

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



Salt – the good, the bad, and the tasty

A grade 10-11 science (chemistry) module on
salt, its properties, uses and effects on human health



Abstract:

Salts (and among them sodium chloride - cooking salt) are a main class of inorganic compounds. Sodium chloride is found dissolved in sea water, but also as mineral salt that may come under various colours. Salt crystals, other crystals, and crystal structure are studied, and a method for growing large crystals is developed. The concept of electricity conducting materials and especially of electrolytes, and further the concept of ionic bonding are introduced. Finally, the many uses of salt, and its positive but also negative role in our health are explored.

Sections included

1.	Student activities (for the students)	Describes the learning 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	Extend the chemistry and physical chemistry of salts and provides further material for the connection of salt to human health.

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Overall Objectives/Competencies: The students are expected to:

1. Get to know that salts are a main class of inorganic compounds.
2. Study the origin of salt.
3. See beautiful salt crystals and study crystals, crystal structure, and even grow their own big salt crystals.
4. Find out that melted salt or aqueous salt solutions are electricity conducting materials and further be introduced to the concept of ionic bonding.
5. Study the many uses of salt, and its positive but also negative role in our health.

Competences: Investigative skills, manipulative skills, communication skills.

Curriculum content: Chemistry, geology, health education.

Kind of activity: Salt crystals are beautiful, and provide students the chance to study crystals and crystal structure. Further, they will grow big salt crystals. Through the study of ionic conductivity of melted salt, the concept of ionic bond can be introduced. The many uses of salt, and its positive but also negative role in our health are explored.

Anticipated time: 3 teaching periods at school, plus at home study and project work, plus experimental activities at home.

Prior Learning: Salts, solution chemistry.

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. student-centred emphasis on scientific problem solving, encompassing the learning of a range of educational and scientific goals;
2. including socio-scientific decision making to relate the science acquired to societal needs for responsible citizenship.

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