2018 EUROPEAN YEAR OF CULTURAL HERITAGE #EuropeForCulture

LOVE IS CULTURE

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WHAT'S YOUR LETTUCE?

BIODIVERSITY

Teaching Activity 1

Biodiversity

Biodiversity is something of a difficult word, which, alas, often involves only a few people: namely the ones who have firsthand dealings with it (environmentalists, biologists, agronomists and so on). Yet it ought to be easy enough to grasp, seeing how it refers to the diversity of life at every level, from the simplest (genes and bacteria) through plant and animal species to the most complex of all (ecosystems). All these levels intersect, influence each other and evolve.

Scholars at Stanford University have compared the species and varieties of an ecosystem to the rivets that hold an airplane together. If we get rid of them, nothing happens for a while and the plane stays in the air. But, little by little, the structure gets gradually weaker and, at a certain point, you only have to take out one more rivet for the plane to crash.

Biodiversity is our insurance for the future: it enables plants and animals to adapt to climate change, to aggression from parasites and diseases, to the unexpected. Whereas a system based on a limited number of varieties is very fragile.

The best-known proof of the fact was the great famine in Ireland in the mid 19th century when, from 1845, a blight infected the potato crop, causing either the death or emigration, mainly to the United States, of millions of people. This happened because in Ireland they grew only one potato variety, which eventually proved vulnerable to the spread of the blight in question. The disease resistance that later made it possible to fortify Irish potatoes was identified among the thousands of potato varieties cultivated by farmers in the Andes and in Mexico.

Without biodiversity, potatoes would not be one of the world's staple crops today.

The episode described was nature's first warning to human beings about the dangers of genetic uniformity.

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Preparation and set-up

• Read the first part of the story, 'The Ark of Taste Goes to School', with the class.

• Procure different types of leafy vegetables and lettuce

• Assemble the mystery box (see instructions annexed) or, alternatively, procure a sack or a blanket.

Description of the activity

After reading the first part of 'The Ark of Taste Goes to School', ask the children to list the parts of the story they remember. Focus on the landscape described at the beginning: "...meadows lush with flowers of a thousand shapes and colors. None of them were identical and the same was true of the fruits that grew in the trees [...] It was a magical valley whose beauty lay in the variety of the species that lived in it, where men and women and grandparents and children lived happily, following the rhythms of life and the seasons."

Hand each child a sheet of paper and provide crayons and felt-tip pens for all. Ask them to fold the paper in half and to draw the "image" that comes into their minds when they hear the word "lettuce" on the left-hand side.

After a few minutes, compare the children's drawings, noting analogies and differences (color and size of leaves, shape of heads and leaves etc.). In the common imaginary, lettuce is often green in color with medium-/large-sized leaves. If there are any, turn the attention of the class to drawings that show lettuce with leaves of different shapes or colors (purple, white, red, shaded green and white or purple and white etc.).

Divide the class into groups and give each a head of lettuce, choosing from varieties grown locally and opting for those with different features (very small or very large leaves with distinctive shapes and colors such as yellow, purple, red etc.).

The members of each group observe the lettuce assigned to them, passing it round and, if they wish, pulling off leaves and observing them in detail. Each member of the group subsequently draws the lettuce they have just finished analyzing on the blank half of their sheets of paper. Each group picks a leader who describes to the rest of the class the specific characteristics of the lettuce as perceived using sight, while the other group members show them the head of lettuce and their drawings. The teacher asks the students to list the names of the various lettuces and tells them the ones they don't know.

There might also be some discussion about the word "lettuce": in common parlance it is often used to describe other plants with leaves that are eaten raw. It is wrong, however, to call all leafy plants lettuce and it is important to gain awareness of biodiversity, discovering, recognizing and learning the correct names of all the different varieties.

After analyzing the lettuces using sight, the next step is to use touch.

Pick a child in each group to touch a lettuce and guess what type it is. Hand them the mystery box containing one of the types of lettuce examined in the previous activity (or, alternatively, cover it with a sack or a blanket). The student puts his or her hands through the holes, touches the lettuce, analyzes its characteristics and tries to guess what it is.

An alternative approach could be to let the group leader touch the lettuce and, without naming it, describe it to the other members of the group. It will then be up to them to guess the name on the basis of the tactile sensations described.

The activity ends with an explanation of what biodiversity is and why it is so important for the life of humanity and the planet. Every species has its own particular function within the environment: plants capture the energy of the sun and transform it into living matter, herbivores eat plants and carnivores eat

herbivores. The more various an environment is (that is, the more biodiversity it has) the more it is resistant, hence capable of defending itself from phenomena such as drought, cold, heat, floods and pollution. Just as in the story: **when biodiversity starts to wane** (The trees were uprooted in the old orchards to make room for identical fields in which the same plant varieties were grown) **and when non-eco-friendly chemicals are used** (they sprinkled this strange gray powder all over the Valley. 'It's to help the soil,' they said), **so the Great Grayness appears** (But odd things began to happen. One day some trees fell ill, soon after the water in the river near the village grew scarce and what was left went all dark. We soon realized that something awful was happening to the whole valley.).

Teaching aids

Four or five heads of lettuce of different varieties, blank sheets of paper, crayons or felt-tip pens, mystery box or a sack or a blanket.

Approfondimenti

- ***Biodiversity. What it is, what it means for our daily food, what we can do to preserve it.***
  www.fondazioneslowfood.com/wp-content/uploads/2015/04/biodiversita_manuale_ENG.pdf
- ***What is Biodiversity & Its Importance?***
  www.youtube.com/watch?v=ErATB1aMiSU
- ***Preserve Biodiversity, Preserve the Planet***
  www.youtube.com/watch?v=JvNG986_3RU&t=81s

Annexes

ASSEMBLING THE MYSTERY BOX

Material

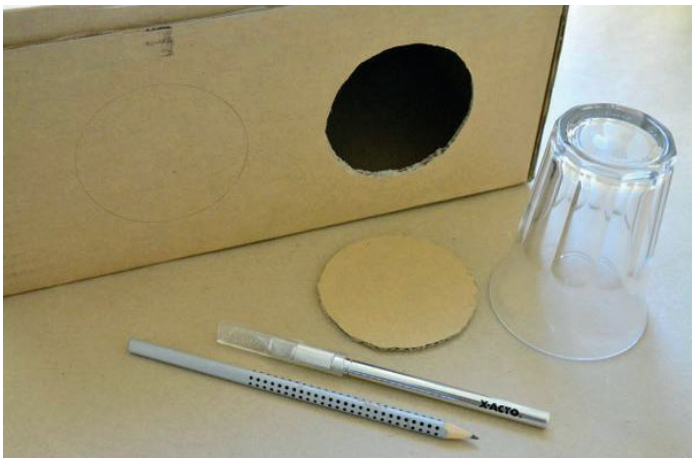
A suitably large cardboard box (approximately 50 cm x 25 cm), scissors, cutter, glue/hot-melt adhesive, adhesive tape, pieces of material and/or an old pullover to cut the sleeves from.

Assembly

Cut two round holes on the long side of the box, large enough for the children to put their hands through. Cut the sleeves off an old pullover and, using the hot-melt adhesive, stick them over each hole. Alternatively, cut the material into strips large enough to cover the holes and secure them to the box with adhesive tape. Cut a 10 cm. hole at the center of each piece of material. If you are assembling more than one mystery box, number them to aid identification.

Cut a very wide hole on one of the short sides of the box and close it by fixing a piece of material to the top edge (this allows you to place the food products in the box).

Here are some examples:



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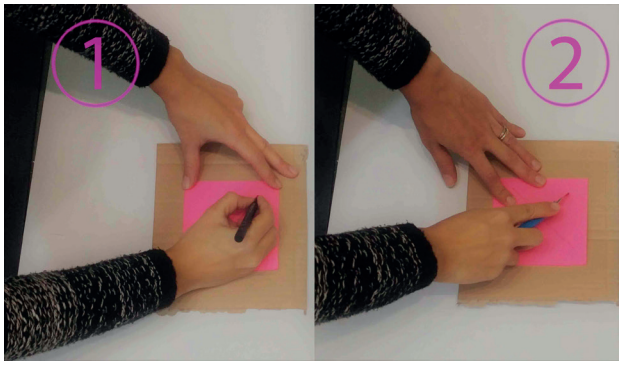

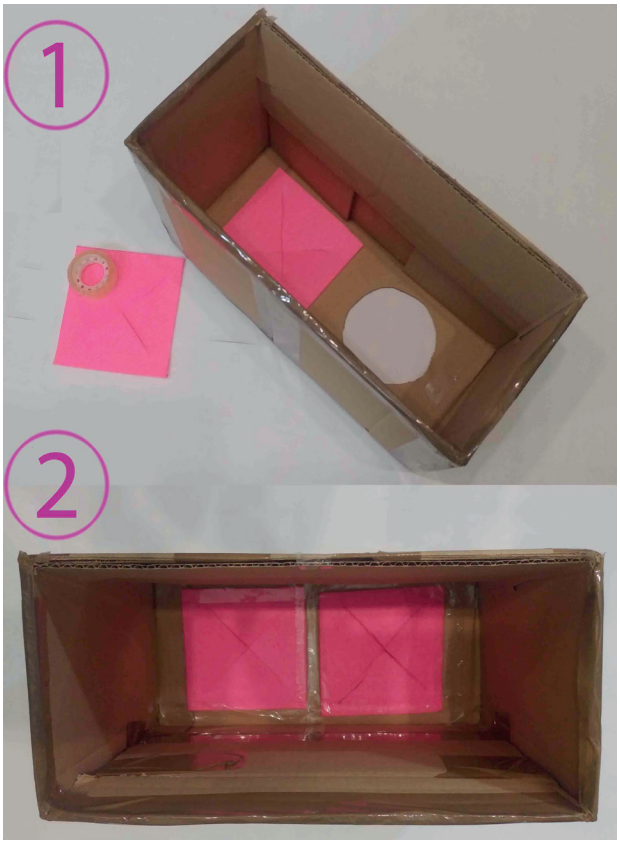

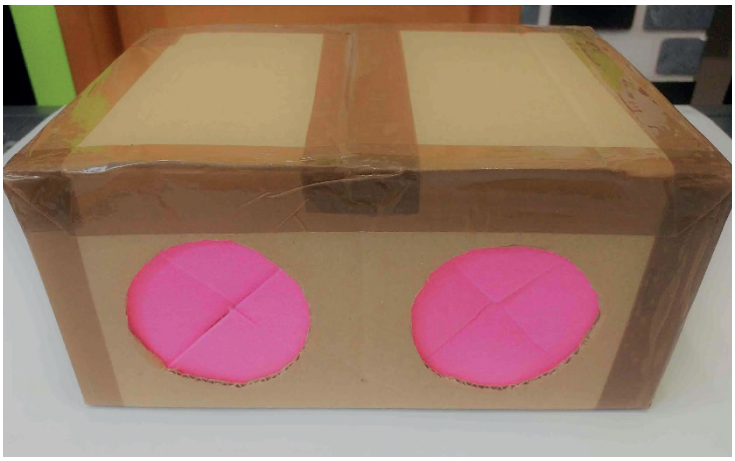

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