

Draft

»Let's Talk About Soil« project deals with environmental, ecological and cultural European heritage. The main subject is the importance of the soil as a natural source of ecosystems. In connection to every-day endeavours for protecting the environment and continual development the aim is also to encourage young people to mainly learn the approaches of natural science and other scientific approaches («Europe 2020« strategy goals), to enhance their linguistic skills and to form an attitude of respect for cultural heritage of European nations. The project combines natural science with art, history, history of science and ecology. The languages of the project are Slovene and English.

The project will last two years and it will include five cooperative schools from Slovenia, Poland, Spain, Italy and Netherland. The main coordinator will be the school from Slovenia.

We have selected the main topic (soil) because it is very poorly represented in the learning process and the students do not learn enough about the soil in school. The soil has become a self-evident part of our surroundings for us and we are consequently forgetting how important it is. We have been aware of the significance of clean air and water for quite some time now and these topics are appropriately covered in the curriculum across all ages in school. Despite this fact, we are not entirely aware of the soil function. Why do we know so little about the soil, why are we so poorly familiarised with it and why is this topic not included in the curriculum to a larger extent?

We know that the soil enables the vegetation growth and with this food production. It plays a part in decomposing of organic material and it holds in and releases carbon. The soil enables nourishments to circulate, it holds in, decomposes and neutralises damaging material, filters precipitation and fuels drinking water supplies. And still the modern man takes the soil for granted and overlooks its benefits. That is how the main theme of the project was selected. In 2013 the United Nations proclaimed 5th December as the World Soil Day and the year 2015 as the International Soil Year. The soil is an important natural source which performs numerous functions relevant for human existence and activity as well as preserving the natural balance. They can be defined as ecological (vegetation growth and food production, decomposition and transformation of substance, retention and filtration of water, a natural habitat for numerous organisms) and spatial functions (physical space for population and human activity). The spatial soil functions are in opposition to the ecological soil functions. The fact is that the soil is a limited natural source and the spatial functions should therefore be planned continually as most of them damage the soil in an irreversible way. The soil is a source of life as well as a source of fortune. It is no coincidence that the great cultures evolved in places of great conditions for food production, e.g. extensive plains, foot of a volcano, water vicinity. Diversity of original geological material, hydrosphere, biosphere and atmosphere together affect the soil origin and consequently produce many different types of soil. Therefore we wish to include various European areas in the project. They should differ in climate and in their geographical and lithological aspects. Hence the learning about and comparing different characteristics of soil and their effect on its current human activity would be possible.

Main specific goals of our project are:

- ability development for simple **observation and study of soil** as the surface part of Earth's crust, which under the effect of lithosphere, hydrosphere, biosphere and atmosphere, acquires specific qualitative abilities, that profoundly affect man's activity in the area,
- learning about the **methods of scientific study** and individual thinking, as well as peer cooperation between European countries in the scientific area,
- **enhancement in the interest in natural science**, which will in future enable students to complete technical studies and achieve interdisciplinary development,
- **improvement in digital literacy skills** by using certain computer programmes, web page design, electronic magazines, photogallery, etc.
- educating students about codependency between human activity and natural habitat functions (soil) in the regions of partner schools,
- forming the need for saving and **rational use of natural sources** (soil) – developing enterprise attitude and activities with benefits for local environment among young people in order to ensure continual good soil management,
- showing the possible **business opportunities** in connection with natural environment in the region (agriculture, tourism),
- presentation of **cultural heritage** of the partner countries and everyday life of local people,
- improvement in the **use of English** and learning other foreign languages,
- establishing basic **journalist skills**,
- **self-study, solving expert issues**, the development of team-work (including international context) and self-presentation,
- development of **artistic talents** via the inclusion of art into pedological topics,
- encouragement of **common European values** as openness, tolerance, respect to other cultures, etc.

Participants

The project is intended for young people aged between 13 and 17 who have not yet defined their interests in the field of further education as well as those who show great interest in this specific topic and wish to continue gaining their education in programmes connected to soil preservation and soil management. We want to include the young who often have no motivation to work and feel bored by the conventional ways of learning at school, the young who show different levels of knowledge of modern technology, the young who are open to gain new experience as well as those who want to gain knowledge in the field of foreign languages.

Among students of the partner schools there are also students of lower socioeconomic status, migrants, ethnic minorities or students living in peripheral regions. On the basis of experience, observation and interviews with students there is a great interest of participation in a project of European school partnership. Apart from that an analysis of their achievements in the field of topics related to the project was made, mainly, to discover the reasons for low efficiency in the process of learning about the topics of interest. An international project will be great motivation for students to learn and for teachers to react to the current need to increase the efficiency and the use of innovative ideas and methods in teaching.

One of the target groups are therefore also the teachers of the partner schools, especially those who teach the fields defined in the project. By taking part in the project teachers will gain a lot of specific knowledge of the field, educational experience, language and communicative skills and ICT skills which they will be able to implement in their work methods.

International cooperation will improve the quality of educational processes at all participating schools. Teachers will share their experience, improve their qualifications and increase the work efficiency of partner schools. International project meetings will be of special importance, as the common work plan will be developed there. International meetings are vital for students to be able to carry out pedological observation at various locations (according to the geographical position and the soil characteristics) to develop and compare the results at international level. By taking part in international meetings students will familiarize with different educational and scientific organizations and in this way strengthen the belief that the efficient goals of continual development and the creation of new technologies can be only achieved with common measures and cooperation.

Innovations

The project activities will include innovative new teaching methods and an interdisciplinary approach to handling the learning topics, which will complement one another. All participants will be connected interdisciplinarily, for the topics intertwined will be those of natural science, art and social science topics. By doing this, the students' ability of creative thinking will be developing.

The project introduces a change in the traditional approach to learning, because the activities will also be performed in a series of informal study forms. These will take place in the school surroundings, the natural environment, in interdepartmental educational units, in primary and secondary schools, colleges and faculties, as well as in research units. We find that educational topics and methods cannot efficiently adjust to fast and extensive technological progress and information dissemination. Variety of new technologies and on-line information can produce confusion in the students' learning process when used inexpertly. Therefore, the planned activities will offer the teachers great possibilities for the use of learning methods which activate the students' critical approach. The introduction of innovative approaches to teaching will have tangible benefits for the development of the students' knowledge and school action:

- 1) The programme of innovative pedagogical approaches will include:
 - a formal expansion of the curriculum by adding new topics regarding soil (separately for Slovenia: inclusion in the Slovene soil partnership coordinated by the Ministry of the Environment and Spatial Planning)
 - informal expansion of learning topics regarding soil which have so far not been adequately treated in the learning processes (examples of good teaching for all partner schools)
 - an innovative inclusion of broader learning topics connected to soil which will enable the students to enhance their applicable knowledge about the soil and natural sciences, English professional terminology and more advanced use of ICT.
- 2) a novelty will be execution of study workshops as extra curricular activities in which smaller interest groups of students will participate. The workshops will proceed in cooperation with local educational establishments (Secondary Vocational, Technical School and Vocational College Šentjur with its educational programmes Agricultural Entrepreneurship and Environmental Studies), scientific establishments (Agricultural Institute of Slovenia,...) and local societies (Beekeeper Society, Farm Women Society Šentjur, Farm Youth Society...)
- 3) methodological novelties will introduce the application of methods which stimulate more active forms of cooperation between students such as:
 - direct observation of soil and natural processes in it. These activities need to be carried out outside of the classroom. These are the activities on the agricultural and forest grounds.
 - training and gaining experience of using specialised pedologic equipment adapted to the student and teacher's abilities. The approach will enable the participants to learn about new technologies, which are rarely used in teaching practice (pedologic drill, soil analysis case, electronic pH meter, a soil-analysis mobile application, a map, a compass, etc.)
 - Use of more advanced computer programmes for observation-result analysis, data collecting and processing (QGIS – geographic information system), data

base inspection and processing (E-Tla – soil information system), processing of video material and photographs as well as production of computer graphic design (iMovie, IrfanView), creation of web sites and publishing the project results (Word Press), etc.

- a special novelty will be participation in the NASA project for photography of the Earth's surface from the International Space Station (Sally Ride EarthKAM)
- a novelty will be participation in international project groups which will make it possible for the participants to use the English language and encourage their professional cooperation on an international level
- production of a portfolio which will store the preparation documents for the project meetings.

For your inspiration:

<https://vimeo.com/53618201>