Lesson presented in mother languages 3

**Environmental sustainability**

Einstiegphase

*1. 2.* Present the topic of the lesson by asking the group “What is sustainability?”. They can discuss the question in small groups of 4 people, the ones sitting close to each other. Bring up the question in the whole group and write the student’s answers on the board. Take a picture of the answers. This will later be uploaded on twinspace.

*3.* Present the three aspects of sustainability. “There are several aspects of sustainability: economic, social and environmental. On this lesson we’re focusing on the environmental aspect of sustainability. With that in mind, we’re watching a film.”

Erarbeitungsphase

*4.* Show the video clip <https://www.youtube.com/watch?v=-g21O7a9280>. Discuss the meaning of the clip. Make sure that everyone understood it and answer possible questions. If it's needed, watch the film again.

*5.* Name the four principles that the film talked about.

1. Reduce our dependence on fossil fuels and heavy metals.
2. Reduce our dependence on synthetic chemicals that persist in nature.
3. Reduce our destruction of nature.
4. Ensure that we do not stop people globally from meeting their needs

*6.* Now we’re going to explain some examples of where these principles should be used. In different countries there are different kinds of environmental problems. Since this is the Erasmus project, we will present five problems from the five countries that are participating in the project. We will also present possible solutions.

*7.* **Sweden - Monocultural forests**

Problem: The photo to the left is an example of a natural primary forest in Sweden. To the right is an example of what a planted forest looks like. Nowadays the planted forests are replacing the natural primary ones and this is a huge problem in an ecological aspect. Some species of plants aren’t able to grow in that kind of monoculture forest, where the same kind of trees are planted very close to each other.

Consequences: Also the animals are affected by this constellation of planted forests. For example a bird called the woodpecker. It needs dead trees, since they are softer than other trees, to build their home. The woodpecker builds new homes every year. The remaining homes from previous years is taken over by other animals, for example different kinds of birds and owls. In the planted forest the amount of dead trees are few, which means no homes for the animals that are depending on the woodpecker.

Solution: The preservation of the primary forests and dead trees.

*8. 9. 10. 11.* ***Deutschland***The Lower Elbe (“Unterelbe”) is the part of the river Elbe between Hamburg and the Northern Sea. It is a region that on the one hand inhabits many rare species and on the other hand is used by many container ships to get to the port of Hamburg.

The oenanthe conioides is a plant that only grows at the riverbank of the Elbe. It is a flower that is almost extinct. It needs the ebb and flood tides that are special characteristics for the Lower Elbe. The river banks are also the home of many birds, that build their nests there.

Container ships are becoming bigger and bigger. For the big ships to be able to access the port of Hamburg, the path of the ships in the main branch of the river needs to become deeper. This has already been done multiple times and another deepening is planned at the moment.

The black line on the map shows the path that is deepened. When the river is deepened, the tide in the Elbe becomes much stronger, which pushes sand into the side branches of the river, which is where the rare flower oenanthe conioides grows (red-striped areas on map). The only solution if the German politician will not change their mind about the deepening would be to manipulate areas of the side branches that have the special characteristics of the endangered ecosystem is kept.

*12.* **Poland**

Problem: The Białowieża Forest boasts Europe’s tallest trees and largest mammal, the bison. Poland’s government announced a drastic increase in the logging of the odd forest around these protected areas. Local communities were permitted to harvest 48 000 cubic meters of timber each year but the government was to to allow at least 180 000 cubic meters. The environment minister claimed that the forest is rotting away because spruce trees are being killed by the spruce bark beetle. Scientists said that such intervention would do more harm than good.

Consequences: If this was allowed it would become a managed forest, so its value and its biodiversity would be lost. It would take hundreds of years to reverse this kind of destruction.

Solution: There was EU intervention so polish government stopped logging the forest.

*13* **Hungary:**

The air pollution in Hungary is not center on just one place, but almost in the whole country. The places which are the most affected: Sajoszentpeter, Miskolc, Debrecen, Budapest, etc… The air pollution in Hungary was worse before a system change, but the situation is still not good. The causes of this problem are fossil fuels, and center on the big cities when there is no wind that can move the pollution. It has a lot harmful affections. This is like a poison for humans and animals, because it`s weakens their immun system. The trees are getting sicker, and the little flowers die. For this problem would be rape oil a great solution, because it`s renewable.

*15.* **Italy:**

Naples is a city situated on the south of Italy and is really famous for his landscapes.

Campania used to be the most fertile region in Italy but now there are some problems and one of these is the large amount of garbage.

In this area, that goes from Naples to Caserta, known as “Terra dei fuochi” (land of fires) there are a lot of abusive landfills which caused a ruin for the harvest.

In these landfills, a lot of toxic waste are dispersed on the streets, and even in the sea, or accumulated and then burnt.

This cause blazes and their toxic smokes, like dioxine, spread all over the city.

The most serious problems are in agriculture and in breeding, in fact milk products and especially mozzarella are damaged.

Another problem is the visual impact on a very touristic area like Naples.

To solve these issues we can do a reduction of waste, a garbage collection in every house, a recycling and a bio exsiccation which make waste not toxic.

*16.* To sum up:

As you can see ecological sustainability is a problem in different countries. To spread this knowledge, maybe we all can work to make the world more sustainable.

*17.* Rules for the quiz:

Make groups of 4-5 persons. Each group will get cards or papers with printed letters A,B,C,D. The teacher will read the question and the answers. The groups will get 10 seconds to discuss their answer and when the time is up, everyone will hold up the paper with their answer. All groups at the same time. Groups with the right answer will get points that the teacher writes on the board.

*18.* What´s the meaning of sustainability?

1. things can keep going Correct
2. to improve something
3. to protect nature
4. to stop existing

19. From which country did the idea of principles of sustainability come?

1. France
2. Japan
3. Sweden Correct
4. Spain

20 How many principles was the film talking about?

 a) Two

 b) Four Correct

 c) Three

 d) Five

 21. Which are the three developments?

 a) Economic, Social, Political

 b) Environmental, Social, Political

 c) Economic, Political, Environmental

 d) Economic, Social, Environmental Correct

 22. What is the problem in Sweden?

 a) Monocultural forests Correct

 b) Toxic waste

 c) Air pollution

 d) Deforestation

 23. What is the conflict in Germany?

 a) Selling wood vs. the existence of rare species

 b) Air pollution vs. toxic waste

 c) Economic benefits of the port vs. the existence of rare species C

 d) Economic benefits of the port vs. air pollution

 24. What could you do to solve the problems in Italy?

 a) reduction of waste,

 b) a garbage collection in every house,

 c) a recycling and a bio exsiccation

 d) all of them Correct

 25. Why polish government stopped logging the Białowieża Forest?

 a) because of the EU intervention Correct

 b) because of the prime minister´s decision

 c) polish government didn’t stop logging

 d) none of them is correct

 26. Why rape oil could be a great solution for Hungary?

 a) it`s renewable Correct

 b) it couldn´t be a great solution

 c) it´s not expensive

 d) it´s not toxic

 27. Which problems have the biggest consequences?

 a) Italy

 b) They’re all in the same level Correct

 c) Hungary

 d) Poland

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