

Teaching –learning module compiled by the PARSEL consortium
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Popularity and Relevance of Science Education for scientific Literacy

For Teachers



Boiling point as a matter of geography

A grade 10-12 science (chemistry) inquiry laboratory about boiling by cooling.



Abstract:

The subject of this inquiry-laboratory activity is the possibility to boil water in a temperature that is different from 100°C. This phenomenon is connected to many situations that the students meet at real life, like: pressure cooker, different cooking time on high mountains, using pressure suits by pilots and astronauts etc. The inquiry laboratory activity gives the students the opportunity to explore their own questions and to experience all the stages of scientific inquiry.

Sections included		
1.	Student activities (for the students)	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
4.	Teacher notes	States the theoretical physics and gives the expected calculations

Developer: Relly Shore

Institute: The Weizmann Institute of Science

Country: ISRAEL



Overall Objectives/Competencies: The students are expected to:

- * understand the dependence of the boiling temperature of a liquid on the pressure.
- * perform an experiment
- * ask questions
- * formulate an inquiry question and a hypothesis
- * conclude conclusions
- * write a report

Curriculum content: Boiling, Vapour pressure, Intermolecular forces

Kind of activity: Inquiry laboratory.

Anticipated time: 4 lessons

Prior Learning: 3 states of matter, Pressure.

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 real life to science and attempts to specifically meet student curiosity.

This uniqueness is specifically exhibited by:

1. an issue-based title (supported in the student guide by a scenario);
2. student-centered emphasis on scientific problem solving, encompassing the learning of a range of educational and scientific goals;
3. connecting the main problem to real life interesting phenomena, as is mentioned in the teachers guide.

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