



The power of the sun

Experiment about the creation of electricity with a solar panel

Type of pedagogical project, activity, action, accompanying	Experimental activity about electricity
Key words of relevant disciplines/ Pedagogical content	Electricity/Scheme/Renewable energy/Experiment.
Problematic	How to light a lamp with solar panels?
Thematic	Energy
Disciplines (sciences, geography)	Physics, Sciences.
Pedagogical Objectives/New targeted skills	<p>The students will be able to:</p> <ul style="list-style-type: none"> - understand how each material is used, - make a drawing and scheme, - discuss the differences between their drawings, - imagine and realize an electrical circuit (experiment).
Public target(s) (age, requested skills...)	12-15 years old
Description (step by step)	<p>Step 1) The teacher explains what are the electrical materials that will be used in class. Students are split in groups of 2 or 3 for the experiment</p> <p>Step 2)</p> <ul style="list-style-type: none"> - the teacher gives a battery and a lamp to each group and they have to light the lamp. - when they succeed, teacher leads them to the next activity. - the groups use solar panels, lamp and cables to try to make an electrical circuit and light the lamp. Students experiment on their own. They can use a multimeter to see the solar panel voltage. The teacher coordinates the activity and helps if needed. - when they succeed, they make a drawing showing the connection of a solar panel with a lamp.





	<p>Step 3) The teacher gives the general method on how to create an electrical scheme. http://www.ac-grenoble.fr/college/pays-de-gavot.st-paul-en-chablais/IMG/pdf_5e_symboles_electriques.pdf</p> <p>The students realize the electrical scheme of their experiment.</p>
Place (meeting room, outside space, ...)	Classroom
Individual and / or collective actions	Group of 2 to 3 students.
Material needed	Electrical equipment: solar panel, cables, classic lamps and LEDs, battery, crocodile clips and multimeter
Duration of pedagogical project or activity	1 hour
Evaluation of the new acquired skills	The realization of the scheme is the new acquired skill.
Eco-citizen adaptation, knowledge enhancement and links to other topics	<p>Link to Project: Adaptation to global change problems by creating an ecological house model</p> <p>Greek:</p> <ul style="list-style-type: none"> • http://ekfechanion.eu/files/dimotiko/Protaseis/e_taxi/ENOTITA%204%20ENERGIA/KEFALEO%203%20METATROPES%20ENERGIAS/P%2014%20fwtovoltaika.pdf • http://www.edutv.gr/index.php/perivalon-2/prasini-energeia <p>Italian:</p> <ul style="list-style-type: none"> • http://www.fondazionecriplo.it/Scuola21/upload/ent3/1/Energia%20solare.pdf • https://www.ecoage.it/pannelli-solari.htm <p>French:</p> <ul style="list-style-type: none"> • http://www.tpepanneauxsolaires.fr/utilisations.html • http://www.explorateurs-energie.com/index.php/les-energies/solaire





Observations	The solar panel might not be powerful enough to light a lamp. So, we can use a multimeter after to see the value of the voltage of the solar panel.

Pictures

Photo. (Collège Garcin)France



