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

Assessment

Teachers can make use of the school schema made by each group and its description about sources, types and transferences of energy, for assessing students' knowledge about energy transference, i.e., for assessing competences related to substantive knowledge.

This activity also allows developing reasoning competencies, namely in the research and the communication of results phases of the project. Teacher can assess these competences by taking into consideration creativity and the degree that each student can relate different knowledge domains, such as mathematics and mother and foreign languages.

For assessing attitudes, we suggest the following list (Table 1).

Attitudes	Student presents it	Student does not present it
Curiosity		
Respect for peers' opinions		
Paying attention to teachers' explanations		
Engagement with the tasks		

Table 1 – Attitudes' assessment

All phases of the project have to be assessed. Indeed, the continuous assessment might help students to reformulate and to re-orient their research. As a result, it is important to previously define assessment moments, when students can point their difficulties and new learning.

In the assessment, all the products (pamphlets and models) should be taken into consideration too. One could make up a contest, defining functional as well as aesthetic criteria for assessment, and the judges could be the professionals working in the different school sectors or even in related community sectors.

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.
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For assessing student engagement with the project, teachers can use a simple scale as the one presented next (Table 2).

Assessment criteria	Good	Fair	Poor	Non applicable
Student accepts responsibilities				
Student is punctual and accepts the rules				
Students finishes his/ her task on scheduled time				
Student contributes to the group discussion				
Student makes an effort to learn				
Student meets timetables and deadlines				
Student works collaboratively with the others				

Table 2 – Assessing student engagement with group work

The projects end up with a written final report, which can also be assessed. Next we present a list with assessment criteria (Table 3).

Assessment criteria	Description	Score
Ideas and its development	Final report presents an extensive development of the ideas. Main idea is well-grounded with details	4
	Final report presents a fair development of ideas, with many well-grounded details.	3
	Final report presents an appropriate development of ideas, which are supported by some details.	2
	Final report presents a poor development of the ideas, which are supported by only few details or even none.	1
General organization	Final report presents good organization – the ideas follow a coherent line and are divided into themes.	4
	Final report presents fair organization, although there is no clear guidance line.	3
	Final report presents poor organization - there is no coherent line bridging each theme.	2
	Final report presents lacks organization ….	1
Data organization	Data is well organized, divided into categories of analysis and displayed in tables in ways that facilitate its reading.	4

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	Data is displayed sometimes in tables, which are sometimes easy to read	3
	Some data are displayed in tables, but other is dispersed	2
	Data is badly displayed and of difficult reading	1
Graphical representation (if applicable)	Graphics are well built and appropriate to type of data. They can be easily interpreted.	4
	Graphics are appropriate to type of data, but can not be easily interpreted.	3
	Graphics involve some data distortion and can not be easily interpreted	2
	Graphics distort seriously the data, making almost impossible its interpretation.	1
Vocabulary	Imaginative use of words. Correct use of scientific words.	4
	Good use of words, with a clear meaning. Correct use of scientific words.	3
	Fair use of words. Uses simple words. Correctly use of scientific words.	2
	Poor and sometimes incorrect use of words. Incorrect use of scientific words.	1
Language use	Excellent written text. No orthographic mistakes and sentences of different sizes.	4
	Good written text. Few orthographic mistakes and sentences somewhat varies in their sizes.	3
	Simple written text. Some orthographic mistakes and use of simple and small sentences.	2
	Poor written text. Many orthographic mistakes.	1

Table 3 – Assessment of a written report