



Nobel project

Teachers sheet



Location: ESRF

Duration: 1 ½ hours

Level: Last two years of secondary school, with a specialization in science.

Groups: 3 groups of 4 students

Scientific supervisors: 2

Content

This project is focused on the use of knowledge and skills acquired on radiant energy. The aim of the project is to make the students use a scientific approach, based on their skills and knowledge, in order to solve with a scientific issue. Students are given a document to assist them. Scientific experiments are necessary. In the end they are supposed to reach a conclusion.

In the curriculum

Observe

Electromagnetic waves
Colours of objects
Absorption, diffusion, transmission
Light-matter interaction
Energy levels
Energy of photons
Extract and use information coming from the analysis of spectra

Understand

Quantum emission and absorption
Photons and light waves

Create and innovate

Scientific and technological culture, science-society relationship
Scientific occupations

Transversal skills

Searching, extracting and organizing important information found in a document, a situation or an experiment.
Taking initiative, using critical thinking.
Thinking about a new situation in accordance with one's acquired knowledge.
Teamwork.