

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



Growing plants – Does the soil make a difference?

A grade 6-9 science (chemistry) module on
various kinds of soil and their suitability for growing plants



Abstract:

In this Activity, students collect soil samples and characterize them by examining their physical appearance, water-holding capacity, sedimentation, and pH. Based on their observations, they can see that different samples of something as universal as soil can be quite different from each other.

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 physics of carbon dioxide and gases.

Developers: Georgios Tsaparis

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Objectives. With this activity, students will:

1. Prepare various samples of dry soil and record their observations.
2. Understand the role of pH for the growing of different plants.
3. Acquire the knowledge and ability to check the pH of a soil and to modify the pH of a soil.
4. Acquire a practical experience of examining the effect of the soil pH on the growing of a particular plant (beans).

Competences: investigative skills, team work, manipulative skills, communication skills.

Curriculum content: Plant biology, agricultural studies, chemistry

Kind of activity: Work in class and in the lab (in groups of 3-5 students).

Anticipated time: 4 teaching periods at school, plus pre-activity preparation and other activities at home. .

Prior Learning: Solution chemistry, acids, and bases

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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