



PARSEL teaching –learning materials compiled by the consortium  
as part of an EC FP6 funded project (SAS6-CT-2006-042922-PARSEL).



## How do scientists work?

A 10<sup>th</sup> to 12<sup>th</sup> grades students' module for use in Integrated Sciences and  
Science for Public Understanding curricular areas

### Abstract

This task's main goal is to facilitate the construction of knowledge related to the nature of scientific knowledge. Students are expected to develop a conception of science as an enterprise, to face scientific ideas as transitory and subjective, which are influenced by the socio-cultural context. Finally, students are expected to face scientific ideas as based on the observation of the natural world, experimental evidence, rational arguments and scepticism.

This unique teaching-learning material is intended to guide the teacher towards promoting students' scientific literacy by recognizing learning in 4 domains – intellectual development, the process and nature of science, personal development and social development.

Its uniqueness extends to an approach to science lessons which is designed to be popular and relevant. For this the approach is intentionally from society to science and attempts to specifically meet student learning needs.

This uniqueness is specifically exhibited by:

1. a society related and issue-based title (supported in the student guide by a scenario);
2. student-centred emphasis on scientific problem solving, encompassing the learning of a range of educational and scientific goals;
3. including socio-scientific decision making to relate the science acquired to societal needs for responsible citizenship.

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**Developers: Pedro Reis**  
Institute: University of Lisbon  
Country: Portugal

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**Subject:** Integrated Sciences and Science for Public Understanding

**Grade level:** 10<sup>th</sup> – 12<sup>th</sup> grades

**Overall Objectives/Competencies:** The objective of this task is to facilitate reflection on scientist's activity. For that, students are expected to:

Write one fictional scientific story about the work of a group of scientist over a controversial issue related to a real life situation

Analysed in group one of the stories, considering several points (Scientists' characteristics, Scientific activity, Science, technology and society interaction)

Read the story to the class and discuss ideas presented

**Curriculum content:** Nature of science

**Kind of activity:** Written activity and discussion activity

**Anticipated time:** 1 hour at home + 3 lessons at school (40 to 50 minutes each)

Attached files		
1.	<a href="#">Student activities</a>	Describes the scenario in more detail and the tasks the students should perform
2.	<a href="#">Teaching guide</a>	Suggests a teaching approach
3.	<a href="#">Assessment</a>	Suggests formative assessment strategies

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