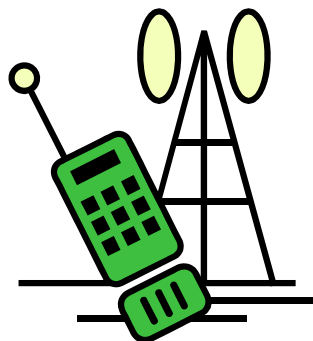


Teaching –learning module compiled by the PARSEL consortium  
 as part of an EC FP6 funded project (SAS6-CT-2006-042922-PARSEL) on  
 Popularity and Relevance of Science Education for scientific Literacy



# How can I design a cellular phone that is safer to use?

A grade 10-11 science (science in context in society, design-based science) module on  
 Electromagnetic radiation



## Abstract:

In this activity students are introduced to the design project and they are provided with an overview of some of the activities they will be participating in. This lesson introduces the context of their design project and it provides the motivation to hook them into being interested in the project. Students watch an ABC news video on cell phone safety and they participate in an activity that has them evaluating the facts and opinions found in the video. The teacher gives an overview of the design process and the students participate in an activity that introduces them to the concept of a target market. Students end this lesson by creating their first concept sketch of their ideas and getting feedback in a pin up.

Sections included		
1.	<a href="#">Student activities</a> (for the students)	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>	Gives suggested formative assessment strategies
4.	<a href="#">Teacher notes</a>	States the theoretical physics and gives the expected calculations

**Developer:** Rachel Mamlok-Naaman, David Fortus and Charles Dershimer  
**Institution:** University of Michigan  
**Country:** USA



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**Overall Objectives/Competencies:** The students are expected to:

- \* understand the project's goals and objectives
- \* understand the design process
- \* understand the concept of a target market
- \* produce their first concept drawing

**Curriculum content:** Electromagnetic radiation

**Kind of activity:** Critical reading and group activity

**Anticipated time:** 2 lessons

**Prior Learning:** not required

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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 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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