

Sparking off pupils' interest in Natural Sciences
by experimenting with Ecotechnologies

Project Partners



University of Applied Sciences Zurich,
Switzerland
Institute of Natural Resource Sciences
www.unr.ch



University of Aarhus, Denmark
Department of Biological Sciences
www.biology.au.dk



LIMNOS Ltd., Slovenia
Company for Applied Ecology
www.limnos.si



Norwegian University of Life Sciences
Norway
www.umb.no



BDZ, Training and Demonstration Centre
for Decentralised Sewage Treatment
Germany
www.bdz-abwasser.de



Mid Sweden University, Sweden
www.miun.se

Project Goals

The project addresses Natural Sciences education at primary schools (ages 10-13). It provides teachers with ready to use teaching materials and instructions for experiments in the field of ecotechnologies. Thus, students' interest in Natural Sciences will be sparked and in the long run, a career in this field will become more appealing to them.

The project team consists of universities and research centres from six countries, all of which are active players in the field of ecotechnology. Their work focuses on topics like sustainable wastewater treatment, recycling of nutrients, and closing of ecological cycles in general.

Based on their research in ecotechnology, and in collaboration with pedagogical experts and teachers, the partners developed classroom systems and learning paths, which were tested by primary school teachers and are now available on the web.



Concept study of an aquaponic system by a pupil of primary school in Sweden.

Teaching Units

From fish to tomatoes

By constructing and operating a classroom aquaponic system, pupils learn that fish wastewater is rich in nutrients and therefore suitable for irrigation and fertilization of plants. They discover that purification processes are common in nature and that they can be used to produce fish and plants in a sustainable way.

Plants clean water

A classroom model of a constructed wetland demonstrates the interdependence between the purification of wastewater and the production of biomass. Based on this model related topics such as the water cycle and wastewater treatment mechanisms can be addressed in the classroom in a playful way.

The compost factory

By constructing their own composting system pupils gain understanding of degradation processes in soil. Through manipulation and observation of the system they discover differences in degradation of different materials (vegetables, grass, tree cuttings vs. plastic, paper etc.) Thus they can draw their own conclusions on how to deal appropriately with waste.

Secrets of rivers

On a field trip, pupils research different aspects of river ecology such as a river's self purification. They learn why this occurs, and that this process corresponds strongly with man-made water treatment systems.



www.play-with-water.ch

Contact: Ranka Junge, Zurich University of Applied Sciences, CH-8820 Waedenswil, ranka.junge@zhaw.ch