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Sun light European Project

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2015 has been declared the year of light. Sunlight plays a major role in the world. From the sunbeams that heat our planet and feed our plants to the optical analysis of the sun or the modern use of sun particles in technologies, sunlight is everywhere and it is vital.
This project aims to understand better the light of the Sun in a variety of fields.
The experiments are carried out by students aged 15 to 20 in order to share their discoveries with Italian students from primary and secondary schools. The experiments will also be presented to a group of Danish students visiting our school in January. All experiments are carried out in English and involve teams of teachers.

This project is 3 folds:
part 1: Biological project = what are the mechanisms of photosynthesis?
part 2: Optical project= what are the components of sunlight and how to use it?
part 3: Technical project= how to use the energy of sunlight for modern devices?

Photosynthesis project
Biology and English

Context:Photosynthesis is a process used by plants and other organisms to convert light energy, normally from the Sun, into chemical energy that can later fuel the organisms' activities. This chemical energy is stored in molecules which are synthesized from carbon dioxide and water. In most cases, oxygen is released as a waste product. Most plants perform photosynthesis. Photosynthesis maintains atmospheric oxygen levels and supplies all of the organic compounds and most of the energy necessary for life on Earth.

Outcome: Our project consists in understanding the various steps of photosynthesis.
Students will shoot a DVD of the experiments presenting the equipments required, the steps of the experiments and the results they have obtained for a better understanding of photosynthesis

Digital pen project
Electricity, Optics and English

Context: Sunlight is a complex source of light based on white light that can be decomposed to explain light radiations or colours. This light is a precious source to create innovative devices.

Outcome:
In this project students will carry out various experiments to have a better optical understanding of sunlight. They will shoot tutorials and use these experiments to make a digital pen.

Solar Impulse Project Model aircraft
Technology, Electricity and English project

Context :
Solar Impulse is a solar plane that flew around the world with no stop using only the energy of the solar cells situated on its wings. The plane only requires an external source energy for take off unlike gliders. The pilot in the cockpit is one of the conception engineers. The plane can store enough energy for an 8-hour night flight.

Outcome :
This project will create a tutorial and a model aircraft of the plane Solar Impulse with solar cells providing energy for 4 engines, batteries, LED lighting and a tension reader. This plane will not fly.