

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

Preventing Holes in Teeth

– are beliefs justified?

A grade 8-9 science (biology) module on
tooth decay and its prevention



Abstract: This module explores the reasons behind tooth decay and the role of toothpastes. It explores the value of fluorides in preventing tooth decay and other beliefs that have been put forward over the ages to prevent the lost of teeth through decay. The module considered whether the beliefs are justified.

Sections included		
1.	Student activities	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	Gives background information and activities using toothpaste

Overall Objectives/Competencies: The students are expected to:

- Development of social values through considering a social and economical problem with tooth decay.
- Development of scientific skills through designing and performing experiments with toothpaste.
- Enhancement of personal skills in allowing students to practice co-operative report-writing as a member of a team and by participating in group discussions. With the organizing strategies we have suggested, each student has a personal responsibility to report the findings of his/hers group to a new arrangement of groups.
- Enhancement in science conceptual learning by studying the background of tooth decay from chemical and biological aspects and also the concept of hardness of various substances.

Curriculum content: Tooth Decay

Kind of activity: Library search on causes of tooth decay, Devise tests on the abrasive action of toothpaste, Group discussion on problems with tooth decay from a personal and an economical perspective; are beliefs in preventing tooth decay justified.

Anticipated time: 5 Lessons

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.