



PARSEL teaching –learning materials compiled by the consortium
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Planning a Space Trip to Mars

A 7th to 12th grades' students module for use in natural and chemistry sciences

Abstract

Planning a space trip to Mars as a way to discuss ecosystem dynamics and environmental problems.

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 learnign 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.

Developers: Galvão, C., Reis, P., Freire, A. e Oliveira, T. (2006). Avaliação de competências em ciências: Sugestões para professores do ensino básico e do ensino secundário. [Competence evaluation in science. Suggestions for basic and secondary education teachers]. Lisboa: ASA.

Institute: University of Lisbon
Country: Portugal

Subject: Chemistry sciences and Natural sciences (Biology and Geology)

Grade level: 7th – 12th grades

Overall Objectives/Competencies: The objective of this task is facilitate reflection on environmental issues, namely on the need to adequately manage environmental resources in order to survive. For that, students are expected to:

- Search for information on the website
- Analyse information concerning their initial questions
- Write an individual report where they present their decisions and their arguments
- Work in groups to make an overall plan of the trip to Mars
- Present their proposed plan to the class
- Defend their ideas and discuss other's ideas and arguments

Curriculum content: Ecosystem dynamics and environmental problems

Kind of activity: Problem solving (plan a trip to Mars) and decision making (concerning different information that can be useful for the plan)

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

Prior Learning: Some notions about ecosystem dynamics

Attached files		
1.	Student activities	Describes the scenario in more detail and the tasks the students should perform
2.	Teaching guide	Suggests a teaching approach
3.	Assessment	Gives suggested formative assessment strategies

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