

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



Would you have dropped the nuclear bomb?

A grade 10-12 physics module on
The Manhattan Project

Abstract:

In this activity students will play a role play about the Manhattan project. They will be placed in groups in which each of them play a particular real historical person who was somehow involved with the development of the first nuclear bomb. The task of the group is to discuss various issues concerning the war between Japan and USA in the 1940s, and the usage of the nuclear bomb. These discussions must lead to the group giving advice to President Truman on whether or not to drop the nuclear bomb.

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

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Institution: University of Southern Denmark and Povo Piu, respectively
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These activities enable students to strengthen their competencies of

- Working and communicating in groups
- Understanding and communicating about
 - o the structure of atoms and isotopes
 - o the fission process in a nuclear bomb
 - o the damages of radioactive radiation
 - o the historical situation between USA and Japan in the 1940s
- Navigating aspects of the history of science
- Being reflective and critical about past, present and future science and technology progressions.
- Taking ethical stance towards aspects of science and technology

Curriculum content: Atomic particles, fission and radioactive radiation

Kind of activity: Role play

Anticipated time: 4-12 lessons

Prior Learning: Atomic particles, fission and radioactive radiation

This unique teaching-learning material is intended to guide the teacher towards promoting students' scientific literacy and quantitative literacy by recognizing learning in 4 domains – intellectual development, the process and nature of science and mathematics, personal development and social development.

Its uniqueness extends to an approach to science and mathematics 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 and mathematical problem solving, encompassing the learning of a range of educational and scientific goals;
3. including socio-scientific decision making to relate the science and mathematics acquired to societal needs for responsible citizenship.

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