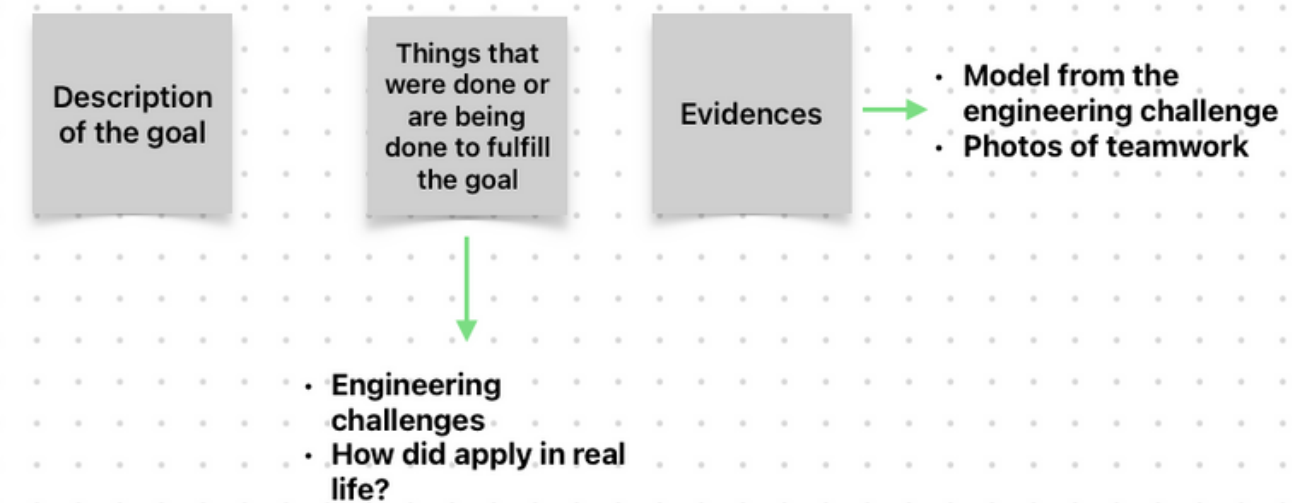
- Solving real life energy problems
- Energy Projects
- Teaching the community
- Encouraging to teach others



Organize and socialize Water Day: Raising awareness of the 2 billion people without access to clean water



Investigating about engineering throughout a design



Documentation



Article

Photos

RECERTIFICATION

Rochester School, the first school in Latin America to achieve LEED Platinum recertification

HOW LEED WORKS

LEED-certified buildings save money, improve efficiency, lower carbon emissions and create healthier places for people.

MAINTAINING A SUSTAINABLE CAMPUS

Maintaining a sustainable campus requires the constant commitment of the entire organization, and we must recognize and thank those who every day have the task of ensuring that the campus operates at the highest levels of efficiency.

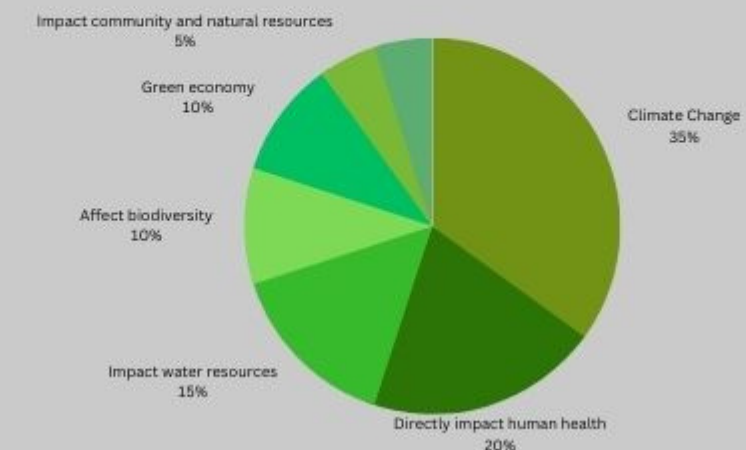
HOW LEED CERTIFICATION IS ACHIEVED

To achieve LEED certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality.



Rochester School takes action about how the country and the community of the school recycle and use renewable energies to keep our planet healthier. We want to keep track recycling and also how new energies are being applied in Colombia.

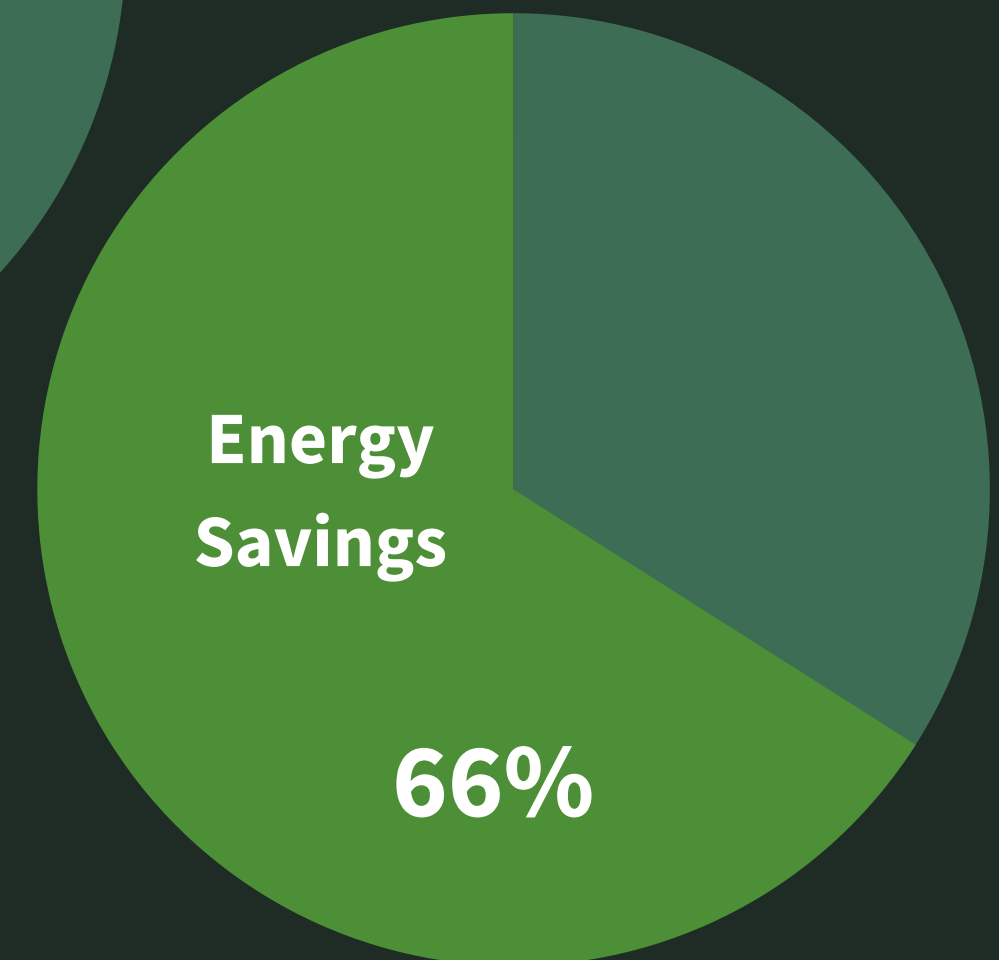
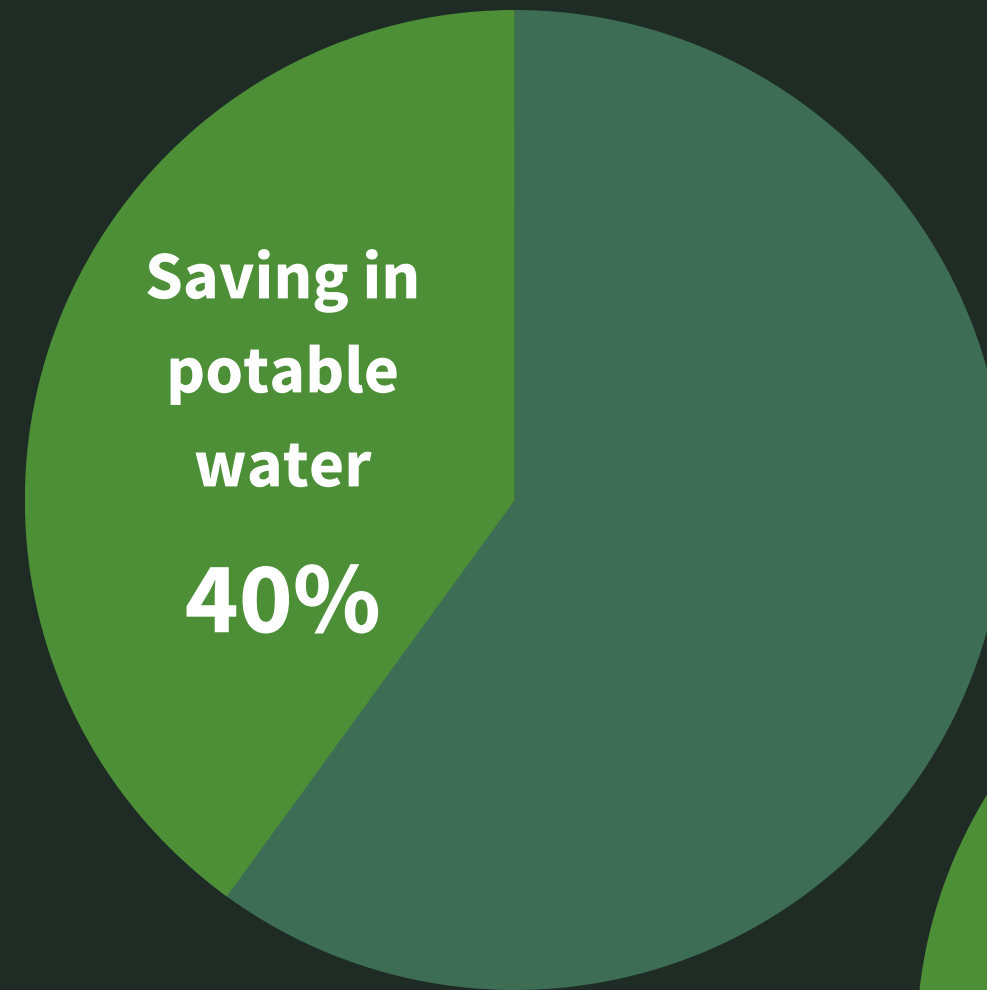
LEED SYSTEM GOALS





Community Actions that fulfill LEED Certification

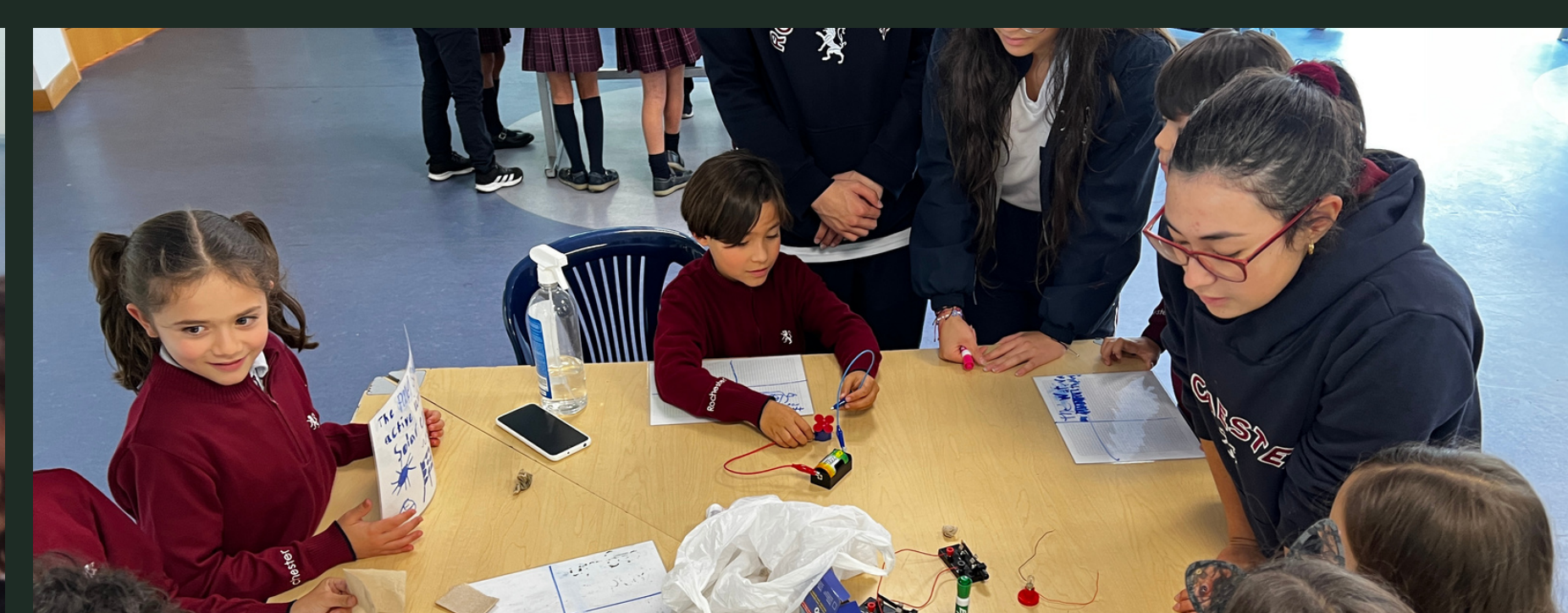
- Water Efficiency Systems
- The wastewater treatment plant is used at Rochester School to treat the used water and transform it again into usable water, this helps save water in the school.
- Solar energy for heating the aquatic center and producing electricity.
- By using solar panels, Rochester School saves energy. Solar Panels are implemented all around the school and provide most of the electricity in the classrooms





Goal #1: Teach about renewable energy and transformation of energy - Exemplary Community Energy Education

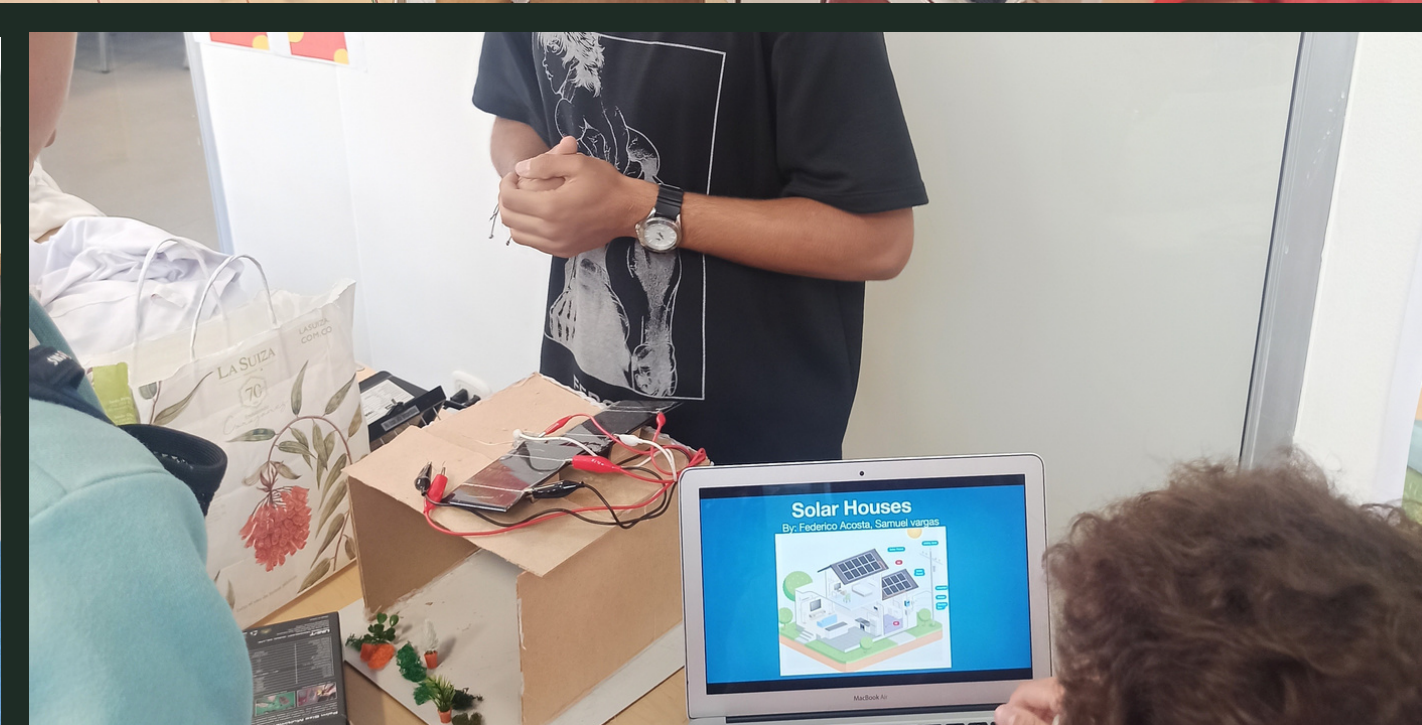
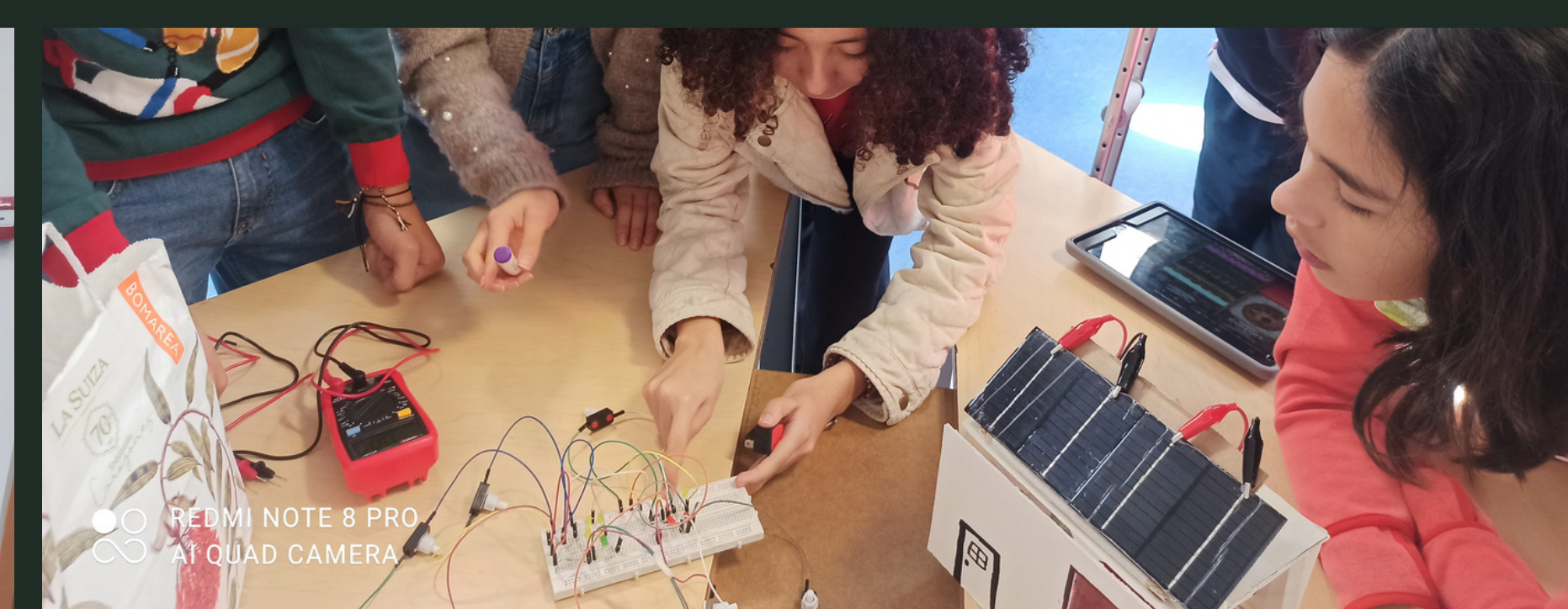
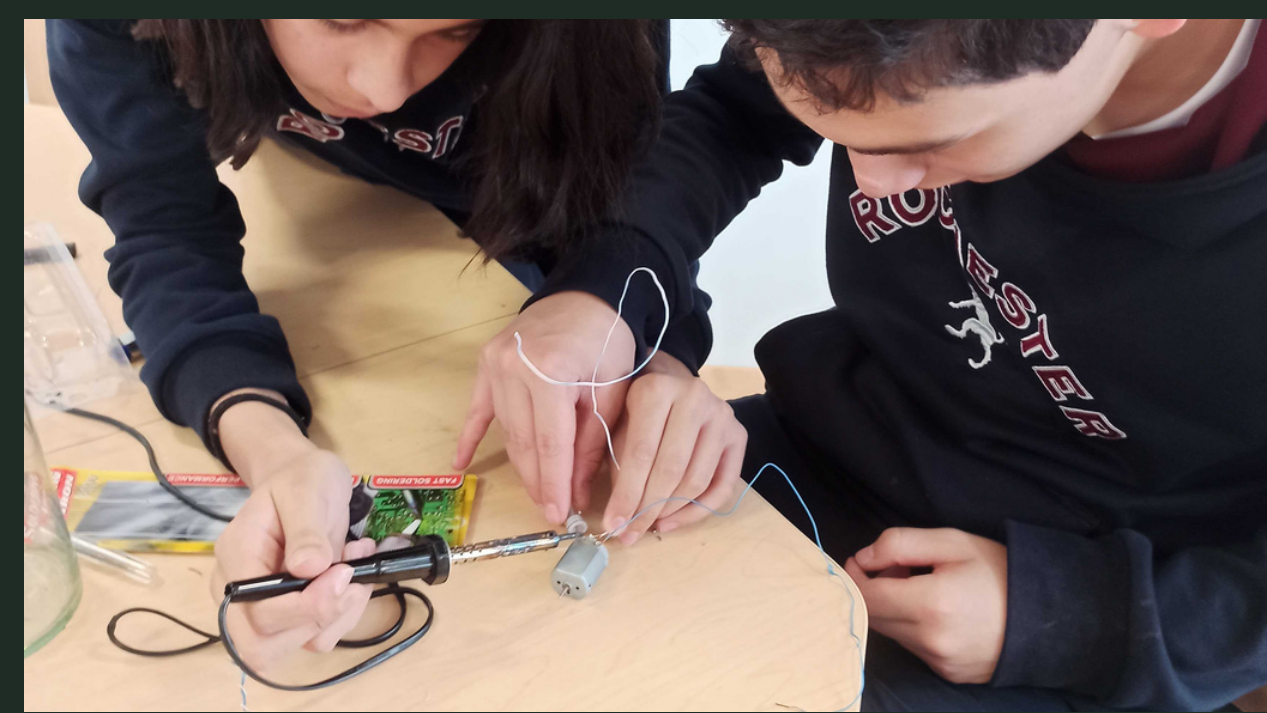
- Each year the school celebrates the Green Apple Day of Service. This year the students decided that teaching our youngest members of the community about energy and energy transformations was the best way to develop the next generation of thoughtful energy consumers.
- The purpose of this project was to teach the community about renewable energy and to show the teaching skills and autonomous work of the students.
- We taught 260 students from Kindergarten to 3rd grade about forms of renewable energy and energy transformations. For example, solar, hydro, and wind energy.
- Rochester School demonstrated an example of Exemplary Community Energy Education since teaching skills are demonstrated among students about sustainable energy and energy transformations.







Goal #2: Propose photovoltaic house models to address Colombia's energy transition-Engineering and Design

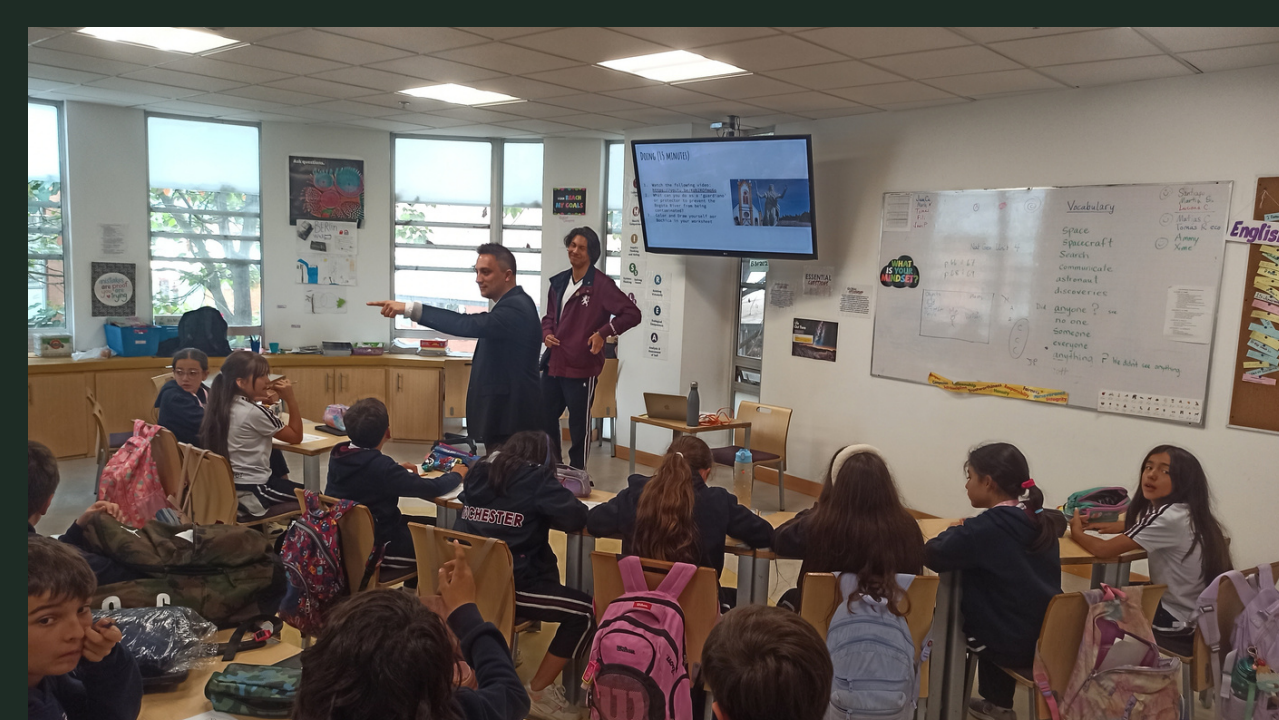
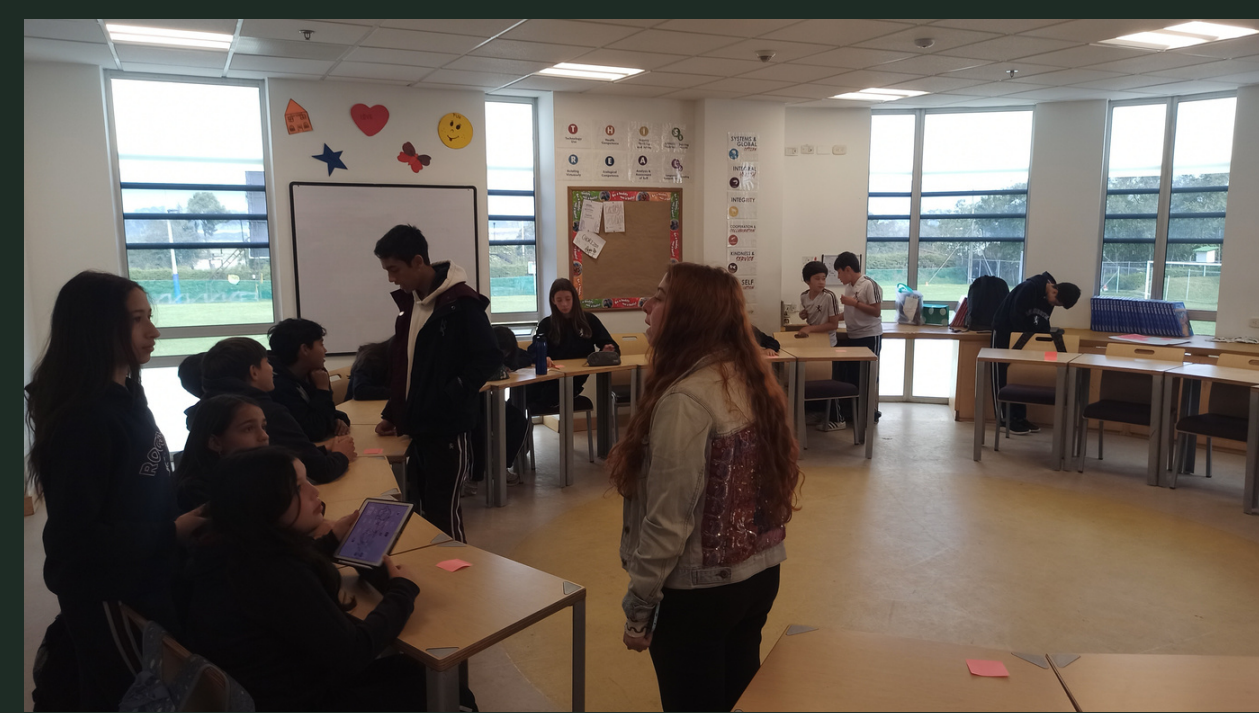
- Colombia doesn't have seasons, which is great for using solar panels since they can maintain the same angle and orientation year round . Students using concepts of solar energy & albedo effect designed their own solar houses in different regions of the country.
- The purpose of this activity was to teach students how to use renewable energy to benefit the community. In groups, students used recycled materials and a circuit of solar panels to bring their models to life.
- The government had proposed an initiative to build 100,000 solar homes in La Guajira, a place where it has been difficult to built an energy grid
- Students took advantage at the opportunity to propose building designs to the government and to investigate the initiative.
- The area of engineering and design was applied when making the solar houses. This project was useful for kids to investigate how different types of renewable energy can be applied in houses. Types of renewable energy such as solar panels were investigated as well as types of circuits.





Goal #3: Organize and socialize Water Day: Raising awareness of the 2 billion people without access to clean water

- Approximately 2 billion people around the world do not have access to safely managed drinking water services. On March 22 of each year, World Water Day is celebrated to raise awareness about the importance of this vital resource for the well-being of people and ecosystems.
 - Rochester School promotes the celebration of water day through different activities. For the younger children, a presentation was given to students from 1st-12th grade by the students of the Sustainability Club about habits to reduce the use of water and interactive activities such as the creation of necklaces or bracelets to remember what to do so as not to waste water. Especially when brushing your teeth.
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Goal #4: Investigating about engineering throughout a design- How can we support Colombia in its energy transition by completing engineering challenges? - School Energy Efficiency

- The school organized a series of engineering challenges focused on energy and energy transformations. The community took part is a series of qualifying challenges that they entered with video submissions.
- Winners were chosen and a Master Engineering Challenge was carried out with all the engineering challenged based on renewable energy.
- Rochester School apply to the area of School Energy Efficiency by learning how the different types of renewable energy work.
- We made a website: <https://energyday.rochesterapps.com/>



AS VÍDEOS



Summary of Achievements



- 36 participating members (some members not included in the photo)
- Over 600 hours of community service
- Community interactions with over 700 students K-12th
- LEED platinum recertification
- First course dedicated to environmental sustainability
- Completed projects designed to support Colombia in its energy transition.