



PARSEL teaching –learning materials compiled by the consortium
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How can we avoid energy losses in our school?

A 7th to 9th grades' students module for use in natural sciences and chemistry and physics sciences

Abstract

Excessive energy waste is a fact. So it has become extremely important to sensitize students about the need to manage energy consumption in a sustainable way, in order to protect environmental costs. So, this task's main goal is to improve the process of decision making and to promote the sharing of ideas amongst the students, by solving a problem related to energy losses at school and how to render it more energetically efficient. After performing this activity, it is expected that students become alert in what concerns energy waste and sustainable energy use.

This unique teaching-learning material is intended to guide the teacher towards promoting students' scientific literacy by recognising 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: Physics and Chemistry Sciences and Natural Sciences (Biology and Geology).

Grade level: 7th – 9th grades

Overall Objectives/Competencies: With this task, students are supposed to investigate how school manages energy use, in order that the school remains warm during the winter and cold during summer time. For that, students are expected to:

Develop a plan for resolving the initial problem (How can we avoid energy losses in school?).

Identify places and “equipments” from where energy losses or gains might occur, during winter as during summer.

Search for information and, based on that, suggest a number of actions for reducing energy transference.

Develop a pamphlet or a model about ways to render school energetically efficient and present it to the school community.

Curriculum content: Energy and heat

Kind of activity: Problem solving, project work and decision making

Anticipated time: 5 to 6 lessons (40 to 50 minutes each)

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	Suggests formative assessment strategies

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