

Natural Engineers

by the Erasmus+ Group of Europaschule am Friedensplatz

Bioeconomy

- ▶ The idea for this presentation on the topic of Natural Engineers came from the visit of our Erasmus+ team to the MS Wissenschaft - MS Science. The ship, a former cargo vessel was transformed into an interactive exhibition.
- ▶ In the exhibition different ways of creating a bio-based economy that aims at a more sustainable way of life and deals with current problems like climate change, shortage of agricultural land and the foreseeable shortages of fossil resources are presented.
- ▶ Compare: www.ms-wissenschaft.de



1. Ways to replace natural resources

There are many ways to replace fossil resources to aim at a sustainable and climate-neutral economy as well in the production of food as also relating to construction materials and medicine:



a) Green resources as alternatives for fossile resources:

- ❖ **Fungi** (used to produce antibiotics, cheese and recently bio-based surfactants used to wash and clean environmentally friendly were developed)
- ❖ **Moss** (able to filter the air)
- ❖ **Grass** (large areas of grass, easy cultivation, reduce the risk of erosion, used to produce paper, low amount of water needed)
- ❖ **Hemp** (used to produce textiles)
- ❖ **Bamboo** (provides huge amounts of wood used in construction and as replacement for plastic)
- ❖ **Russian Dandelion** (contains rubber and can be used e.g. to produce tyres; can be cultivated in our region and therefore climate-friendly, short transportation)



b) Sustainable materials for floors

- ❖ Cork (not only used for wine bottles but also to produce floor tiles or furniture)
- ❖ Grass terrace tiles
- ❖ Bamboo (used for floors and furniture, can be produce in an ecologically friendly way)
- ❖ Hay (along with herbs and flowers from mountain meadows can be made into flooring without artificial materials)



c. Plastic made from plants



- ▶ Worldwide plastic waste contaminates our planet and is a danger to animals and humans. An alternative are plastic products made from plant starch instead of oil which is biodegradable and therefore sustainable.

2. The future of our food

- ▶ Meat production contaminates our climate by the high release of carbon dioxide and the huge amount of water that is used. Alternatives that are more sustainable is food e.g. burgers made from insects and in vitro meat produced from cell cultures.



3. More sustainable ideas for an environmentally friendly production

- a) Electricity produced by bacteria
- b) Algae that are able to clean water
- c) Scents replace pesticides to protect nature from harmful insects



Creating awareness

- ▶ At the MS Science students are able to find out about and experience many ways for a sustainable lifestyle and possibilities of production methods that are economically friendly.
- ▶ The exhibition shows how modern science and technology have developed ways for protecting the environment without threatening economic success.



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