

## Natural resources

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**Subject:** Natural Sciences.

**Country of creation:** Portugal.

**Countries of testing:** Austria, Czech Republic and Finland.



### Aims of the GP

Students organize an exhibition on man's use of natural resources. They understand the need to preserve the environment and natural resources. They are aware of the technological uses of natural resources.

### Teaching material

Glass bottle; red brick; silver ring; plastic bag; paper sheet; cotton t-shirt; wool sock; silica sand; clay; petrol; native plant; piece of wood; natural wool; etc. (other materials which are part of school's inventory).

Computer; Internet access; consumables for the exhibition.

### Age of the students:

10-15

### Preparation and teaching time

Preparation: 90 min. Class time: 2 x 90 min periods.

### Lesson plan

Activity	Procedure	Time
In class	Presentation of some materials transformed by man. Students are questioned about the natural resources from which they are derived. <ul style="list-style-type: none"><li>• What are the uses of natural resources?</li><li>• What was the natural resource which was used to produce those materials?</li></ul>	40 min
In class (group work)	Students do research on the Internet about the characteristics of each natural resource and its uses, and produce a half-A4 page Identity Card (ID) for the given natural resource, using text and image.	90 min
In school	Students mount the exhibition in an appropriate location, displaying the natural resource and the transformed material side by side, as well as the ID produced.	40 min

Activity	Procedure	Time
In class	Students inform their peers about the conclusions they have reached.	10 min

### Questionnaire

Natural resources are forms of energy or matter available on Earth and usable by man.

True / False

Renewable resources are exhausted after a certain time.

True / False

Oil and gold are non-renewable resources.

True / False

Mineral resources are concentrations of rocks and minerals exploitable by humans.

True / False

Coal is a natural resource that cannot be exploited by man.

True / False

Select from the following terms those that indicate natural resources.

Oil

Energy from the wind

Orange juice

Plastic

Silver

Gold ring

Wood

Establish the correspondences between the natural resources in column A and the artefacts in column B:

Oil		Pencil
Graphite		Pottery
Silica sand		Gasoline
Clay		Electric wire
Copper		Glass
Bark of a type of oak tree		Cork

Establish the correspondences between terms in column A and column B:

Fossil fuel		Renewable Resources
Resources that can be used almost indefinitely		Hydro resources
Set consisting of all water used by humanity		Natural gas

Link the natural resources with the respective artefacts:

Gold		Ring
Fluoride		Toothpaste
Cotton		T-shirt
Corn		Popcorn
Oil		Plastic
		Tires

## Teacher reviews

Teachers who have implemented this GP mentioned that what they liked most about it was that the students would have to create an exhibition themselves with materials and artefacts that they brought and the research that they did. For instance, the Finnish teacher mentioned that the fact that the students had to create an exhibition themselves, which they would make available for the whole school to visit would be a team-building experience. It would motivate the students to do proper research in order to create something interesting and good, which would make them proud in front of their whole school. The teacher herself was proud to see that her “students created a 12 m long exhibition gallery, that can be expanded and filled with additional materials every year by new students”. She also mentioned that it was great to see that other students could learn from the exhibition and could therefore learn from their fellow students.

## The SPICE project

SPICE was a two-year project (December 2009 – November 2011) carried out by **European Schoolnet** (<http://europeanschoolnet.org>) together with **Direção Geral de Inovação e Desenvolvimento Curricular** (<http://sitio.dgicd.min-edu.pt/Paginas/default.aspx>) from Portugal and **Dum Zahranicnich Sluzeb MSMT** (<http://www.dzs.cz/>) from the Czech Republic.

The primary objective of the SPICE project was to collect, analyse, validate and share innovative pedagogical practices, particularly those using inquiry-based learning, whilst enhancing pupils' interest in the sciences. SPICE supported this objective by singling out, analysing and validating good practice pedagogies and practices in maths, science and technology (mostly ICT-based) and disseminating them across Europe. SPICE involved 24 teachers from 16 different educational systems (from 15 different countries). This teachers' panel helped the SPICE partners in defining good practices that were then tested in classes by 41 teachers during the school year 2010-2011.

For more information see: <http://spice.eun.org>



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