



BRAGG 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 exploration of the diffraction and interference phenomena for students who don't know anything about them, and on the use of knowledge and skills acquired about these phenomena for students who have already studied them.

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 radiation

Photons and light waves

Understand

Diffraction

Effect of the slit width and of the wavelength on the diffraction phenomenon

Monochromatic waves

White light

Interferences, measurement of the fringe spacing

Create and innovate

Scientific and technological culture, science-society relationship

Scientific occupations

Transversal skills

Searching, extracting and organising 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.